XEROX

GENERIC PROGRAMS

860 INFORMATION PROCESSING SYSTEM

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INTRODUCTION

Xerox provides Generic Programs to help make your job easier. The programs are referred to as generic because they can be used on a variety of documents and are not limited to the type of work done in any particular office.

The programs can perform tasks automatically for you, thus saving time and keystrokes. For instance, you can use the phrase recall program to automatically insert a phrase numerous times in your document. With this program you only need to type the phrase once. Then the program will "retype" the phrase in any document anytime you need it.

Using this Training

In addition to this Generic Program section of your manual, you will need the Generic Program Disc and a working disc for your practice exercises.

Before learning to use programs, you should have completed the training in the 860 Operator Manual.

It is not necessary for you to learn to use all of the programs. Each program has its own set of instructions and you should learn only those programs that apply to the type of work you do on your job. When you have finished reading the introduction, you can select one of the programs and learn how to use it.

The instructions for the programs are divided into different parts that tell you what each program will do and how to use it.

PROGRAM NAME	This part lists the name (title) of the program as it appears in the Index. Unless the instructions tell you otherwise, the program must be copied onto your working disc before you can use it.
Test Document	Some of the programs have test documents stored on the Generic Program Disc. If you want to practice running the program, you can copy the test document onto your working disc and use it for a practice exercise.
Purpose of the Program	This tells you what the program does and how it can help you in your job.
Limitations of the Program	This tells you what the program cannot do. For example, a particular program may not work if your document has more than 72 lines on a page.
Document Set-up	This tells you how to type or revise the document before using the program. It also includes a practice exercise.
Using the Program	This tells you step-by-step how to run the program. It also includes error messages you may see if the program cannot complete its task.

In addition, this training will be using codes you may or may not have seen before. Some examples are:

	Touch	Screen Symbol	Code Print Symbol
Null Code	CODE + 6		∅
Switch Code	CODE + 7		↗
Index	INDEX		
Reverse Index	CODE + INDEX		

Using Programs

When you are ready to use one of the programs, you will need to copy it from the Generic Program Disc onto your working disc.

Programs are not recalled to the screen like other documents. To use a program, you press the PROGRAM key (located above the SEARCH key), type the program's title and touch ACCPT. The program will then begin performing its task (such as entering the phrase recall text in your document). This is referred to as running or "executing" the program.

When the program begins, it will briefly show some numbers in the Command Line. These numbers are the software level. The only time you need to make a note of the software level is when you are going to call the Customer Support Center (CSC) with questions or problems. The CSC may ask you what software level you have.

The program may also ask you questions in the Command Line. This allows you to tell the program exactly how you want it to work on your document.

The Program Disc

When you look at the index of the Generic Program Disc, you will notice that all program titles are preceded by a pound sign (#). This makes it easy for you to tell which titles are programs and which are text documents. In addition, all programs have "PM" in the TYPE column, instead of the "WP" that other documents have. Since programs cannot be recalled to the screen like a document, you will get the message "WRONG DOCUMENT TYPE" if you try to recall a program.

DISC DOCUMENT INDEX

INDEX: PROGRAMS TITLE	TYPE	CREATED	REVISED	PAGES	SECTORS
↗ #DUAL TEXT	↗ PM	6/23/80	/ /	119	3
↗ #MULTI TRAIL	↗ PM	6/23/80	/ /	223	4
TEXT DOC	WP	6/23/80	/ /	5	15
↗ #PHRASE RECALL	↗ PM	6/23/80	/ /	52	3
*TRAILER 1	WP	6/23/80	/ /	1	2
*TRAILER 2	WP	6/23/80	/ /	1	2
WILL VARIABLES	WP	6/23/80	/ /	3	4
↗ #ASSEMBLE	↗ PM	6/23/80	/ /	342	7
WILL 2	WP	6/23/80	/ /	1	2
↗ #LINE NUMBER	↗ PM	6/23/80	/ /	179	4
WILL 3	WP	6/23/80	/ /	1	2
↗ #COLUMNS	↗ PM	6/23/80	/ /	156	4
STAT DOC	WP	6/23/80	/ /	1	3

Document Index GP-1

If You Make a Mistake

If you're running a program and discover an error, you can touch STOP to interrupt the program (it may take a few seconds for the program action to stop). Then the message "CONTINUE?" will appear in the Command Line. Touch STOP again to answer "no" and clear the document. You can then run the program again.

If you accidentally delete a program from the Index, you can go to the Backup Index and recover it. Programs are recovered in the same manner as your other documents. See "Utilities" in the "HOW TO" section of your Reference Manual for complete instructions.

* * * * * * *

Now you are ready to select a program and learn how to use it. Choose one from the following list and turn to the page number shown. Then follow the instructions for creating a practice document and running the program. You may also find it helpful to refer to the instructions for running the program whenever you use the program in the future.

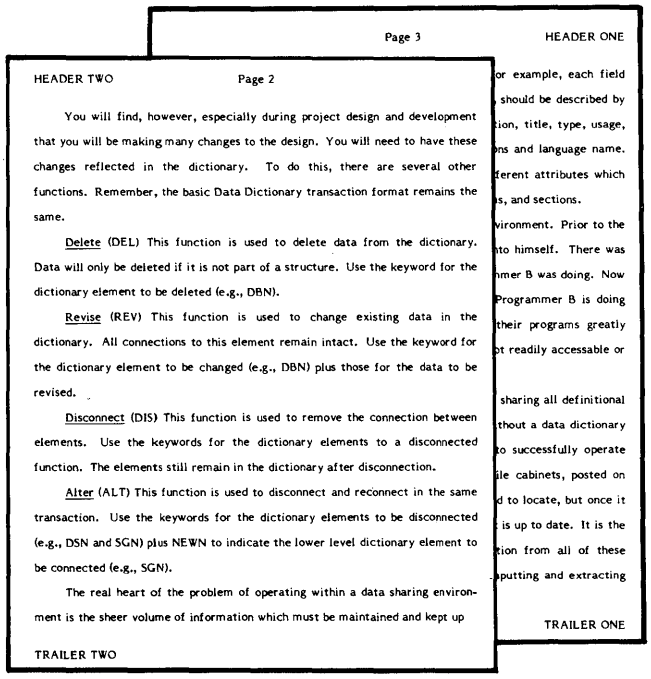
ALTERNATING HEADERS & TRAILERS

PROGRAM NAME: #ALT HEAD:TRAIL

Test Document: ALT DOC

Purpose of the Program

This program will automatically insert alternating headers and trailers in a document. The program enters these headers and trailers in the format blocks of the document. The program allows you to enter two different sets of header/trailer information, one on every other page. With this program you can use different words for your header and/or trailer on every other page and you can also position your headers and/or trailers differently on every other page.



Alternating Headers & Trailers Example GP-2

Limitations of the Program

The headers and trailers may not contain more than 62 characters each; however, headers and trailers may contain carrier returns, centering codes, right flush codes, etc.

The document should be paginated using a page layout which leaves enough room in the top and bottom margins for your headers and trailers.

Any headers, trailers, or comments recorded in the format block of your text document will be replaced by the headers/trailers entered by the program.

After the program is run, you should store the document under a new title. While minor revisions/corrections, such as character or word replacements, can be made to the document containing the alternating headers and trailers; major revisions should be made on the original text document and the program run again.

Document Set-up

Before you run the program, the text document should be reformatted, paginated, and stored in its final form.

Using the Program

When your text document has been reformatted and stored, follow the instructions below for running the program. The program will ask you on which line the header should begin, on which line the trailer should end, and what paper size you are using. The program will also ask you to type in the header and trailer information for each of your alternating pages, one at a time. Be sure to type any tabs, center codes, carrier returns, etc. necessary to position the header and trailer information. Include the desired number of carrier returns at the end of the header information and at the beginning of the trailer information to separate them from the document text. If no header or trailer is desired for any one of these locations, touch the ACCPT key without typing in any text.

To run the program:

Step 1	**RECALL**	the text document requiring alternating headers and trailers to the screen. (For practice you can copy the document ALT DOC from the Generic Program disc onto your working disc and run the program on it.)
	CHECK	that the cursor is in the "home" position (the upper left corner).
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#ALT HEAD:TRAIL**
	TOUCH	the ACCPT key.
	Result	the Command Line briefly shows the software level, then displays the message: ON WHICH PRINT LINE IS HEADER TO BEGIN?
Step 3	**TYPE**	the number of the line where you want the header to begin.
	TOUCH	the ACCPT key
	Result	The Command Line displays the message: ON WHICH PRINT LINE IS TRAILER TO END?

Step 4	**TYPE**	the number of the line where you want the trailer to end.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: PAPER SIZE?
Step 5	**TYPE**	the number of line spaces on your paper. Remember: for an 11" sheet of paper, the number of line spaces available is **66.**
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER FIRST HEADER:
Step 6	**TYPE**	the first header just the way you want it to appear in the format block.
	TOUCH	the ACCPT key.
	Result	the Command Line displays the message: ENTER SECOND HEADER:
Step 7	**TYPE**	the second header.
	TOUCH	the ACCPT key.
	Result	the Command Line displays the message: ENTER FIRST TRAILER:
Step 8	**TYPE**	the first trailer.
	TOUCH	the ACCPT key.
	Result	the Command Line displays the message: ENTER SECOND TRAILER:
Step 9	**TYPE**	the second trailer.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: BEGIN HEADERS/TRAILERS ON WHAT PAGE?
Step 10	**TYPE**	the page number on which you want the alternating headers and trailers to begin. For example, if you want the alternating headers and trailers to begin on page 1 of the document, type a **1.** If you want the alternating headers and trailers to begin on page 5 of the document, type a **5.**
	TOUCH	the ACCPT key.
	Result	The page on which you want the alternating headers and trailers to begin appears on the screen and the Command Line

displays the message: PAGE # IN HEADER OR TRAILER? (ACCPT/STOP).

Note: if you do not have page numbers in your headers or trailers, touch STOP in response to this message and the program will continue with the result at the end of Step 12.

Step 11 **TOUCH** the ACCPT key if you have included page numbers in any of your headers/trailers.

Result the Command Line displays the message: CHANGE PAGE LABEL NUMBERING? (ACCPT/STOP).

TOUCH the STOP key if you want the page numbering to start with the number 1 and the program will continue with the result at the end of Step 12.

OR

TOUCH the ACCPT key if you want the page numbering to start with any number other than number 1.

Result the Command Line displays the message: ENTER BEGINNING PAGE LABEL #:

Step 12 **TYPE** the number that you want the page numbers to start with.

TOUCH the ACCPT key.

Result The Command Line displays the message: DISPLAY OFF? (ACCPT/STOP).

You can indicate your preference at this point. For this exercise keep the display on the screen by answering "no."

Step 13 **TOUCH** the STOP key.

Result the program starts running and the Command Line displays the message: HEADERS AND TRAILERS BEING INSERTED -- PLEASE WAIT.

When the alternating headers and trailers are completed, the last page of your document is on the screen and the Command Line displays the message: HEADER AND TRAILER INSERTION COMPLETE!

Step 14 **TOUCH** the STOP key.

STORE the document under a new title.

COLUMNS

PROGRAM NAME: #COLUMNS

Test Document: COLUMN TEST DOC

Purpose of the Program

The Columns program will assist you in editing statistical document. You can use it to insert a column, replace a column, delete a column, or move (rearrange) columns. Using this program will save time when editing statistical documents.

BREAKDOWN OF SALES

Sales 6-Month	1980 Actual	Sales Forecasted
$ 103,400	$ 220,950	$ 215,675
97,523	None	195,000
1,104,897	1,203,456	1,000,650
1,305,820	1,424,406	1,000,650

Limitations of the Program

The total number of characters on one line should not exceed 250.

The document must be stored on disc before the program is run.

The program will delete **bolding, overstrike,** and **underline** when it runs, so you must put them back in after running the program.

Document Set-up

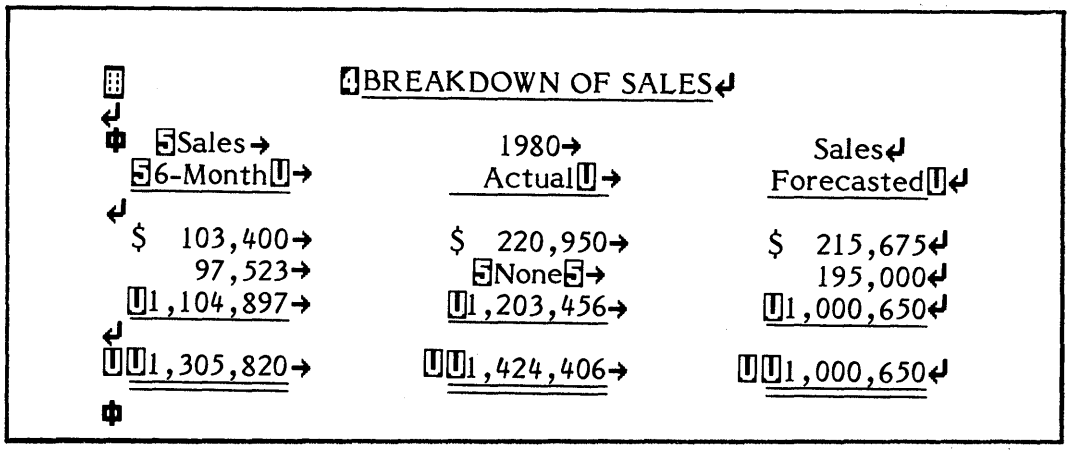
Before you can use the Columns program, you will need to set up your statistical document following certain rules. You will use codes to mark the beginning and mark the end of the statistical document. Using the codes allows you to mix text material with statistical material in your document.

To type or edit a document prior to using the columns program, follow these rules:

- Set at least one special tab in the format block for the statistical table. If you are not using special tabs for your columns, set one outside the left margin (at 2, for instance).
- Be sure your format block has the tab settings necessary to align any columns you are going to add while using the program.

- A CODE + 6 (null code) must be recorded at the beginning of your statistical table. This tells the program where to begin.
- If the first column contains text, no tabs can be used to indent text in that column.
- Use only Lower Tabs to tab to the columns of numbers.
- Do not leave any columns blank. If there is no information for a particular column, it should be filled with a CODE + Space.
- If you wish to center entries within the columns, type the entry in the following manner: Lower Tab, CODE + 5, text, CODE + 5, Lower Tab. The CODE + 5 must be between the Lower Tabs.
- Record a CODE + 6 (null code) after the last line of columns. This tells the program where to stop.

If you want to practice creating a columnar document, continue with the following exercise. If you do not want to practice creating a columnar document but would like to practice running the Columns program, proceed to the section titled **Using the Program.**



To create the practice exercise:

Step 1 **TITLE** a new document and bring it to the screen.

SET the following Format:

- Margins at 22 and **72**
- Tabs at **22**, **32***, **42**, **52***, **62**, **72***, **82**, and **92*** (The tabs at 82 and 92* are set so you'll be able to add another column.)

Step 2 **CENTER** and type the main heading, using a CODE + 4, and return twice.

TYPE a CODE + 6 to mark the beginning of your statistical table.

CONTINUE typing the first line of centered headings using the following steps:

- Type a CODE + 5
- Type the word **Sales**
- Tab and type the word **1980**
- Tab and type the word **Sales**
- Touch the RETURN key.

Step 3 **CREATE** the second line of centered headings using the following steps:

- Type a CODE + 5
- Type **6-Month,** type a CODE + UND
- Tab and type **Actual,** type a CODE + UND
- Tab and type **Forecasted,** type a CODE + UND
- Touch the RETURN key.

FINISH creating the remainder of the document, using the symbols in the example as a guide.

Step 4 **TYPE** a CODE + 6 after the last line to indicate the end of the columns.

HIGHLIGHT the document and review for proper placement of tabs, CODE + 5s, 6s, etc.

STORE the document.

Using the Program

When the document has been typed and stored, you are ready to use the column program. Before you run the program, it is a good idea to print your column document and number the columns on the printout. Number the columns 1, 2, 3, etc. from left to right. Material at the left margin is considered as Column 1. If a tab precedes the first column, it is considered to be Column 2.

COLUMN #s					
1	2	3	4	5	6
January	123.56	134.23	150.25	140.00	175.89
February	22.02	234.78	214.09	210.46	500.00
March	122.22	543.12	980.21	94.23	325.01
April	345.09	234.78	123.56	795.23	120.06
May	904.26	235.21	234.56	123.56	405.09
June	456.78	231.65	900.10	805.00	234.99
July	453.12	98.34	204.39	345.12	987.45
August	345.23	987.00	234.12	435.21	900.60
September	900.32	654.34	300.00	345.67	600.40
October	345.23	124.56	900.90	888.88	231.89
November	456.32	123.56	348.09	900.45	178.45
December	567.12	987.34	89.34	745.09	123.45

The Columns program will ask you what kind of editing changes you wish to make on your statistical table. That is, it will ask if you want to delete a column, insert a column, move your existing columns around, or replace an existing column.

If you use the program to make any changes that involve Column 1, any column center codes used in your headings will be affected. That is, if you move Column 1 these codes will be moved with it; if you delete Column 1 these codes will be deleted with it. You must put the codes back at the beginning of the line(s) before you store the document.

Instructions have been included to assist you in using the program to: add a column, replace a column, delete a column, and to move columns.

To run the program and add a column:

When you want to add a column, check to be sure you have added the extra tab settings to the Format Block of the document before you run the program.

Step 1	**RECALL**	the document containing the columns to the screen. (For practice you can recall the exercise document you just typed or you can copy COLUMN TEST DOC from the Generic Program disc onto your working disc and run the program on it.)
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#COLUMNS**
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: PRESS FUNCTION KEY: DEL, COPY (INSERT), MOVE, RPLCE.
Step 3	**TOUCH**	the COPY key.
	Result	The Command Line displays the message: INSERT NEW COLUMN?
	TOUCH	the ACCPT key to say you want to insert a new column.
	Result	The Command Line displays the message: DISPLAY OFF?

You can indicate your preference at this point. For this exercise keep the display on the screen by answering "no."

Step 4	**TOUCH**	the STOP key.
	Result	The 860 counts the columns and the Command Line displays the message: ENTER POSITION # OF NEW COLUMN: " ".

Now you'll type in a number to indicate where the new column should appear. For example, if you want to add a column between the second and third columns, you'd type a 3, because the new column will be entered in the 3rd column position.

Note: If your document contains text at the left margin, the text is counted as a column.

Step 5 **TYPE** the appropriate number for the column position. For this exercise, type 3.

TOUCH the ACCPT key.

Result The position for the new column entry is highlighted and the Command Line displays the message: ENTER NEW COLUMN:

For this exercise, insert the following column.

1980
Bonus
$1,500
2,200
1,850
5,550

Step 6 **TYPE** the number (or column heading) to be entered in the column. Note that what you type appears in the Command Line. You can make corrections by using the backspace key.

TOUCH the ACCPT key.

Result The column entry is put in your document and the system highlights the next entry position and the Command Line displays the message: ENTER NEW COLUMN:

CONTINUE typing entries for each line.

When you've typed the last column entry, the Command Line displays the message: COLUMN INSERTION COMPLETE.

Step 7 **TOUCH** the STOP Key.

STORE the document. If you want to save both versions of the document, store this document under a different title.

To run the program and replace a column

Step 1	**RECALL**	the document containing the columns to the screen. (For practice you can recall the exercise document you just typed or you can copy COLUMN TEST DOC from the Generic Program disc onto your working disc and run the program on it.)
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#COLUMNS**
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: PRESS FUNCTION KEY: DEL, COPY (INSERT), MOVE, RPLCE.
Step 3	**TOUCH**	the RPLCE key.
	Result	The Command Line displays the message: REPLACE EXISTING COLUMN?
	TOUCH	the ACCPT key to acknowledge you want to replace an existing column.
	Result	The Command Line displays the message: DISPLAY OFF?

You can indicate your preference at this point. For this exercise keep the display on the screen by answering "no."

Step 4	**TOUCH**	the STOP key.
	Result	The 860 counts the columns and the Command Line displays the message: ENTER COLUMN POSITION TO BE REPLACED: " ".

Now you'll type in a number to indicate which column you wish to replace.

Step 6	**TYPE**	the appropriate number for the column to be replaced. For this exercise type **2**.
	TOUCH	the ACCPT key.
	Result	The position for the replacement column entry is highlighted and the Command Line displays the message: ENTER NEW COLUMN:

For this exercise, use the following column.

1979 Advance
$3,200
4,200
450
7,850

Step 7 **TYPE** the number (or column heading) to be entered in the column. Note that what you type appears in the Command Line. You can make corrections by using the backspace key.

TOUCH the ACCPT key.

Result The column entry is put in your document and the system highlights the next entry position and the Command Line displays the message: ENTER NEW COLUMN:

CONTINUE typing entries for each line.

When you've typed the last column entry, the Command Line displays the message: COLUMN REPLACEMENT COMPLETE.

Step 8 **TOUCH** the STOP Key.

STORE the document. If you want to save both versions of the document, store this document under a different title.

To run the program and delete a column:

Step 1 **RECALL** the document containing the columns to the screen. (For practice you can recall the exercise document you just typed or you can copy COLUMN TEST DOC from the Generic Program disc onto your working disc and run the program on it.)

Step 2 **TOUCH** the PROGRAM key.

TYPE **#COLUMNS**

TOUCH the ACCPT key.

Result The Command Line displays the message: PRESS FUNCTION KEY: DEL, COPY (INSERT), MOVE, RPLCE.

Step 3 **TOUCH** the DEL key.

Result The Command Line displays the message: DELETE COLUMN?

TOUCH the ACCPT key to acknowledge you want to delete a column.

Result The Command Line displays the message: DISPLAY OFF?

You can indicate your preference at this point. For this exercise keep the display on the screen by answering "no."

Step 4 **TOUCH** the STOP key.

Result The 860 counts the columns and the Command Line displays the message: ENTER COLUMN POSITION TO BE DELETED: " ".

Now you'll type in a number to indicate which column you wish to delete.

Step 5 **TYPE** the number for the column to be deleted. For this exercise, type **1**.

TOUCH the ACCPT key.

Result The program automatically locates and deletes the column.

When the column has been deleted, the Command Line displays the message: COLUMN DELETION COMPLETE.

Step 6 **TOUCH** the STOP key.

HIGHLIGHT the document. Note that the CODE + 5s have been deleted from the first and second line of column headings.

Step 7 **TYPE** the necessary CODE + 5s at the beginning of the first and second lines in your statistical table.

STORE the document. If you want to save both versions of the document, store this document under a different title.

To run the program and move columns:

Step 1 **RECALL** the document containing the columns to the screen. (For practice you can recall the exercise document you just typed or you can copy COLUMN TEST DOC from the Generic Program disc onto your working disc and run the program on it.)

Step 2 **TOUCH** the PROGRAM key.

TYPE **#COLUMNS**

TOUCH the ACCPT key.

Result The Command Line displays the message: PRESS FUNCTION KEY: DEL, COPY (INSERT), MOVE, RPLCE.

Step 3 **TOUCH** the MOVE key.

Result The Command Line displays the message: REARRANGE COLUMNS?

TOUCH the ACCPT key to acknowledge you want to rearrange columns.

Result The Command Line displays the message: DISPLAY OFF?

You can indicate your preference at this point. For this exercise keep the display on the screen by answering "no."

Step 4 **TOUCH** the STOP key.

Result The 860 counts the columns and the Command Line displays the message: ENTER NEW COLUMN SEQUENCE:

Now you'll type the present column positions in the order they are to appear after they have been moved. For example, if you have a five column document, and you want to move column five before column one, you would type the following: **5** space **1** space **2** space **3** space **4** ACCPT.

Step 5 **TYPE** the column order. Be sure to type a space after each number, **except** the last one. For this exercise, type **2 3 1**

TOUCH the ACCPT key.

Result The program automatically rearranges the columns in the order you requested.

When the program is finished, the Command Line displays the message: COLUMN MOVE COMPLETE.

Step 6 **TOUCH** the STOP key.

HIGHLIGHT the document. Note that the CODE + 5s on the first and second lines have moved with Column 1 to its new position.

Step 7 **MOVE** the CODE + 5s back to their correct positions at the beginning of the first and second lines of the statistical table.

STORE the document. If you want to save both versions of the document, store this document under a different title.

Error Messages

CODE + 6 MUST PRECEDE AND FOLLOW COLUMNS . . .

MAXIMUM COLUMN POSITION . . .

DOCUMENT ASSEMBLY

PROGRAM NAME: #ASSEMBLE

Test Documents: BLOCK DOC, CUSTOM DOC, VAR DOC, WILL 1, WILL 2.

Purpose of the Program

This program will allow you to assemble prerecorded pieces of information into complete documents. The pieces of information are referred to as "blocks of information" and can be one paragraph or several paragraphs in length. In addition, variables (such as names and addresses for a letter) can be inserted as the document is assembled. There are two types of assembly:

(1) Attended, where the system asks you for each block of information and brings it to the screen so you can fill in the variables.

(2) Unattended, where you type the names of the blocks of information and any variables in a separate document, and then let the system assemble the document without asking you for assistance.

Limitations of the Program

All the blocks of information to be assembled at one time must be in the same block document. There is no limit to the number of blocks that may be in one document.

Each block must be typed on a separate page, and cannot be more than 150 lines long.

Any required page end codes needed in your final document will have to be put in after the document assembly has been completed.

Document Set-up

Before you can use the program, you will need to set up two documents. A **block** document, which will contain all of the blocks of information, and a **custom** document, which will receive the blocks of information as they are assembled. If you are going to use the program for unattended assembly, you will need to set up a third document -the **variable** document. Use the following instructions to create each document.

The Block Document

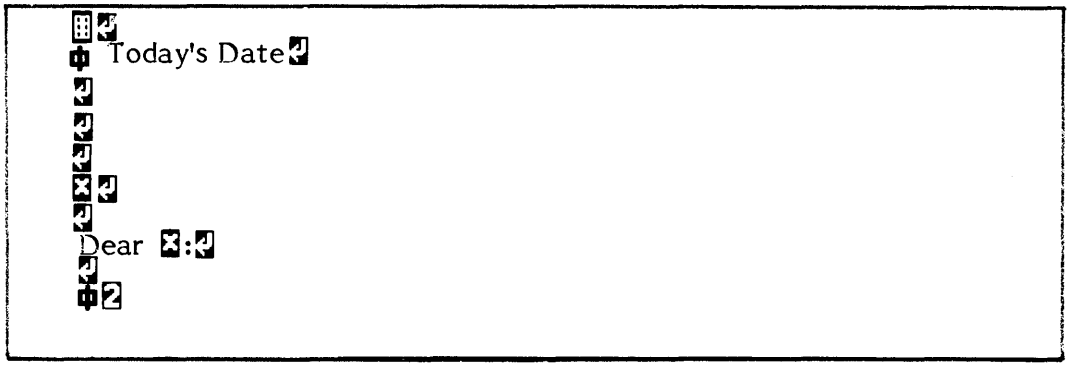
The block document contains the blocks of standard information.

- Each block of information must be on a separate page. You'll use the page number to access the information when the program is run.
- Each block of information must have a CODE + 6 (null code) at the beginning and at the end.
- Each page in the block document must begin with a format block, followed by a return. If the block of information requires a specific Format Block, then it must be

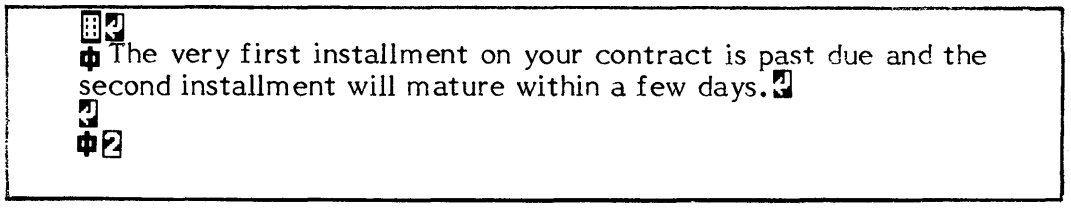
recorded after the CODE + 6 (null code) so that it is part of that block of information. (See the following illustrations.)

- The blocks of information should be typed in a consistent manner. For instance, use either one carrier return at the beginning and one at the end, or no carrier returns at the beginning and two at the end.
- If variable information is to be inserted in the blocks of information, type a CODE + 7 (switch code) at each variable location. Type all necessary punctuation and spacing in the block of information.
- If you will be assembling several letters or documents at the same time, you can assemble them all under one custom document title, separating the letters or documents with required Page End codes. To do this you will need to create an information block that has only a CODE + 7 in it. When you run the program, you will call up this block at the end of each letter or document and insert a CODE + 2 (required page end code). This can only be done when you run the program attended.

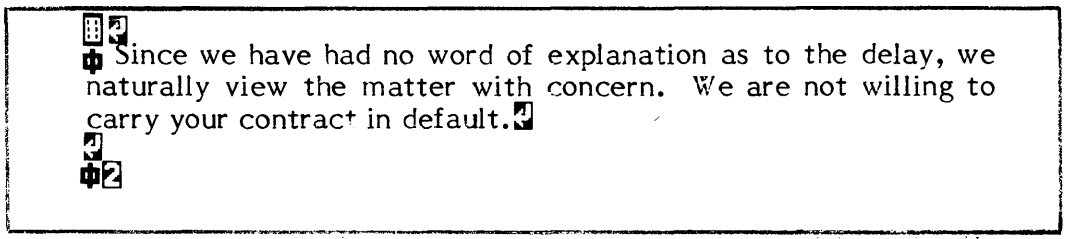
If you wish to practice creating a block document, continue with the following exercise. If you do not want to practice creating this document, but would like to practice running the Document Assembly program, proceed to the section titled **Using the Program.**



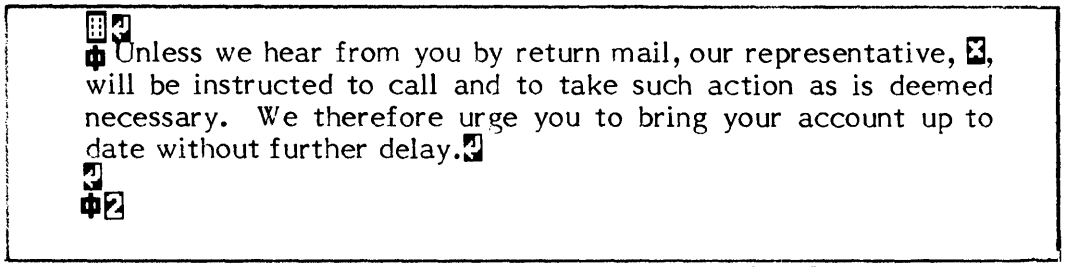
Block Document, Page 1 GP-6



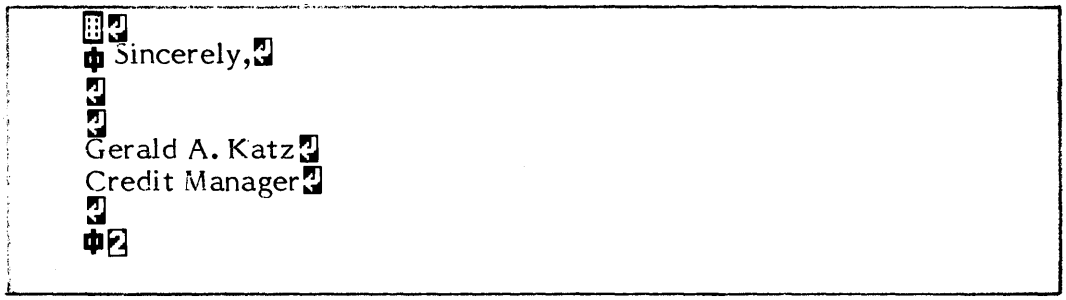
Block Document, Page 2 GP-7



Block Document, Page 3 GP-8



Block Document, Page 4 GP-9



block Document, Page 5 GP-10

To create the block document:

Step 1 **TITLE** a document for your blocks of information and bring it to the screen.

You do not need to set a special format, since the custom document will contain the format for the entire "assembled" document.

Step 2 **TYPE** a carrier return after the format block, then type the first information block, using a CODE + 6 (null code) to mark the beginning and end of the information block.

Be sure to type a CODE + 7 (switch code) wherever variable information is to be inserted.

TYPE a CODE + 2 (page end code) after the second CODE + 6 (null code).

Step 3 **TYPE** the remaining information blocks. Make sure that each one is typed on a separate page of your block document and that the last information block ends with a required page end code.

Step 4 **STORE** the block document.

The Custom Document

This is the document that will receive your blocks of information when they are assembled.

- Begin with the format settings that you want your custom document to have (margins, tabs, line spacing, etc.)
- After the format block, type a return and a Code + 5. The Code + 5 marks the point where the standard information will be inserted.

If you wish to practice creating a custom document, continue with the following exercise. If you do not want to practice creating this document, but would like to practice running the Document Assembly program, proceed to the section titled **Using the Program.**

Custom Document GP-11

To create the custom document:

Step 1 **TITLE** a document and bring it to the screen.

SET the format you want for the final assembled document. For practice use:

- Margins at **22** and **78**
- Justify **on**

TOUCH the ACCPT key to record the Format Block.

Step 2 **TOUCH** the RETURN key.

HOLD down CODE, touch the 5 key. The CODE + 5 tells the program where you want the blocks of information inserted.

Step 3 **STORE** the document.

The Variable Document

You will only need to create the variable document if you are going to use the program for unattended assembly.

The variable document contains the title of the custom document, the Block ID for the information to be assembled, and any variables to be inserted in the document. If you are assembling more than one custom document, you must repeat this information for each document. You will also have to create separate custom documents (with different titles) on your index for each document you wish to assemble.

The variable document should follow this format:

1 carrier return
Custom Document Title
1st Block ID #
Variables (if any in 1st block)
2nd Block ID #
Variables (if any in 2nd block)
3rd Block ID #
Variables (if any in 3rd block)
etc.
00 (to indicate no more blocks)
1 carrier return

- Custom Document Title: The custom document title must be surrounded (before and after) by a CODE + 6 (null code), and must end with a Required Return.

- Block ID Number: The block ID is the page number where the information block is typed in the block document. Each block ID number must be followed by a Required Return. After the last block ID number (or variables, if any), enter two zeros (00) to indicate that no more standard blocks are desired.

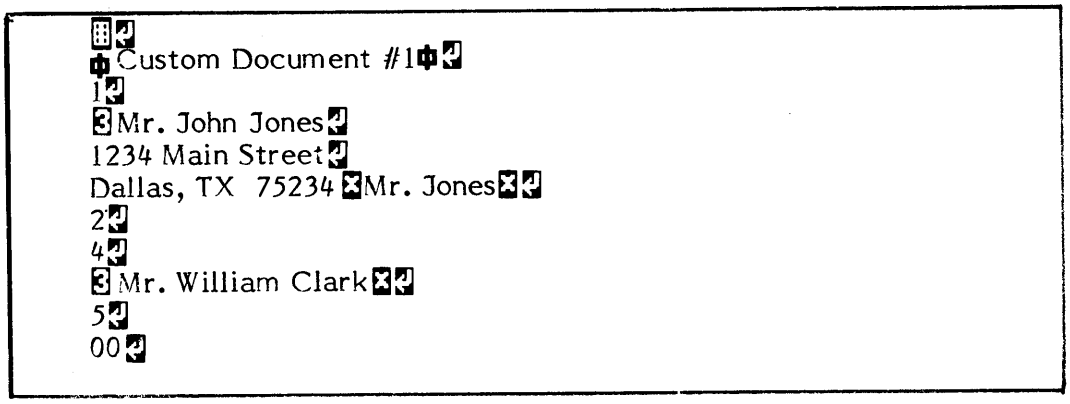
- Variables: Each variable set must begin with a CODE + 3 (stop code). A set is all the variables to be inserted in one block of information. Each variable must end with a CODE + 7 (switch code). There should not be any extra characters (including carrier returns) separating the variables of one set.

- **00:** Indicates that there are no more blocks of information to be assembled. The "00" must have a return after it.

- To assemble more than one custom document using unattended assembly, type your second custom document title (surrounded by CODE + 6s) on the line after you type the "00" and carrier return. Type the Block ID #s, include the necessary variable information and continue with the established procedure.

- There must not be any blank lines in the variables document. The variables document must fit on one page (maximum 150 lines).

If you wish to practice creating a variable document, continue with the following exercise. If you do not want to practice creating this document but would like to practice running the Document Assembly program, proceed to the section titled **Using the Program.**



Variable Document GP-12

To create the variable document:

Step 1 **TITLE** a document for your variables and bring it to the screen.

The format in the variable document will not be used for the assembled document, so you do not need to set a special format here.

Step 2	**TYPE**	a carrier return, then the custom document title, using a Null Code (Code + 6) at the beginning and the end of the title.
	TOUCH	the RETURN key.
Step 3	**TYPE**	the number **1** for the first block ID number.
	TOUCH	the RETURN key.
Step 4	**TYPE**	a Code + 3 and **Mr. John Jones** for the first line of your variable information.
	TOUCH	the RETURN key.
	TYPE	**1234 Main Street** for the second line of your variable information.
	TOUCH	the RETURN key.
	TYPE	**Dallas, TX 75234** stopping at the end of the zip code.
Step 5	**TYPE**	a Code + 7 and **Mr. Jones** for the next variable.
	TYPE	a Code + 7.
	TOUCH	the RETURN key.
Step 6	**TYPE**	the number **2** for your next block ID number.
	TOUCH	the RETURN key.
Step 7	**TYPE**	The number **4** for your next desired block of information.
	TOUCH	the RETURN key.
	TYPE	a Code + 3 and **Mr. William Clark** for the variable information.
	TYPE	a Code + 7.
	TOUCH	the RETURN key.
Step 8	**TYPE**	the number **5** for the last block ID number.
	TOUCH	the RETURN key.
Step 9	**TYPE**	**00** and a carrier return to indicate no more blocks of information are desired
	STORE	the document.

Using the Program

After you've typed the documents, you're ready to run the #ASSEMBLE program. The program instructions have been divided into two different sections, attended and unattended. If you wish to use attended document assembly, begin with the instructions below.

If you want to make minor changes/additions to one or more of your blocks of information or add an extra paragraph, run the program to assemble the document and then make the editing changes.

If you wish to use unattended document assembly, begin with the instructions on page 10.

To run the program attended:

The program will prompt you for the number of each block of information that you want assembled. The page number on which each block of information is recorded is the number you will use to identify it.

If you are assembling more than one letter or document at the same time, be sure to call up the information block containing only a CODE + 7 at the end of each letter and type a CODE + 2 in response to the variable prompt. This will start your next letter or document on a new page.

Step 1	**RECALL**	the custom document to the screen. For practice you can recall the exercises you just typed or you can copy the documents: BLOCK DOC (block document) and CUSTOM DOC (custom document) from the Generic Program disc onto your working disc and run the program with them.
	TOUCH	the PROGRAM key.
	TYPE	**#ASSEMBLE**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ENTER TITLE OF BLOCK DOCUMENT - RETURN.
Step 2	**TYPE**	the title of your block document.
	TOUCH	the RETURN key.
	Result	The Command Line displays the message: ATTENDED DOCUMENT ASSEMBLY? ACCPT OR STOP.
Step 3	**TOUCH**	the ACCPT key.

Note: If you accidentally touch the STOP key, the Command Line displays the message: UNATTENDED DOCUMENT ASSEMBLY? ACCPT OR STOP. Just touch the STOP key again to answer no to unattended assembly. The Command Line will display the message: STOP - RUN AGAIN - CHOOSE ONE OF THE OPTIONS. Touch the STOP key and run the program again.

Result — The Command Line displays the message: AUTO REFORM/PAGINATE AFTER ASSEMBLY? ACCPT OR STOP.

TOUCH — The ACCPT key to have the custom document automatically reformatted and paginated,

OR

TOUCH — the STOP key if you do not want to have the custom document automatically reformatted and paginated.

Result — The Command Line displays the message: ENTER BLOCK ID NUMBER (00 for no more) - RETURN.

Step 4 **TYPE** — the page number of the block of information you want.

TOUCH — the RETURN key.

Result — The appropriate information block is copied into the custom document.

If there are any variables in the information block, the Command Line displays the message: TYPE VARIABLE INFORMATION - ACCPT. If this message appears,

TYPE — the variable information. If the variable information has more than one line, simply type a return at the end of each line. If no variable information is required, then

TOUCH — the ACCPT key.

You will be prompted for each variable in the information block. When the last variable has been typed, you will again be prompted for the next BLOCK ID.

Step 5 **TYPE** — the page number of the next block of information.

TOUCH — the RETURN key.

Step 6 **CONTINUE** entering the appropriate Block ID's and variable information as necessary.

When there are no more blocks of information to be assembled,

Step 7 **TYPE** **00**

TOUCH the RETURN key.

Result If you requested automatic reformat/paginate, a message will inform you that it is in progress. When the document has been assembled, the Command Line will display the message: ASSEMBLY COMPLETE - TOUCH STOP.

Step 8 **TOUCH** the STOP key.

STORE the document.

Error Messages

If a mistake is made, one of the following messages may appear in the Command Line **or** as text in your document.

INVALID ID NUMBER - ENTER AGAIN

Action: Check to be sure that the Shift Lock is up, then type the Block ID again. The program will then continue.

STOP - CODE + 5 MISSING - RUN AGAIN

Action: Touch STOP. Then check to be sure that your custom document has a Code + 5 in it.

"# you typed" IS INVALID - ENTER AGAIN
flashes momentarily, then the Command Line displays the message: ENTER BLOCK ID NUMBER (00 for no more) - RETURN " "

Action: Type the Block ID again, making sure the number corresponds to a page number in the standard document. The program will then continue.

To run the program unattended:

Step 1	**RECALL**	the variable document to the screen. For practice you can recall the exercises you just typed or you can copy the documents: BLOCK DOC (block document), VAR DOC (variable document), and WILL 1 & WILL 2 (custom documents) from the Generic Program disc onto your working disc and run the program on them.
	TOUCH	the PROGRAM key.
	TYPE	**#ASSEMBLE**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ENTER TITLE OF BLOCK DOCUMENT - RETURN.
Step 2	**TYPE**	the title of your block document.
	TOUCH	the RETURN key.
	Result	The Command Line displays the message: ATTENDED DOCUMENT ASSEMBLY? ACCPT OR STOP.
Step 3	**TOUCH**	the STOP key.
	Result	The Command Line displays the message: UNATTENDED DOCUMENT ASSEMBLY? ACCPT OR STOP.
Step 4	**TOUCH**	the ACCPT key.
	Result	The Command Line displays the message: AUTO REFORM/PAGINATE AFTER ASSEMBLY? ACCPT OR STOP.
	TOUCH	the ACCPT key to have the custom documents automatically reformatted and paginated.
		Note: the entire custom document will be reformatted/paginated if you accept.
		OR
	TOUCH	the STOP key if you do not want to have the custom documents automatically reformatted and paginated.

Result — The Command Line displays the message: UNATTENDED DOCUMENT ASSEMBLY IN PROCESS and then the message UNATTENDED ASSEMBLY OF "document title" as the program assembles each custom document.

When the program is finished, the Command Line displays the message: ASSEMBLY COMPLETE -TOUCH STOP.

Step 5 **TOUCH** the STOP key.

Result — The variable document and the custom documents have been stored by the program and the block document is on the screen.

Step 6 **STORE** the block document.

Error Messages

During unattended document assembly, any errors in the variable document will prevent the program from assembling the document(s) correctly. The program checks certain information, and if there is a problem, one of the following messages will appear in your document so you can fix the problem and run the program again.

*** ATTENTION OPERATOR! ***
VARIABLE DOCUMENT MUST BEGIN WITH FORMAT BLOCK AND RETURN

Action: Check to make sure you typed a carrier return following the format block at the beginning of your variable document.

*** ATTENTION OPERATOR! ***
CHECK VARIABLE DOCUMENT. TITLE OF CUSTOM DOCUMENT
IS MISSING, MISSPELLED, OR NOT SURROUNDED BY CODE + 6's

Action: Check to make sure the correct titles are in the variable document. Also check to make sure the titles are surrounded with Code + 6's.

*** ATTENTION OPERATOR! ***
CUSTOM DOCUMENT NOT FOUND ON DISC

Action: Check to make sure the titles of your custom documents are spelled correctly.

*** ATTENTION OPERATOR! ***
THERE IS AN INVALID BLOCK ID IN THIS ASSEMBLY.
IT IS EITHER NOT NUMERIC OR NOT IN THE BLOCK DOCUMENT.

Action: Check to make sure you entered the correct Block ID #s (page numbers) in the variable document. Also make sure that 00 is present to indicate no more blocks are to be assembled.

*** ATTENTION OPERATOR! ***
THE CODE + 5 IS MISSING FROM THE CUSTOM DOCUMENT

Action: Check to make sure you have a Code + 5 in the custom document.

*** ATTENTION OPERATOR! ***
CHECK VARIABLE DOCUMENT FOR CORRECT NUMBER OF VARIABLES.
ALSO BE SURE ALL NECESSARY CODES ARE PRESENT.

Action: Check to make sure you entered the correct number of variables.

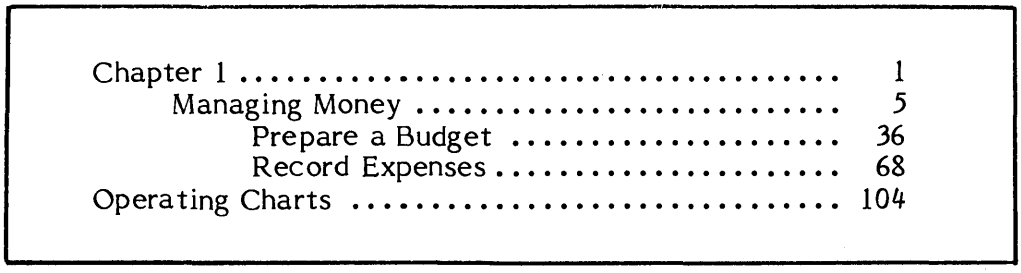
DOT LEADERS

PROGRAM NAME: #DOTS

Test Document: DOTS DOC, DOTS DOC 2

Purpose of the Program

The Dot Leaders program will automatically insert dot leaders into a document, such as the table of contents shown in the example below. When using this program you need only type the text and the page numbers. The program will insert the dot leaders for you.



This program allows up to five tab indent levels in the left column. It will work with varied line spacing and on multiple page documents. The column to the right of the leadering can contain both text and numbers. You can also use the program to leader up to a certain position on the line without affecting any additional columns beyond the selected position.

In addition to dots, you can select one of several alternate symbols to be used for leadering.

- Product dot (·)
- Comma
- Plus sign (+)
- Equal sign (=)
- Hyphen (-)
- Parentheses ( )

Limitations of the Program

The maximum number of leaders to be inserted on any given line should not exceed 316.

The document can only contain one format block per page.

Document Set-up

This program is designed to allow you to insert leadering into your documents with a minimum of difficulty. You can leader to the same position on each line or allow for entries of varying widths in the right column. Before typing the leadering document, you will need to decide on a unique character (such as a null code or a stop code) to precede the page number. This code should not appear anywhere else in the document.

State Capitals and Flowers

Alabama ==========	Montgomery	Camellia
Arizona ==========	Phoenix	Saguaro
Delaware ==========	Dover	Peach Blossom
Indiana ==========	Indianapolis	Peony
Montana ==========	Helena	Bitterroot
Oregon ==========	Salem	Oregon Grape
Texas ==========	Austin	Bluebonnet

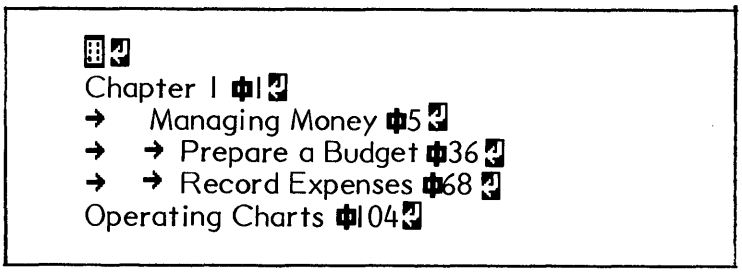
If you want the leadering to end at different positions to allow for varying width material in the right column, the program will ask you to identify the character that follows the right column. If the right column is at the end of the line, the character would be CODE + Return. If you have material beyond the right column, you should use a second unique code (such as a CODE + 7) after the column entry.

The program will also ask you for the number of spaces you want between the last leader symbol and the page number.

Summary of Rules for Document Set-up

- Each page of the document must begin with a Format Block.
- After typing the text to the left of the leadering, type **one** space, then type a unique code (such as a CODE + 6), the page number to be placed at the right, and a carrier return. The unique code selected to separate the left column material from the page number should not be used anywhere else in the document.
- If the column you are leadering to contains numbers and/or text of varying width and you have additional text and/or columns to the right of this column, you must type a second unique code (such as a CODE + 7) immediately following the column entry.
- The total number of characters in a line should not exceed the space between the left and right margins.
- If you have text in the document that you want the program to ignore, type the text without putting the unique code in it.

If you want to practice creating a document for dot leaders, continue with the following exercise. If you do not want to practice creating a document but would like to practice running the Dot Leaders program, proceed to the section titled **Using the Program.**



In this exercise you'll create the document shown above. When you run the #DOTS program on it, the dot leaders will stop at the same position on each line (as shown on page 4-1).

Step 1 **TITLE** a new document and bring it to the screen.

SET the following Format:

- Margins at **20** and **70**
- Tabs at **25** and **30.**

TOUCH ACCPT and return.

In this exercise you will use the CODE + 6 (null code) as the unique code to precede your page number.

Step 2 **TYPE** the words **Chapter 1,** and **one** space.

HOLD down CODE, touch the **6** key.

TYPE the number 1 (for the page number)

TOUCH the RETURN key.

Step 3 **CONTINUE** typing the remainder of the document as follows.

- Use a tab to indent the text (upper or lower)
- Type the text, then **one** space.
- Type CODE + 6
- Type the page number
- Return

Step 4 **STORE** the document.

Using the Program

Your document should be stored and brought to the screen again before running the Dot Leaders program. The program will ask you to:

- Select your leadering symbol

- Enter indent level tab settings for your completed document (they must be the same as the tab settings set in the document's format block).
- Enter the right column position. The program will right flush your page numbers and/or text at this position.
- Select the number of spaces to precede the page number; i.e., the number of spaces between the last leadering symbol on the line and the page number (or right column text material).

  When you choose to have the leadering symbols stop at the same position on each line, you must leave enough space to allow for the longest page number or text in the right column.

To run the program:

Step 1	**RECALL**	the document to the screen. (For practice you can recall the exercise you just typed or you can copy the document, DOTS DOC from the Generic Program disc onto your working disc and run the program on it.)
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#DOTS**
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER LEADERING SYMBOL OR "?" FOR HELP:

If you know which symbol you want to use for your leadering, you can type that symbol and touch ACCPT. If you want to see which leadering symbols are available, you can type a question mark (?) and touch ACCPT. For this exercise, you will use the question mark (?).

Step 3	**TYPE**	a question mark.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER ONE OF THESE: . , + = - (

Select the symbol you want to use for leadering. For this exercise, select the period (.)

Step 4	**TYPE**	a period.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: DO YOU WANT "PRODUCT" DOTS?

Product dots are periods that appear ¼ line (CODE + Index) above your line of typing. For this exercise, you will answer "no" by touching the STOP key.

Step 5 **TOUCH** the STOP key.

Result ARE ALL LEADERS TO STOP AT THE SAME POSITION?

In the exercise document the dot leaders will stop at the same position on each line, so you'll answer "yes" here.

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER RIGHT COLUMN POSITION:

For this exercise you will position the right column at the same setting as the right margin.

Step 6 **TYPE** the number **70.**

TOUCH the ACCPT key.

Result the Command Line displays the message: ENTER # OF SPACES (IF ANY) TO PRECEDE RIGHT COLUMN:

This refers to the number of spaces you want to appear between the last leadering symbol on the line and the page numbers (or right column text). To allow for the longest page number in this exercise, use three spaces.

Step 7 **TYPE** the number "3"

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER INDENT LEVEL TAB SETTINGS USED:

The indent level tab settings are the tabs used to indent material at the left margin. Separate the tab entries by spaces. The indent level tab settings must be exactly the same as those in the original document. You can have up to five tab settings.

Step 8 **TYPE** the number **25,** space once, then type the number **30.**

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER SYMBOL WHICH PRECEDES RIGHT COLUMN:

Now you will type in the unique character you selected when typing your original document. In the practice exercise, you used a null code.

Step 9 **TYPE** a CODE + 6 (null code).

TOUCH the ACCPT key.

Result The Command Line displays the message: SEARCHING FOR (SPACE) + (◘) -- OKAY?

This message gives you an opportunity to check that you entered the correct character. If you typed the wrong character, you can touch STOP and the Command Line will return to the message: ENTER SYMBOL WHICH PRECEDES RIGHT COLUMN.

TOUCH the ACCPT key.

Result The Command Line displays the message: DISPLAY OFF?

If you touch ACCPT, the document will be removed from the screen while the program runs.

Step 10 **TOUCH** the ACCPT key.

Result The Command Line alternately displays the messages: LEADERING and LEADERING -- PLEASE WAIT while the program inserts the dot leaders into your document.

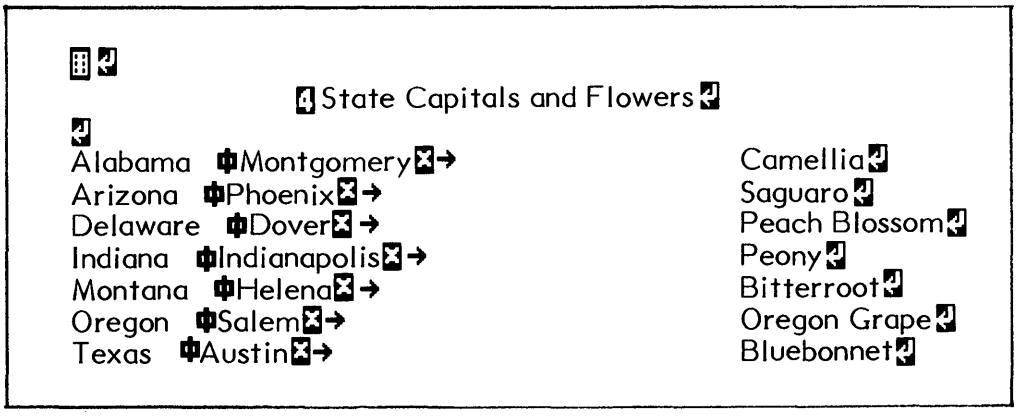
When the leader symbols have been inserted, the Command Line will display the message: RECOVERING DISC SPACE -- PLEASE WAIT.

When the program has finished, the Command Line displays the message: LEADERING PROGRAM COMPLETE.

Step 11 **TOUCH** the STOP key.

STORE the document over the original or give it a new title if you wish to keep both the original and the revision.

The next exercise will give you practice in using leadering symbols when you have entries of varying width in the right column and additional material beyond the right column. To see how this document looks after leadering, refer to page 4-2.



Step 1

TITLE a new document and bring it to the screen.

SET the following Format:

- Margins at **23** and **78**
- Tab at **65.**

TOUCH ACCPT and return.

Step 2

TYPE and center the heading.

TOUCH the return key twice.

This document has entries of varying width in the right column and the leadering symbols should go up to that entry (without leaving white space), so you'll use CODE + 6 (null code) as the unique code to precede the column entry and CODE + 7 (switch code) as the unique code that follows the entry.

Step 3

TYPE the word **Alabama,** and **one** space

HOLD down CODE, touch the **6** key

TYPE the word **Montgomery**

HOLD down CODE, touch the **7** key

TOUCH the tab key once, type the word **Camellia,** then return.

Step 4 **CONTINUE** typing the remainder of the document as follows:

- Type the text, then **one** space
- Type CODE + 6
- Type the right column entry
- Type CODE + 7
- Touch tab, then type the additional column entry
- Return

Step 5 **STORE** the document.

To run the program:

Step 1 **RECALL** the document to the screen. (For practice you can recall the exercise you just typed or you can copy the document, DOTS DOC 2 from the Generic Program disc onto your working disc and run the program on it.)

Step 2 **TOUCH** the PROGRAM key.

TYPE **#DOTS**

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER LEADERING SYMBOL OR "?" FOR HELP:

Step 3 **TYPE** a question mark to look at the available leadering symbols.

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER ONE OF THESE: . , + = - (

Use the equal sign (=) as the leadering symbol for this exercise.

Step 4 **TYPE** an equal sign (=)

TOUCH the ACCPT key.

Result The Command Line displays the message: ARE ALL LEADERS TO STOP AT THE SAME POSITION?

The leaders in this document will not stop at the same position, so your answer will be be "no".

Step 5 **TOUCH** the STOP key.

Result The Command Line displays the message: ENTER RIGHT COLUMN POSITION:

Type in the position of the right column entries.

Step 6 **TYPE** the number **55.**

TOUCH the ACCPT key.

Result the Command Line displays the message: ENTER # OF SPACES (IF ANY) TO PRECEDE RIGHT COLUMN:

Leave one space between the leadering symbols and the right column text.

Step 7 **TYPE** the number "**1**"

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER INDENT LEVEL TAB SETTINGS USED:

If your document is not using indent level tabs, you can touch accept without entering any numbers.

Step 8 **TOUCH** the ACCPT key.

Result The Command Line displays the message: ENTER SYMBOL WHICH PRECEDES RIGHT COLUMN:

Now you will type the unique character you selected when typing your original document.

Step 9 **TYPE** a CODE + 6 (null code).

TOUCH the ACCPT key.

Result The Command Line displays the message: SEARCHING FOR (SPACE) + (◘) -- OKAY?

This message gives you an opportunity to double check the character you entered.

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER SYMBOL WHICH FOLLOWS RIGHT COLUMN:

You used a switch code as the second unique code in your document.

Step 10 **TYPE** a CODE + 7 (switch code).

TOUCH the ACCPT key.

Result The Command Line displays the message: ALSO SEARCHING FOR (⊠) -- OKAY?

TOUCH the ACCPT key.

Result The Command Line displays the message: DISPLAY OFF?

Step 11 **TOUCH** the STOP key.

Result The Command Line alternately displays the messages: LEADERING and LEADERING -- PLEASE WAIT while the program inserts the leaders into your document.

When the leader symbols have been inserted, the Command Line will display the message: RECOVERING DISC SPACE -- PLEASE WAIT.

When the program has finished, the Command Line displays the message: LEADERING PROGRAM COMPLETE.

Step 12 **TOUCH** the STOP key.

STORE the document over the original or give it a new title if you wish to keep both the original and the revision.

Error Messages

MAX NUMBER OF TAB LEVELS = 5 . . . PLEASE REFER TO PROGRAM INSTRUCTIONS

Action: Check to make sure you have only five tab indent levels in your document.

DUAL COLUMN TEXT

PROGRAM NAME: #DUAL TEXT

Test Documents: DUAL COLUMN DOC, FORMAT BLOCK

Purpose of the Program

This program will automatically reformat text into dual columns. Either one or both columns may be justified.

Our common type faces are either imitations of early handwritten letters or represent a modification of early type faces. These type faces, in turn, were modeled after the lettering in manuscript books.

The standard roman lower case letters and capitals assumed the form that they have today in about 1470. This form was done by Nicholas Jenson.

While Jenson, who was a Frenchman, learned the art of printing in Germany, he did his first printing job in Venice, Italy. The letters were scribed by Venetian monks.

Dual Columns Example GP-15

Limitations of the Program

The document may be up to 72 lines per page. Longer page lengths are not recommended.

When the dual column program has been used, a document cannot be edited and the program used again. Therefore, you should store the dual column document under a new title and keep the original for future editing changes.

Documents created by using this program cannot be printed using the Automatic Paper Feeder accessory.

Document Set-up

Before the dual text program can be used, the document must meet the following requirements.

- Type the document with the Auto Carrier Return feature turned on. After the document has been typed, do the following:
  - Check that there is a format block at the beginning of each page.
  - Each format block must be followed by text. If any format block is followed by a Carrier Return, delete the return.

- The last page of the document must have a required page end code. If there are any other required page end codes in your document, a new column will be started at that point.

- Before running the program, return to the first page of the document and do the following:

  - In the first format block of the document, change the margins, tabs, etc., to the format for the left column.

  - Turn on the following reformat features:

    - REFORMAT
    - REPLACE MARGINS
    - REPLACE TABS
    - PAGINATE

    etc., as required

  - Touch ACCPT to reformat the document to the left column format. Make any hyphenation decisions or page end decisions as usual.

    Note: if your document is less than one page long after reformatting, you will have to change the format setting for PAPER SIZE to one-half the number of lines in your document and reformat again before running the program.

- Create and store a document containing only a format block. This format block should contain the settings for the right column.

If you want to practice creating dual columns, continue with the following exercise. If you do not want to practice creating the dual column documents but would like to practice running the Dual Columns program, proceed to the section titled **Using the Program.**

Step 1

RECALL the document TEXT DOC to the screen

TOUCH FORMAT and make the following changes:

- margins at **15** and **50**
- tab at **20** (delete other tabs)
- linespacing at **1**

REFORMAT using REPLACE MARGINS, REPLACE TABS, REPLACE LINESPACING, and PAGINATE. Also check to be sure there is a required page end code on the last page of your document.

Step 2

STORE the document under a new title.

Step 3	**TITLE**	another document (for the format block) and bring it to the screen.
	SET	the following format: • margins at **55** and **90** (for the right column) • tab at **60** • justify **on** • top margin at **10** • bottom margin at **15**
	TOUCH	the ACCPT key to record the format block.
Step 4	**STORE**	the document.

Using the Program

When your documents have been typed and stored, you are ready to run the dual column program.

Before the program begins reformatting the document into dual columns, it will ask you for the name of the format block document. Be sure you type the title correctly.

To run the program:

Step 1	**RECALL**	the text document to the screen. (For practice you can recall the exercise documents you just typed or you can copy the documents: DUAL COLUMN DOC and FORMAT BLOCK from the Generic Program disc onto your working disc and run the program with them.)
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#DUAL TEXT**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ENTER FORMAT BLOCK DOCUMENT TITLE - RETURN.

Step 3 **TYPE** the title of the document containing the format block for the right column.

TOUCH the RETURN key.

Note: If you type a title that is not on the disc, the Command Line displays the message: CANNOT FIND "Document Title" - TRY AGAIN.

Then the Command Line again displays the message: ENTER FORMAT BLOCK DOCUMENT TITLE - RETURN. If you receive these messages, check your document title carefully and type it exactly as it appears on the Index. The program will then continue.

Result The document is removed from the screen and the Command Line displays the message: DOCUMENT BEING FORMATTED - PLEASE WAIT while the program formats your document into dual columns.

When the program is finished, the Command Line displays the message: DOCUMENT FORMATTING COMPLETE - TOUCH STOP.

Step 4 **TOUCH** the STOP key.

Step 5 **TOUCH** the STORE key, and save this document under a new title.

If you wish to make revisions to this document, recall the original document and revise it. Then run the program again to format the document into dual columns.

FORMS DOCUMENTS

PROGRAM NAME: #FORMS

Test Document: FORMS DOC

Purpose of the Program

This program, when used with a blank form document, will assist you in filling out the form. The program will stop at each "fill-in" position and prompt you to type in the appropriate information.

SOLD TO: Mr. Edward Green, Purchasing Agent
ABC Corporation
First International Building
1234 Main Street
Dallas, TX 75201

ITEM #	QUANTITY	UNIT PRICE
00142	25	$ 23.89
02890	100	$ 11.50
82990	50	$ 74.99

Form Document Example GP-16

Limitations of the Program

The form document is limited to one page. If you have a two page form, make each page a separate document.

Prompts in the form document must be limited to 20 characters.

Document Set-up

To create the form "fill-in" document:

- In the format block, set tabs where the information is to be typed on the form. If your document format block does not contain any special tabs, set a Special Tab outside the left margin (at 2, for example), to prevent the document from being reformatted. You may record as many different formats as you need in the document.

- Use tabs, carrier returns, indexes and Code + indexes to get to the point where the information will be typed. Then type the appropriate prompts by using one of the two following methods:

- If the information will be entered on one line or less, type a Code + 7, the prompt, and a Code + 7 immediately behind the prompt. (See the "NAME" prompt on the next page.)

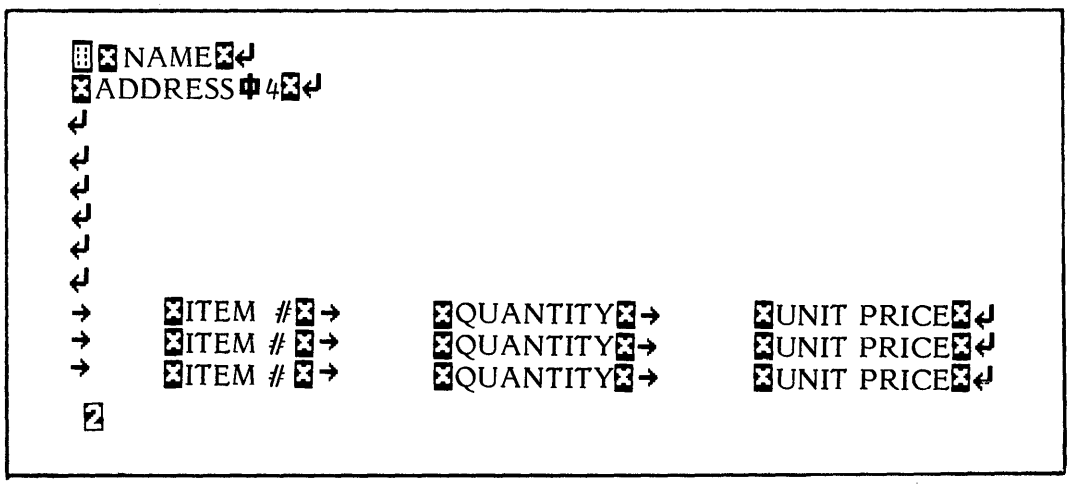
- If the information to be filled in takes more than one line, (such as the "ADDRESS" prompt below), type a Code + 7, the prompt, a Code + 6, then the maximum number of lines that need to be filled in, then a Code + 7. You will then have to type exactly the same number of carrier returns that you indicated as the maximum number of lines that need to be filled in.

Note: On a multi-line prompt, no other prompt positions can be added on the same line. If this is necessary, either treat all prompts on these lines as single line prompts or use carrier returns or CODE + indexes to get to the desired prompt position.

As you run the program, it will keep track of how many lines are left to type on a multi-line prompt.

- Type a Page End Code at the bottom of the form.

If you want to practice creating a document for forms "fill-in", continue with the following exercise. If you do not want to practice creating a document but would like to practice running the Forms Documents program, proceed to the section titled **Using the Program.**



Form Fill-in Exercise GP-17

To create the practice exercise:

Step 1 **TITLE** a new document and bring it to the screen.

SET the following Format:

- Margins at **17** and **88**
- Regular Tabs at **22, 39,** and **59**
- Special Tabs at **27*, 41*,** and **67***

TOUCH the ACCPT key to record the Format.

Step 2 **CREATE** the "NAME" prompt by using the following steps:

- Type a CODE + 7
- Type **NAME**
- Type a CODE + 7
- Carrier return once, to next fill-in position

Step 3 **CREATE** the "ADDRESS" prompt by using the following steps:

- Type a CODE + 7
- Type **ADDRESS**
- Type a Code + 6
- Type a 4 (4 represents the maximum number of lines that may need filling in for the address.
- Type a CODE + 7
- Type four carrier returns (to match the maximum number of lines required for the address)
- Carrier return three times and tab once to next fill-in position

Step 4 **CONTINUE** creating the remainder of the form fill-in document, using the example on the previous page as a guide.

END the document with a Page End Code.

Step 5 **STORE** the document.

Using the Program

Once the form fill-in document has been typed and stored, you are ready to use the forms program. The program will ask you for the title you want the completed form stored under and then proceed to locate each prompt, delete it, and ask you to fill in the appropriate information. When you fill in multi-line prompts, the program will tell you how many lines remain to be filled in.

To run the program:

Step 1 **RECALL** the form fill-in document to the screen. (For practice you can recall the exercise document you just typed or you can copy the document FORMS DOC from the Generic Program disc onto your working disc and run the program with it.)

Step 2 **TOUCH** the PROGRAM key.

TYPE **#FORMS**

TOUCH the ACCPT key.

Result — The Command Line briefly shows the software level, then displays the message: TYPE TITLE FOR COMPLETED FORMS DOCUMENT - RETURN

Step 3 **TYPE** the title for the document.

TOUCH the RETURN key.

* * * * * * * * * * *

If a document with the title you typed is already on the disc, the Command Line will display the message: ADD TO "Title"? ACCPT OR STOP

If you want your form added to the end of this document,

TOUCH the ACCPT key.

If you want your form stored under a different title,

TOUCH the STOP key. The Command Line displays the message: TYPE TITLE FOR COMPLETED FORMS DOCUMENT - RETURN

TYPE a different title for the document.

TOUCH the RETURN key.

* * * * * * * * * * *

Result — The program deletes all the prompts from the screen display of your form fill-in document, then displays the first prompt in the Command Line. If the first prompt in the document is a single line prompt, the message displayed is: TYPE "PROMPT" -RETURN

OR,

If the first prompt in the document is a multi-line prompt, the message displayed is: TYPE "PROMPT" -LINE "x" of "x" - RETURN. Skip Step 4 and continue with Step 5.

Step 4 **TYPE** the information to be filled in at this point and touch RETURN.

OR, if no information is required at this point,

TOUCH the RETURN key.

Result — The next prompt is brought to the Command Line. If the next prompt is a single line prompt, the Command Line displays the message: TYPE "PROMPT" - RETURN. Return to beginning of this step.

OR,

If the next prompt is a multi-line prompt, the Command Line displays the message: TYPE "PROMPT" - LINE "x" of "x" - RETURN. Continue with Step 5.

Step 5 **TYPE** the information to be filled in at this point.

TOUCH the RETURN key.

OR, if no information is required at this point,

TOUCH the RETURN key.

Result The Command Line prompts you to fill in the remaining lines of for the prompt.

Step 6 **CONTINUE** typing information in the proper locations of the form, using Steps 4 and 5 as a guide.

When all the prompts in the form have been filled in, the message DO YOU WANT ANOTHER FORM? ACCPT OR STOP appears in the Command Line.

If you want to fill in another form,

TOUCH the ACCPT key.

Result The program will recall the form document and start prompting you for the appropriate information.

If you do not want to fill in another form,

TOUCH the STOP key.

Result The program will store the completed form in the Index under the name you entered at the beginning of the program. The message "Document Title" STORED - TOUCH STOP appears in the Command Line.

Step 7 **TOUCH** the STOP key.

TOUCH the STORE key and clear the form fill-in document from the Active List by using the following steps:

- Touch STOP
- Touch DEL
- Touch ACCPT

The completed forms are now ready to be printed.

LINE NUMBERING

PROGRAM NAME: #LINE NUMBER

Test Document: LINE NUMBER DOC

Purpose of the Program

The purpose of this program is to enter line numbers into a document. You'll have the choice of beginning the line numbering over on each page, or numbering all the lines in the document without starting over on each page. You also have a choice of how often the line numbers print; e.g. print every other line, every fourth line, every tenth line, etc. and you can choose the number to start with.

```
     Before you start to use the Data
2  Dictionary for a new project, you should
4  establish conventions, such as ID codes
   and prefixes. Since there is one data
   base bankwide, your conventions must be
6  coordinated with all other Data
   Dictionary users. Your support
8  personnel can assist you in assigning the
   ID's and the prefixes.
10       When you need your IMS control
   blocks, your Data Dictionary support
12 personnel can generate them. If you
   wish to generate the control blocks
14 yourself, detailed information may be
   found in Section VI of the Data
16 Dictionary User's Guide. Similarly, your
   Data Dictionary support personnel will
18 assist you in moving your project's
   materials from test to production
20 dictionary.
         As of this writing, there are no
22 forms that you are required to use.
   However, there are some available for
24 your use. It is recommended that you
   use these forms to make coding of your
26 dictionary requests easier. They are
   available in the Forms Room on the 16th
28 floor at 40 West 57th Street. Some of
   these forms use a fixed format
30 transaction. Although we have only gone
   over keyword transactions, these fixed
32 format forms will provide you with a
   much easier method to code. The rules
34 for filling in the fixed format fields are
   the same as for their associated
36 keywords indicated in parentheses.
         Throughout this manual, we have
38 talked only about the functions ADD,
   CON, and REP. These are the functions
40 you need to use in order to create,
   relate, and report your data, programs,
```

Line Numbering Example GP-18

Limitations of the Program

Only lines that have at least one character or a carrier return are numbered. The program will not number lines containing only a Page End Code.

If the document contains Indexes or CODE + Indexes, they will not be counted in the line numbering. The program counts lines by checking carrier returns in the document. If there is a carrier return after the format block at the top of the page or extra carrier returns at the bottom of the page, the program will count them as lines and this will throw off the line count. Be sure to delete extra carrier returns before running the program.

If the line number count goes over 65,535 it will reset to zero and start the line number count again from that point.

When the line number program has been used, a document cannot be edited and the program used again. Therefore, you should store the line numbered document under a new title and keep the original for future editing changes.

Document Set-up

Before the line number program can be used, the document must meet the following requirements.

- The left margin of the document should be no less than 10.
- There must be a tab at the left margin position in every Format Block in the document.
- The last page of the document should not end with a Page End Code.
- The document must be in final form before running the program. No editing or reformatting may be done after line numbers have been inserted.

Using the Program

Listed below are two sets of instructions. One will number all lines in the document continuously and the other will start the numbering over on each page.

To run the program and number all lines continuously:

Step 1 **RECALL** the document requiring line numbering to the screen. (For practice you can copy the document LINE NUMBER DOC from the Generic Program disc onto your working disc and run the program on it.)

Step 2 **TOUCH** the PROGRAM key.

TYPE **#LINE NUMBER**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level and then displays the message: NUMBER EVERY ?? LINE? ENTER NUMBER - RETURN.

Now you'll tell the system in what increments you want the lines numbered. For example, if you want the line number to appear on every fifth line, enter "5".

Step 3 **ENTER** the appropriate number. (For the practice exercise, use **5.**)

TOUCH the RETURN key.

Result The Command Line displays the message: BEGIN WITH ?? NUMBER ? ENTER NUMBER - RETURN

Here you should indicate the number you want the line numbering to start with. For example, if you had typed 50 lines on a previous document and want to continue counting the lines in your current document, you would type in the number 51. If, however, you are numbering every fifth line, you would have to make an allowance and type in the number 55 here.

Step 4 **ENTER** the appropriate number. (For the practice exercise, use **5.**)

TOUCH the RETURN key.

Result The Command Line displays the message: NUMBER ALL LINES CONTINUOUSLY? ACCPT OR STOP

The program is asking if you want to number all the lines (the entire document) continuously, or if you want to start numbering over again on each page.

TOUCH the ACCPT key.

Result The document is removed from the screen and the Command Line displays the message: NUMBERING LINES CONTINUOUSLY EVERY "x" LINES or NUMBERING LINES CONTINUOUSLY EVERY LINE

When the program finishes numbering the lines, the Command Line displays the message: LINE NUMBERING COMPLETE - TOUCH STOP

Step 5 **TOUCH** the STOP key.

Step 6 **STORE** the document under a new title.

If you need to make revisions to this document later, make the revisions on the original version of the document (the one without line numbers). Then you can run the #LINE NUMBER program again.

To run the program and start the numbering over again on each page:

Step 1 **RECALL** the document requiring line numbering to the screen. (For practice you can copy the document LINE NUMBER DOC from the Generic Program disc onto your working disc and run the program on it.)

Step 2 **TOUCH** the PROGRAM key.

TYPE **#LINE NUMBER**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level and then displays the message: NUMBER EVERY ?? LINE? - ENTER NUMBER - RETURN.

Now you'll tell the system in what increments you want the lines numbered. For example, if you want the line number to appear on every fourth line, enter "4".

Step 3 **ENTER** the appropriate number.

TOUCH the RETURN key.

Result The Command Line displays the message: BEGIN WITH ?? NUMBER ? ENTER NUMBER - RETURN

Here you should indicate the number you want the line numbering on each page to start with. If you are numbering every fifth line, you would have to make an allowance and type in the number 5 here.

Step 4 **ENTER** the appropriate number.

TOUCH the RETURN key.

Result The Command Line displays the message: NUMBER ALL LINES CONTINUOUSLY? ACCPT OR STOP

The program is asking if you want to number all the lines (the entire document) continuously, or if you want to start numbering over again on each page.

Step 5 **TOUCH** the STOP key.

Result The Command Line displays the message: NUMBER EACH PAGE SEPARATELY? ACCPT OR STOP.

Step 6 **TOUCH** the ACCPT key.

Note: If you touch the STOP key instead of the ACCPT key (telling the system you do not want either continuous line numbering or line numbering that starts over on each page), the Command Line will display the message: STOP - RUN AGAIN - CHOOSE ONE OF THE OPTIONS.

If you receive this message, touch the STOP key and run the program again. Be sure to ACCPT one of the options.

Result The document is removed from the screen and the Command Line displays the message: PAGES BEING NUMBERED SEPARATELY EVERY "x" LINES or NUMBERING PAGES SEPARATELY EVERY LINE

When the program finishes numbering the lines, the Command Line displays the message: LINE NUMBERING COMPLETE - TOUCH STOP

Step 7 **TOUCH** the STOP key.

Step 8 **STORE** the document under a new title.

If you need to make revisions to this document later, make the revisions on the original version of the document (the one without line numbers). Then you can run the #LINE NUMBER program again.

Error Messages

"INVALID NUMBER"

You have attempted to enter non-numeric characters in response to the Command Line message: NUMBER EVERY ?? LINE? ENTER NUMBER - RETURN. The INVALID NUMBER message will appear only briefly, then the Command Line will again display the message: NUMBER EVERY ?? LINE? ENTER NUMBER - RETURN.

Action: Check to make sure that the Shift Lock is up. To continue, enter the correct number, and touch the Return key.

"STOP - INVALID NUMBER - RUN AGAIN"

You have attempted to enter non-numeric characters in response to the Command Line message: BEGIN WITH ?? NUMBER? ENTER NUMBER - RETURN.

Action: Check to make sure that the Shift Lock is up. Touch STOP and run the program again.

MULTI-LINE HEADERS

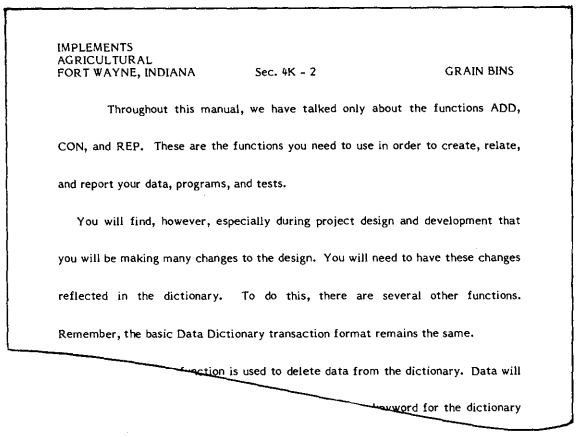
PROGRAM NAME: #MULTI HEAD

Test Documents: TEXT DOC, HEADER 1, HEADER 2

Purpose of the Program

This program will automatically insert (or delete) headers in a document. The headers will not be recorded in the format block, but will be recorded as text in the document. Using this program will allow you to have a header longer than 189 characters.

The headers can be the same on every page of the document, or they can alternate, putting different headers on even and odd numbered pages. The headers can be used with or without page numbers.



IMPLEMENTS
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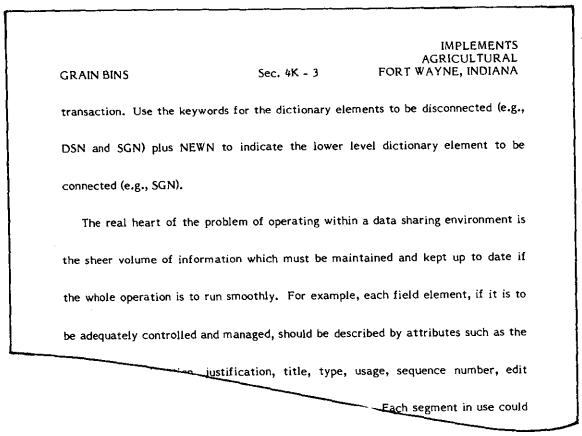
Throughout this manual, we have talked only about the functions ADD, CON, and REP. These are the functions you need to use in order to create, relate, and report your data, programs, and tests.

You will find, however, especially during project design and development that you will be making many changes to the design. You will need to have these changes reflected in the dictionary. To do this, there are several other functions. Remember, the basic Data Dictionary transaction format remains the same.

...action is used to delete data from the dictionary. Data will

...keyword for the dictionary



GRAIN BINS Sec. 4K - 3 IMPLEMENTS
AGRICULTURAL
FORT WAYNE, INDIANA

transaction. Use the keywords for the dictionary elements to be disconnected (e.g., DSN and SGN) plus NEWN to indicate the lower level dictionary element to be connected (e.g., SGN).

The real heart of the problem of operating within a data sharing environment is the sheer volume of information which must be maintained and kept up to date if the whole operation is to run smoothly. For example, each field element, if it is to be adequately controlled and managed, should be described by attributes such as the

... justification, title, type, usage, sequence number, edit

... Each segment in use could

Limitations of the Program

The headers may be any length, within one page.

Before the header program is used, the document must be paginated using a page layout which leaves enough room in the top margin for your header.

No header or trailer should be recorded in the Format Block of your text document.

Document Set-up

The header must be typed and stored as text in a separate document. If two headers are used for alternating headers, each one must be stored as a separate document.

If you want a trailer to appear in your text document in addition to the headers, you will need to record the trailer in the format block of the header document. Then, when you run the header program, the trailers will also be inserted.

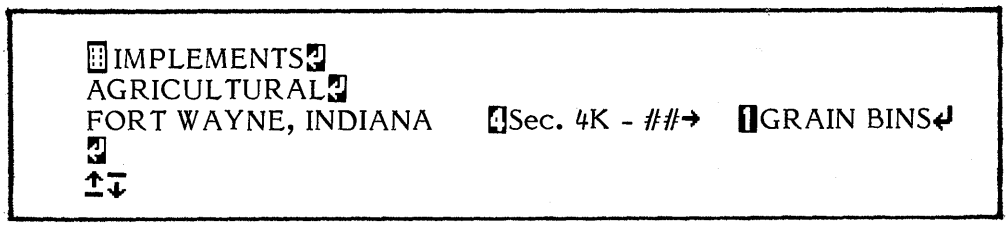
If the text document needs revising after the headers have been inserted, you will need to run the program to delete the headers before making your edit changes.

If you are going to insert trailers in your document with the MULTI-LINE TRAILERS program, you must run the header program first.

Use the following rules to type the header document(s).

- Title and open a new document
- Set a format with the necessary margins, tabs, and line spacing for the header. Set a top margin of 2 or 3 to place the header at the top of the page.
- Do not carrier return following the Format Block.
- Type the header exactly as it will appear on the pages of the document.
- If page numbers are to be included in the header, type two pound signs (##) where the page numbers should appear. Page numbers may also be included in the trailer line of the header document format block.
- Type the appropriate number of carrier returns at the end of the header to separate it from the other text in the document.
- End the header document with one CODE + Index followed by one Index (↥↧). Do not carrier return after the indexes. Be sure that there are no other occurrences of this combination of indexes at any other place in the header.

If you wish to practice creating a header document, continue with the following exercise. If you do not want to practice creating a header document but would like to practice running the Multi-Line Headers program, proceed to the section titled **Using the Program.**



To create the practice exercise:

Step 1 **TITLE** a document and bring it to the screen.

SET the following Format:

- Margins at **12** and **84**
- Tab at **84**
- Top Margin at **3**

Step 2	**TYPE**	the information on the previous page, using centering and right flush codes where necessary.
	TOUCH	the RETURN key twice after the word "MASONRY". This will separate the header from the text of the document.
	TYPE	one CODE + Index followed by one Index. Do not carrier return.
Step 3	**STORE**	the document.

Using the Program

You are now ready to run the header program. The program will ask for the title of the header documents. If you are using two header documents, the program will ask you to type both titles. If you have only one header document, type the same title each time the program asks you for a title.

To run the program to add headers:

Step 1	**RECALL**	the document requiring headers to the screen. (For practice you can copy the documents: TEXT DOC, HEADER 1, & HEADER 2 from the Generic Program disc onto your working disc and run the program with them.)
	CHECK	that the cursor is in the "home" position (the upper left corner).
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#MULTI HEAD**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ACCPT TO ADD HEADERS, STOP TO DELETE HEADERS.
Step 3	**TOUCH**	the ACCPT key.
	Result	The Command Line displays the message: ENTER NAME OF FIRST HEADER DOCUMENT - RETURN.
Step 4	**TYPE**	the title of the first header document to be inserted.
	TOUCH	the RETURN key.
	Result	The Command Line displays the message: ENTER NAME OF SECOND HEADER DOCUMENT - RETURN.

Step 5 **TYPE** the title of the second header document to be inserted. (If you are not using alternating headers, type the title of the first header document again.)

TOUCH the RETURN key.

Result The Command Line displays the message: BEGIN HEADERS ON PAGE? ENTER NUMBER - RETURN

Step 6 **TYPE** the number of the page where you want the headers to begin. For example, if you want the headers to begin on page 1 of the document, type a **1.** If you want the headers to begin on page 5 of the document, type a **5.**

TOUCH the RETURN key.

Result The Command Line displays the message: PAGE NUMBERS IN HEADERS? ACCPT OR STOP

Here you will tell the program whether or not you used page numbers in the header.

If page numbers are not a part of the header,

TOUCH the STOP key and continue with the result at the end of Step 7.

If page numbers are a part of the header,

TOUCH the ACCPT key and continue with the instructions below.

Result The Command Line displays the message: ENTER FIRST PAGE NUMBER - RETURN.

Step 7 **TYPE** the number with which page numbering should begin. For example, if your page numbers should start with one, type a **1.** If your page numbers should begin with 25, type a **25.**

TOUCH the RETURN key.

Result The headers are inserted into your document. When the headers are complete, the first page of the document containing headers is brought to the screen and the Command Line displays the message: HEADER INSERTION COMPLETE - TOUCH STOP.

Step 8 **TOUCH** the STOP key.

STORE the document. Since this program will also delete the headers automatically, you may store over the original document.

Error Messages

If you ACCPT to indicate page numbers in the headers, and the header document does not contain the page number indicator (##), the message STOP - NO PAGE NUMBER INDICATORS IN HEADER will appear in the Command Line.

If you get this message, touch the STOP key and clear the Active List. Check your header document to be sure it has a ## where the page numbers should be, then run the program again.

To run the program and delete headers:

Step 1 **RECALL** the document that has the headers. (For practice you can recall the document TEXT DOC to the screen and delete the headers you just inserted.)

CHECK that the cursor is in the "home" position (the upper left corner).

Step 2 **TOUCH** the PROGRAM key.

TYPE **#MULTI HEAD**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level, then displays the message: ACCPT TO ADD HEADERS, STOP TO DELETE HEADERS.

Step 3 **TOUCH** the STOP key.

Result after the program has completed the deletion of the headers, the Command Line will display the message: HEADER DELETION COMPLETE - TOUCH STOP.

Step 4 **TOUCH** the STOP key again.

MULTI-LINE TRAILERS

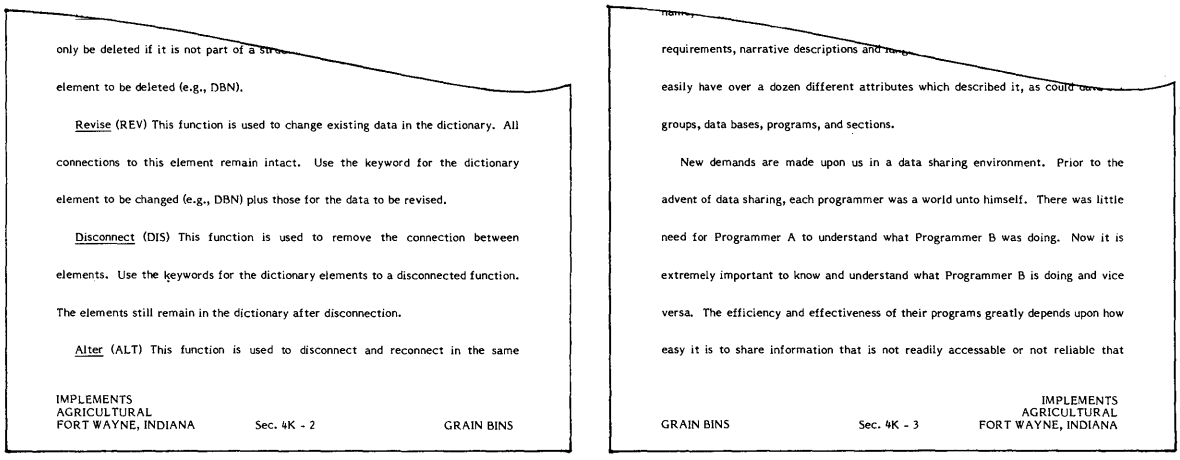
PROGRAM NAME: #MULTI TRAIL

Test Documents: TEXT DOCUMENT, TRAILER 1, TRAILER 2

Purpose of the Program

This program will automatically insert (or delete) trailers in a document. The trailers will not be recorded in the format block, but will be recorded as text in the document. Using this program will allow you to have a trailer longer than 189 characters.

The trailers can be the same on every page of the document, or they can alternate with different trailers on even and odd numbered pages. The trailers can be used with or without page numbers.



only be deleted if it is not part of a str...

element to be deleted (e.g., DBN).

Revise (REV) This function is used to change existing data in the dictionary. All connections to this element remain intact. Use the keyword for the dictionary element to be changed (e.g., DBN) plus those for the data to be revised.

Disconnect (DIS) This function is used to remove the connection between elements. Use the keywords for the dictionary elements to a disconnected function. The elements still remain in the dictionary after disconnection.

Alter (ALT) This function is used to disconnect and reconnect in the same

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requirements, narrative descriptions and ...

easily have over a dozen different attributes which described it, as could ...

groups, data bases, programs, and sections.

New demands are made upon us in a data sharing environment. Prior to the advent of data sharing, each programmer was a world unto himself. There was little need for Programmer A to understand what Programmer B was doing. Now it is extremely important to know and understand what Programmer B is doing and vice versa. The efficiency and effectiveness of their programs greatly depends upon how easy it is to share information that is not readily accessable or not reliable that

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Limitations of the Program

The trailers may be any length within one page.

Before the trailer program can be used, the document must be paginated using a page layout which leaves enough room in the bottom margin for your trailer. Also the last page of your document should end with a required page end code.

No trailer should be recorded in the Format Block of your text document.

If you are also going to insert headers in your document with the MULTI-LINE HEADERS program, you must run the header program first.

If the text document needs to be revised after the trailers have been inserted, you will need to run the program to delete the trailers before making the editing changes.

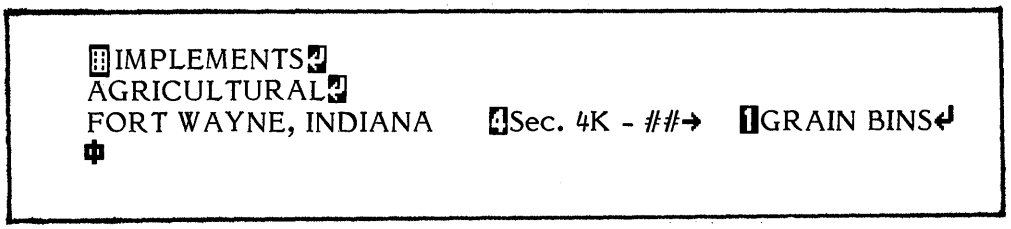
Document Set-up

The trailer must be typed and stored as text in a separate document. If two trailers are used for alternating trailers, each one must be stored as a separate document.

Use the following rules to type the trailer document(s).

- Title and open a new document.
- Set a format with the necessary margins, tabs, and line spacing for the trailer.
- Do not carrier return after the Format Block.
- Type the trailer exactly as it will appear on the pages of the document.
- If page numbers are to be included in the trailer, type two pound signs (##) where the page number should appear.
- End the document with a Null Code (Code + 6). Do not carrier return following the Null Code.

If you wish to practice creating a trailer document, continue with the following exercise. If you do not want to practice creating a trailer document but would like to practice running the Multi-Line Trailers program, proceed to the section titled **Using the Program.**



To create the practice exercise:

Step 1 **TITLE** a document and bring it to the screen.

SET the following Format:

- Margins at **12** and **84**
- Tab at **84**

Step 2 **TYPE** the information shown above, using centering and right flush codes where necessary.

HOLD down CODE, touch the **6** key. Do not carrier return.

Step 3 **STORE** the document.

Using the Program

After creating the trailer document, you are ready to run the trailer program. The first message in the program will ask if you want to add or delete a trailer.

If you are going to add trailers, the program will ask for the title of the trailer documents. If you are using two trailer documents, the program will ask you to type both titles. If you have only one trailer document, type the same title each time the program asks you for a title.

The program will then ask you on which line you want the trailer to begin. If, for example, you have a three line trailer and tell the system to begin on line 60, then the last line of the trailer would end on line 62 (leaving 4 blank lines below it).

When entering the line number, be sure that is beyond (higher than) the last line of text on the longest page of your document. When determining the line number for the last line on a page, be sure to include the line containing the page end code.

To run the program to add trailers:

Step 1	**RECALL**	the document requiring trailers to the screen. (For practice you can copy the documents: TEXT DOCUMENT, TRAILER 1, & TRAILER 2 from the Generic Program disc onto your working disc and run the program with them.)
	CHECK	that the cursor is in the "home" position (the upper left corner).
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#MULTI TRAIL**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ACCPT TO ADD TRAILERS, STOP TO DELETE TRAILERS.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER NAME OF FIRST TRAILER DOCUMENT - RETURN.
Step 3	**TYPE**	the title of the first trailer document to be inserted.
	TOUCH	the RETURN key.
	Result	The first trailer displays on the screen and the Command Line displays the message: ENTER NAME OF SECOND TRAILER DOCUMENT - RETURN.

Step 4 **TYPE** the title of the second trailer document to be inserted. If you are not using alternating trailers, type the title of the first trailer document again.

TOUCH the RETURN key.

Result The second trailer displays on the screen and the Command Line displays the message: BEGIN TRAILER ON WHICH PRINT LINE? ENTER LINE NUMBER - RETURN

Step 5 **TYPE** the number of the line where you want the trailer to begin.

TOUCH the RETURN key.

Note: If the line number you type is not at least one number higher than the line number of the page end code on any page, the message PAGE TOO LONG - STOP -RUN PROGRAM AGAIN will appear in the Command Line.

If you receive this message, touch STOP and run the program again, using a larger line number. You may also have to repaginate your text document to allow enough room for the trailer.

Result The Command Line displays the message: BEGIN TRAILERS ON PAGE ? - ENTER NUMBER - RETURN

Step 6 **TYPE** the page number on which you want the trailers to begin. For example, if you want the trailers to begin on page 1 of the document type a **1**. If you want the trailers to begin on page 5 of the document, type a **5**.

TOUCH the RETURN key.

Result The Command Line displays the message: PAGE NUMBERS IN TRAILERS? ACCPT OR STOP.

Here you will tell the program whether or not you used page numbers in the trailer.

If page numbers are not a part of the trailer,

TOUCH the STOP key and continue with the result at the end of Step 7 on the next page.

If page numbers are a part of the trailer,

TOUCH the ACCPT key and continue with the instructions below.

Result The Command Line displays the message: ENTER FIRST PAGE NUMBER - RETURN.

Step 7	**TYPE**	the number with which page numbering should begin. For example, if your page numbers should start with one, type a 1. If your page numbers should begin with 25, type **25.**
	TOUCH	the RETURN key.
	Result	The trailers are inserted into your document. When the trailers are complete, the first page with trailers is brought to the screen and the Command Line displays the message: TRAILER INSERTION COMPLETE - TOUCH STOP.
Step 8	**TOUCH**	the STOP key when the above message appears in the Command Line.
	STORE	the document. Since this program will also delete trailers automatically, you may store over the original document.

Error Messages

If you ACCPT to indicate page numbers in the trailers, and the trailer document does not contain the page number indicator (##), the Command Line displays the message: STOP - NO PAGE NUMBER INDICATORS IN TRAILER.

If you get this message, touch the STOP key and clear the Active List. Check your trailer document to be sure it has a ## where the page numbers should be, then run the program again.

To run the program to delete trailers:

Step 1	**RECALL**	the document that has the trailers. (For practice you can recall the document TEXT DOCUMENT to the screen and delete the trailers you just inserted.)
	CHECK	that the cursor is in the "home" position (the upper left corner).
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#MULTI TRAIL**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ACCPT TO ADD TRAILERS, STOP TO DELETE TRAILERS.
Step 3	**TOUCH**	the STOP key.
	Result	after the program has completed the deletion of the trailers, the Command Line will display the message: TRAILER DELETION COMPLETE - TOUCH STOP.
Step 4	**TOUCH**	the STOP key again.

PHRASE RECALL

PROGRAM NAME: #PHRASE RECALL

Test Documents: PHRASE RECALL DOC, #A

Purpose of the Program

Phrase Recall allows you to store frequently used text so that it can be entered automatically into your documents any time you wish. Phrase Recall is much quicker than copying the text from one document to another. For instance, Phrase Recall could be used to enter a frequently used closing, such as the one shown in the example below, into all your letters.

> Sincerely yours,
>
> Frederick V. Washington, III
> President and General Manager
> Branding Iron Works, Inc.
>
> JMD/ips

Limitations of the Program

When you use the Phrase Recall program to store phrases, you will need to insert your System Disc. The Phrase Recall program uses the System Disc to check the stored phrase for accuracy before it is recorded on your working disc.

The phrase text must be a minimum of three characters and cannot be longer than one page (150 lines).

If you use format blocks in your stored phrase, any text in your document appearing after the stored phrase will use the settings of the last format block in the stored phrase.

The phrases cannot be edited after they are stored. If you need to correct an error in a phrase, you will need to delete it from the Index, retype the phrase, and run the Phrase Program.

No documents can be printed while the Phrase Recall program is being used to store phrases.

Document Set-up

The phrase text must be in a document by itself. The document cannot be more than one page (maximum 150 lines) long. The page cannot end with a required page end code

If you will need to use your phrase text document for any other purpose, it should be stored and brought to the screen again before running the Phrase Recall program. Running the Phrase Recall program will store the phrase text as a program.

This program may be used on any document.

If you wish to practice creating and storing a phrase, continue with the following exercise. If you do not want to practice creating phrase, but would like to practice entering a stored phrase in a document, proceed to the section titled **Using the Program.**

To **create and store** a phrase:

Step 1	**INSERT**	your system disc.
	CHECK	that your working disc is highlighted.
Step 2	**TITLE**	the phrase text document and touch ACCPT three times to call it to the screen.
	TYPE	the text you want in your phrase. For practice you could type the example shown on the previous page.
	CHECK	the phrase text for errors and make any necessary corrections. If you wish to save the phrase text for other use, store the document, then recall it to the screen.
Step 3	**TOUCH**	the PROGRAM key.
	TYPE	**#PHRASE RECALL**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: PLEASE WAIT while the program checks the phrase text document for set-up accuracy.
		The Command Line will then display the message: IS THE 1ST FORMAT BLOCK PART OF YOUR PHRASE? - YES/NO

If you answer yes, the phrase text (and any document text following the phrase text) will use the format of the phrase and not the format of the document in which it is entered. If you answer no, the phrase text will use the format of the document in which it is entered.

To answer "yes", touch the ACCPT key. To answer "no", touch the STOP key. If you are using the practice phrase shown on the first page of this program, then

TOUCH	the STOP key.
Result	The Command Line then displays the message: STORING PHRASE "phrase text document". The program then clears the phrase text document and returns the Index to the screen.
LOOK	at the first document listed on the Index.

The phrase program that you created is listed as the first title in your index. Notice that the document type is **PM** - this tells you that it is a program. Once you have created a phrase program, you cannot recall it to make editing changes.

Using the Program

You may use the Phrase Recall program to create as many separate phrases as you wish. Simply give each phrase a unique title when you create it.

To run your phrase program:

Step 1	**RECALL**	the document requiring phrases to the screen. (For practice you can copy the documents: PHRASE RECALL DOC & #A from the Generic Program disc onto your working disc and run the program with them.)
	HIGHLIGHT	the position in the document where you want the phrase text to be entered. **Or,** position the Next Character Mark where the phrase is to go. Note: Be sure the highlighted position is after the first format block on the page.
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	the title of your stored phrase.
	TOUCH	the ACCPT key.
	Result	The phrase will be automatically entered into your document.

You can use phrase recall during input of a document as well as during edit. For instance, if you had to type a long word or phrase many times in a report, you could make it into a phrase program and simply recall it wherever it is needed.

Error Messages

If your phrase text document is set up incorrectly when you run the #PHRASE RECALL program, one of the following messages will be displayed.

STOP - REMOVE CODE + 2 - RUN AGAIN

Action: Touch STOP, touch DEL to remove the CODE + 2, then run the program again from **Step 1.**

STOP - ENTER TEXT IN "phrase text document" - RUN AGAIN

Action: Touch STOP, type the desired phrase text into the document (remember it must be at least three characters long), then run the program again from **Step 1.**

REFORMATTING/PAGINATING OPTIONS

PROGRAM NAMES:

#R	(Reformat only)	**#UR**	(Unattended reformat only)
#P	(Paginate only)	**#UP**	(Unattended paginate only)
#RP	(Reformat & paginate)	**#URP**	(Unattended reformat & paginate)
#EY	(Edit Reformat = Yes)	**#EN**	(Edit Reformat = No)
#SS	(Auto Carrier Return = No Justify = Yes)	**#SSN**	(Auto Carrier Return = Yes Justify = No)

Purpose of the Programs

The purpose of these programs is to reformat and/or paginate a document without going to the Format Page. Using these programs will eliminate extra keystrokes and save time.

Limitations of the Programs

There are no limitations to these programs; however, it should be noted that the Program #EY does not change the condition of "Unattended" under Edit Reformat.

Document Set-up

No special set-up is required. The programs may be used on any document.

Using the Program

The programs are ready to use at any time. Simply follow the instructions below for running the programs.

To run the program:

Step 1	**RECALL**	the desired document to the screen.
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	the program name (example: **#RP**) and touch ACCPT.
	Result	The appropriate reformatting/paginating action will begin automatically.

SCREEN OPTIONS

PROGRAM NAMES:

#ZLY	(Zoom Line = Yes)	**#ZLN**	(Zoom Line = No)
#ZSY	(Zoom Screen = Yes)	**#ZSN**	(Zoom Screen = No)
#DY	(Dark Screen = Yes)	**#DN**	(Dark Screen = No)
#CY	(Code Display = Yes)	**#CN**	(Code Display = No)
#SY	(Split Line = Yes)	**#SN**	(Split Line = No)

Purpose of the Programs

The purpose of these programs is to change the screen options without going to the Format Page. Using these programs will eliminate extra keystrokes and save time. For instance, you can turn on Code Display by simply touching the PROGRAM key, typing #CY, and touching ACCPT.

Limitations of the Program

There are no limitations to these programs.

Document Set-up

No special set-up is required. The programs may be used on any document.

Using the Program

The programs are ready to use at any time. Simply follow the instructions below for running the programs.

To run the program:

Step 1	**RECALL**	the desired document to the screen.
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	the program name (example: **#CY**) and touch ACCPT.
	Result	The appropriate screen option is automatically turned on without going to the Format Pages.

SEARCH & REPLACE

PROGRAM NAME: #SRCH:REPL

Test Document: SRCH:REPL DOC

Purpose of the Program

This program will allow you to search to and replace up to four different text strings in a document all at one time. The search may be unattended, meaning that it will replace every occurrence of the text string; or it may be attended, meaning that the program will stop at each occurrence of the text and ask if you want to replace it.

Limitations of the Program

All 'search to' and 'replace with' strings are limited to a maximum of 62 characters.
This program cannot be used to search to and replace format blocks.

Document Set-up

No special set-up is required. This program may be used on any document.

Using the Program

This program can be used anytime you need to replace a word or words that occur many times throughout a document. For instance, if you had typed the abbreviation ABC throughout a long document and then had to change it to "American Broadcasting Corporation", you would use this program to search to ABC and replace it.

Listed below are two sets of instructions, one to run the program unattended and one to run the program attended so that you can choose which text strings to replace.

To run the program unattended and automatically replace all strings:

Step 1	**RECALL**	the document to be searched/replaced to the screen. The program will begin at the top of the page that is on the screen when you start the program. (For practice you can copy the document SRCH:REPL DOC from the Generic Program disc onto your working disc and run the program on it.)
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#SRCH:REPL**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: UNATTENDED SEARCH/REPLACE? ACCPT OR STOP.

Step 3	**TOUCH**	the ACCPT key.
	Result	The Command Line displays the message: ENTER NUMBER OF STRINGS TO BE REPLACED (MAX 4) - ACCPT.
Step 4	**TYPE**	a number (from 1 to 4) that represents the number of text strings you wish to replace.
	TOUCH	The ACCPT key.
		Note: If you enter a zero or a number higher than 4, the Command Line will momentarily display the message: INVALID NUMBER ENTERED - 1, 2, 3, OR 4 ARE VALID and the message: ENTER NUMBER OF STRINGS TO BE REPLACED (MAX 4) -ACCPT will again display in the Command Line. Type in the correct number and touch ACCPT to continue.
	Result	The Command Line displays the message: ENTER FIRST SEARCH STRING - ACCPT.
Step 5	**TYPE**	the first string you wish to search and replace.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER FIRST REPLACE STRING - ACCPT.
Step 6	**TYPE**	the first replace string.
	TOUCH	the ACCPT key.

At this point, the program will continue to prompt you for as many search and replace strings as you requested in Step 4. When the last replace string has been typed and accepted, continue with the instructions below.

	Result	The Command Line displays the message: REFORMAT/PAGINATE AFTER SEARCH? ACCPT OR STOP.
Step 7	**TOUCH**	the ACCPT key to automatically reformat and paginate after the search and replace is finished.
		OR
	TOUCH	the STOP key to tell the system not to reformat and paginate after the search and replace is finished.
	Result	The program will search to and replace every occurrence of the requested strings.

If reformat/paginate was requested, the Command Line will display the message: AUTOMATIC REFORMAT/PAGINATE IN PROCESS while that part of the program is running.

When all the changes have been made, the Command Line will display the following message:

SEARCH/REPLACE & REFORM/PAGINATE COMPLETE - TOUCH STOP

OR

If reformat/paginate was not requested, the Command Line will display the message: SEARCH AND REPLACE COMPLETE - TOUCH STOP

Step 8 **TOUCH** the STOP key to exit the program.

STORE the document over the original or give it a new title if you wish to keep both the original and the revision.

To run the program attended and selectively replace strings:

Step 1 **RECALL** the document to be searched/replaced to the screen. The program will begin at the top of the page that is on the screen.

Step 2 **TOUCH** the PROGRAM key.

TYPE **#SRCH:REPL**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level, then displays the message: UNATTENDED SEARCH/REPLACE? ACCPT OR STOP.

Step 3 **TOUCH** the STOP key.

Result The Command Line displays the message: SELECTIVE SEARCH/REPLACE? ACCPT OR STOP.

Step 4 **TOUCH** the ACCPT key.

Note: if you touch STOP, the Command Line will display the message: STOP - RUN AGAIN & CHOOSE ONE OF THE OPTIONS.

Result The Command Line displays the message: ENTER NUMBER OF STRINGS TO BE REPLACED (MAX 4) - ACCPT.

Step 5 **TYPE** a number (from 1 to 4) that represents the number of text strings you wish to replace.

TOUCH the ACCPT key.

Note: If you enter a zero or a number higher than 4, the Command Line will momentarily display the message: INVALID NUMBER ENTERED - 1, 2, 3, OR 4 ARE VALID and the message: ENTER NUMBER OF STRINGS TO BE REPLACED (MAX 4) -ACCPT will again display in the Command Line. Type in the correct number and touch ACCPT to continue.

Result The Command Line displays the message: ENTER FIRST SEARCH STRING - ACCPT.

Step 6 **TYPE** the first string you wish to search and replace.

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER FIRST REPLACE STRING - ACCPT.

Step 7 **TYPE** the first replace string.

TOUCH The ACCPT key.

At this point, the program will continue to prompt you for as many search and replace strings as you requested in Step 5. When the last replace string has been typed and accepted, continue with the instructions below.

Result The Command Line displays the message: REFORMAT/PAGINATE AFTER SEARCH? ACCPT OR STOP.

Step 8 **TOUCH** the ACCPT key to automatically reformat and paginate after the search and replace is finished.

OR

TOUCH the STOP key to tell the system not to reformat and paginate after the search and replace is finished.

Result The program searches to and highlights the first occurrence of the specified string and the Command Line displays the message: REPLACE THIS STRING? ACCPT OR STOP.

TOUCH the ACCPT key if you want to replace the highlighted text.

OR

TOUCH the STOP key if you do not want to replace the highlighted text.

Result The program will replace the text or not replace the text depending on which instruction you gave the system. Then it will search to the next string, highlight it and the Command Line will again display the message: REPLACE THIS STRING? ACCPT OR STOP.

Step 9 **CONTINUE** with the program until all required occurrences of the text strings have been searched to and replaced.

When all the changes have been made, the Command Line will display one of the following messages.

If reformat/paginate was requested, the Command Line will display the message: AUTOMATIC REFORMAT/PAGINATE IN PROCESS while that part of the program is running.

When reformat/paginate has been completed, the Command Line will display the following message: SEARCH/REPLACE & REFORM/PAGINATE COMPLETE - TOUCH STOP

OR

If reformat/paginate was not requested, the Command Line will display the message: SEARCH AND REPLACE COMPLETE - TOUCH STOP

Step 10 **TOUCH** the STOP key to exit the program.

STORE the document over the original or give it a new title if you wish to keep both the original and the revision.

DIRECT PRINT

PROGRAM NAME: #DIRECT PRINT

Purpose of the Program

The Direct Print program allows you type directly on paper inserted in the printer. All the alpha-numeric keys can be used. You can also use CODE + backspace, CODE + half backspace, CODE + 6, CODE + 7, and make changes in the format.

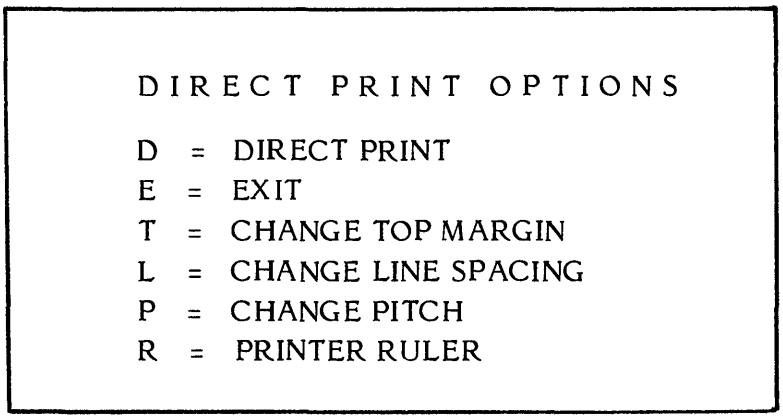
Limitations of the Program

The Direct Print program can be used only when a document is on the screen. Direct Print will turn off justify, edit reformat, automatic paging, and automatic carrier return. These options will be returned to their previous status when you finish using from the program.

Using the Program

To use Direct Print you can create a new document or recall an existing one. Text is entered by typing as you normally do. You will be able to see the text on the screen and on the paper. You can correct errors by backspacing; however, this will not correct the strikeover on your paper. You cannot backspace out a format block.

At the start of the program, the 860 will ask you if you want to change the top margin and tell you to insert paper in the printer. The Command Line will momentarily display DIRECT PRINT OPTIONS followed by the message ENTER OPTION CODE: and the screen will display the Direct Print options list.



You may now enter one of the above **one character** option codes. To begin typing with direct print, you type the character **D.** To stop using the direct print program, you touch STOP, then type the character **E.** To make format changes, you use the applicable option code.

If you want to practice using the Direct Print program follow the steps below.

Practice Exercise

Step 1	**TITLE**	a document PRINT PRACTICE and bring it to the screen.
	TOUCH	the PROGRAM key.
	TYPE	**#DIRECT PRINT**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: CHANGE TOP MARGIN?
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: TOP MARGIN VALUE.
Step 2	**TYPE**	the number 12
	TOUCH	the ACCPT key
	Result	The Command Line displays the message: INSERT PAPER--ACCPT TO CONTINUE.

Be sure you have inserted paper in your printer. (If you are using Direct Print with an APF, proceed to the next step, without inserting paper.)

Step 3	**TOUCH**	the ACCPT key.
	Result	The paper in the printer moves up to the first line typing position and the Command Line momentarily displays the message: DIRECT PRINT OPTIONS: and then the Direct Print option list is displayed on the screen and the Command Line displays the message: ENTER OPTION CODE:

Productive Time:

This can be divided into two parts, the time spent by the secretary and the time spent by the dictator. The time required for dictation and typing accounts for 55% of the cost of a business letter.

Nonproductive Time:

This time comprises an 8% cost factor. This is the waiting time caused by interruptions during the letter's production or the job time lost due to vacation or illness.

Look at the Direct Print Option list. To select one of the options, you type the **one character** code for the option you want.

Step 4 **TYPE** **D**

Result The Command Line displays the message: DIRECT PRINT indicating that the printer will now print the characters as you type them.

TYPE the first line of the document followed by two returns.

Look at the paper in your printer. As you were typing on the keyboard you could hear the printer printing the same keystrokes on the paper.

Now you will change the line spacing for the next paragraph.

Step 5 **TOUCH** either the ACCPT or STOP key.

Result The Command Line displays the message: ENTER OPTION CODE: (? = OPTION LIST).

If you need to see the Direct Print option list before you can proceed, type a question mark (?) and touch ACCPT.

TYPE a question mark (?).

Result — The Direct Print option list is displayed on the screen and the Command Line displays the message: ENTER OPTION CODE:

Now you will select the Change Line Spacing option and change the line spacing to double space.

Step 6 **TYPE** **L**

Result — The Command Line displays the message: LINE SPACING: 1, 1½, 2, OR 3? " "

TYPE **2**

TOUCH the ACCPT key.

Result — The Command Line displays the message: ENTER OPTION CODE (? = OPTION LIST).

Step 7 **TYPE** **D** to start typing again with Direct Print.

Result — The Command Line displays the message: DIRECT PRINT.

TYPE the first paragraph, and return twice. Remember, automatic carrier return is not on, so you have to type a return at the end of each line.

Now you will go back to the Direct Print Option list and change the line spacing back to 1. You will also use PRINTER RULER to change the margin settings and add a tab.

Step 8 **TOUCH** either the ACCPT or the STOP key.

Result — The Command Line displays the message: ENTER OPTION CODE: (? = OPTION LIST)

Remember if you need to look at the Direct Print option list, type a question mark (?), accept, and the list will be displayed on the screen.

TYPE **L** (for line spacing).

Productive Time:

This can be divided into two parts, the time spent by the secretary and the time spent by the dictator. The time required for dictation and typing accounts for 55% of the cost of a business letter.

Nonproductive Time:

This time comprises an 8% cost factor. This is the waiting time caused by interruptions during the letter's production or the job time lost due to vacation or illness.

Result — The Command Line displays the message: LINE SPACING: 1, 1½, 2, OR 3? " "

TYPE **1** to change the line spacing to single.

TOUCH the ACCPT key

Result — The Command Line displays the message: ENTER OPTION CODE (? = OPTION LIST).

Next you'll change the margins and tab settings using the printer ruler.

Step 9

TYPE **R** to be able to use the PRINTER RULER option.

Result — The Command Line displays the message: PRINTER RULER

TOUCH the space bar ten times. This will move the printer 10 spaces to the right. You should now be at **22.**

TOUCH the Index key to set the left margin at 22.

TOUCH the space bar five more times. This will move the printer 5 more spaces to the right. You should now be at **27.**

TOUCH the Lower Tab key to set a regular tab at 27.

TOUCH the space bar 45 more times. This will move the printer to position 72.

TOUCH CODE + Index to set the right margin.

TOUCH the ACCPT key.

Result The format block is recorded and the Command Line displays the message: ENTER OPTION CODE: (? = OPTION LIST).

Step 10 **TYPE** **D** to use DIRECT PRINT.

Result Look at the screen and note the format block and the next character mark have moved to the new left margin position and the Command Line displays the message: DIRECT PRINT.

Step 11 **CONTINUE** typing the rest of the document. Use the upper tab to indent the first line of the last paragraph. Remember, automatic carrier return is not on, so you have to type a return at the end of each line.

You have completed your document and no longer want to Direct Print.

Step 12 **TOUCH** either the ACCPT or the STOP key.

Result The Command Line displays the message: ENTER OPTION CODE: (? = OPTION LIST).

TYPE **E** to exit from the Direct Print program.

Result You are no longer in the Direct Print program mode. Also, if you are using an APF your typing page is rolled up into the document tray.

When you exit the Direct Print program the edit options: justify, edit reformat, automatic paging, and automatic carrier return are returned to their previous status. However, any changes you made to the margins, tabs, etc. while using the PRINTER RULER will remain.

Step 13 **STORE** the document.

You have completed the Direct Print program practice exercise. For your information, a more detailed explanation of the Direct Print Options list follows.

Direct Print Options

D = DIRECT PRINT

Typing **D** allows you to begin typing at the keyboard and have the text appear on the screen and print on the paper.

E = EXIT

Typing E allows you to exit from the Direct Print program and turns the options that were turned off by the program back on.

T = CHANGE TOP MARGIN

The program will allow you to change the top margin before feeding your paper and starting to Direct Print. As mentioned previously, you can also select this option anytime during the program operation. Only the first format block of any given page affects the top margin setting. When **CHANGE TOP MARGIN** is selected, the Command Line displays the message: TOP MARGIN VALUE. You will then type the new top margin number and touch ACCPT. When you have accepted, the 860 will prompt you to insert the paper and ask you to select the next option.

L = CHANGE LINE SPACING

Typing **L** allows you to change the line spacing. Four possible settings are displayed in the Command Line: **1, 1½, 2, OR 3.** Type the desired line spacing number and touch ACCPT. When you have accepted, the 860 will create a format block at the cursor position.

P = CHANGE PITCH

Typing **P** allows you to change the pitch. Three possible pitch settings are displayed in the Command Line: **PS 10 12.** Type the desired pitch setting and touch ACCPT. When you have accepted, the 860 will create a format block at the cursor position.

R = PRINTER RULER

Typing **R** allows you to set margins and tabs. This option is very similar to the format scale, but the format scale does not appear on the screen.

- Space bar advances printer forward
- Reverse + space bar moves the printer backward (even beyond the left margin)
- Touching Index sets the left margin
- Touching CODE + Index sets the right margin
- Touching Lower Tab key sets a regular tab
- Touching Upper Tab key sets a special tab
- Touching CHAR moves the printer to the next tab position, or, to the right margin if no tab position is found
- Touching RVRSE + CHAR moves the printer to the previous tab position, or, to the left margin if no tab position is found
- Touching DEL at a tab position deletes that tab
- SCROLL and RVRSE + SCROLL moves the paper up or down by ¼ line increments.

Touching ACCPT records the format block.

Error Messages

PRINTER NOT AVAILABLE

There are four possible conditions that will give you the above error message:

1. No printer is connected to the system.
2. A Shared Printer Interface has the printer in use by another system.
3. A document is being printed.
4. A document is in the print queue.

UNACCEPTABLE NUMBER -- RE-ENTER

CONVERT BOLD

PROGRAM NAME: #CONVERT BOLD

Test Document: CONVERT BOLD DOC

Purpose of the Program

When you convert 850 documents to 860, bolded text remains bolded in the 850 style (using backspaces and ½ backspaces). The Convert Bold program removes the backspaces and ½ backspaces and replaces them with the 860 bolding codes. Using this program will make your documents easier to view on the screen.

Limitations of the Program

This program should not be used if you will need to convert your documents back to 850. The 860 bolding codes cannot be converted back to 850.

The program will delete the underlines from all underlined and bolded words when it runs, so you must put the them back in after running the program.

Document Set-up

No special set-up is required. The program may be used on any document converted from 850 to 860.

Using the Program

The program is ready to use at any time. Simply follow the instructions below for running the program.

To run the program:

Step 1	**RECALL**	the desired document to the screen. (For practice you can copy the document: CONVERT BOLD DOC from the Generic Program disc onto your working disc and run the program on it.)
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#CONVERT BOLD**
	TOUCH	the ACCPT key.

Result — The Command Line briefly shows the software level and the program searches to the first occurrence of bolded text. The Command Line displays the message: CONVERT BOLD IN PROGRESS -- PLEASE WAIT as it removes the 850 bolding and then displays the message: ADDING 860 BOLD -- PLEASE WAIT as it bolds the text with 860 codes.

If the program finds backspaces and ½ backspaces that are not part of an 850 bolded word or phrase, the Command Line will display the message: NOT A BOLDED WORD -- WILL FIX.

The program will search to and convert all occurrences of bolded text.

When the conversion is completed, the last page of your document will be on the screen and the Command Line will display the message: CONVERT BOLD PROGRAM COMPLETE.

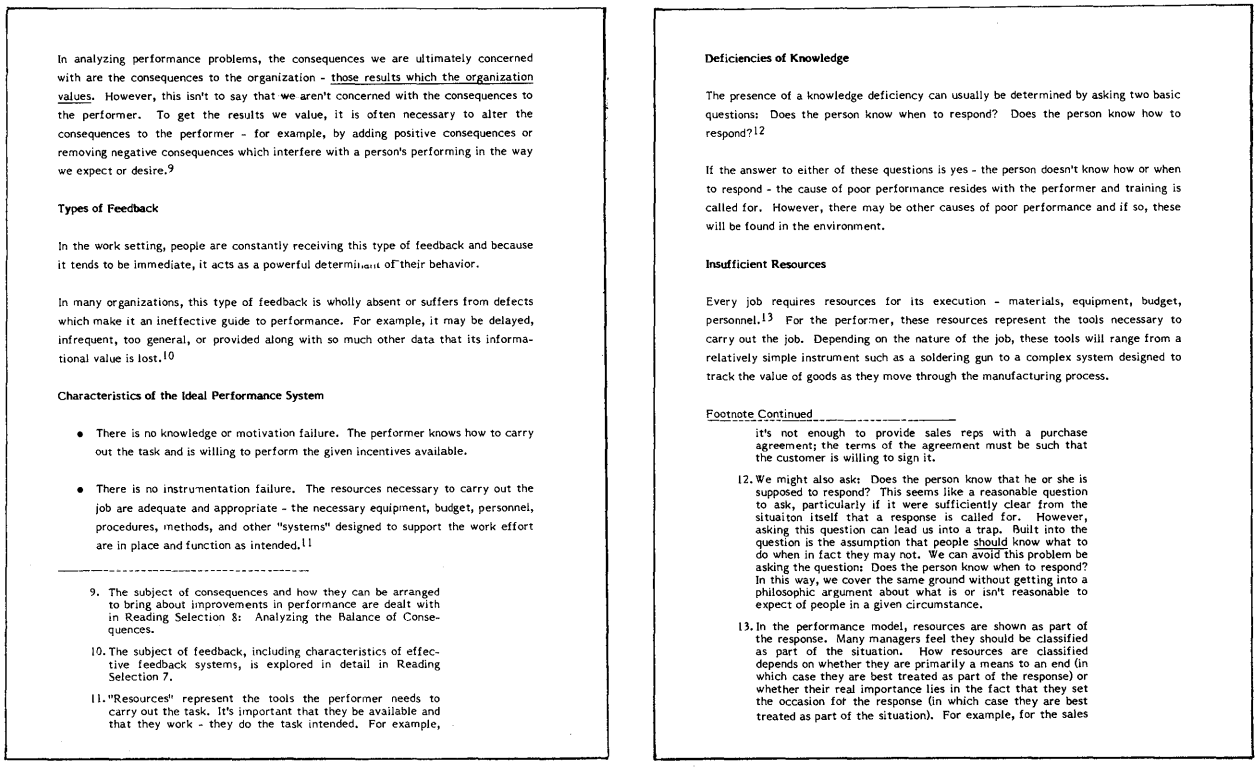
Step 3 **TOUCH** the STOP key.

STORE the document over the original or give it a new title if you wish to keep both the original and the revision.

Introduction

The Footnote Programs provide assistance in positioning footnotes within a text document. Footnotes are notes of reference, explanation, or comments placed below the text on a printed page. Direct quotations/references from other sources, etc., are usually identified in footnotes.

Text and footnotes are typed as two separate documents and the #FOOTNOTES program is used to automatically position the footnotes within the text document. As it runs it will merge the footnotes (source document) into the text (destination document), paginate the merged document, move the footnotes to the bottom of each page, enter an underscore line between text and footnotes, and insert white space between text and underscore on short pages. If a footnote is too long, the footnote text can be split between pages, and the 860 will ask you for a decision regarding each occurrence.



In analyzing performance problems, the consequences we are ultimately concerned with are the consequences to the organization - those results which the organization values. However, this isn't to say that we aren't concerned with the consequences to the performer. To get the results we value, it is often necessary to alter the consequences to the performer - for example, by adding positive consequences or removing negative consequences which interfere with a person's performing in the way we expect or desire.9

Types of Feedback

In the work setting, people are constantly receiving this type of feedback and because it tends to be immediate, it acts as a powerful determinant of their behavior.

In many organizations, this type of feedback is wholly absent or suffers from defects which make it an ineffective guide to performance. For example, it may be delayed, infrequent, too general, or provided along with so much other data that its informational value is lost.10

Characteristics of the Ideal Performance System

- There is no knowledge or motivation failure. The performer knows how to carry out the task and is willing to perform the given incentives available.
- There is no instrumentation failure. The resources necessary to carry out the job are adequate and appropriate - the necessary equipment, budget, personnel, procedures, methods, and other "systems" designed to support the work effort are in place and function as intended.11

9. The subject of consequences and how they can be arranged to bring about improvements in performance are dealt with in Reading Selection 8: Analyzing the Balance of Consequences.

10. The subject of feedback, including characteristics of effective feedback systems, is explored in detail in Reading Selection 7.

11. "Resources" represent the tools the performer needs to carry out the task. It's important that they be available and that they work - they do the task intended. For example,

Deficiencies of Knowledge

The presence of a knowledge deficiency can usually be determined by asking two basic questions: Does the person know when to respond? Does the person know how to respond?12

If the answer to either of these questions is yes - the person doesn't know how or when to respond - the cause of poor performance resides with the performer and training is called for. However, there may be other causes of poor performance and if so, these will be found in the environment.

Insufficient Resources

Every job requires resources for its execution - materials, equipment, budget, personnel.13 For the performer, these resources represent the tools necessary to carry out the job. Depending on the nature of the job, these tools will range from a relatively simple instrument such as a soldering gun to a complex system designed to track the value of goods as they move through the manufacturing process.

Footnote Continued

it's not enough to provide sales reps with a purchase agreement; the terms of the agreement must be such that the customer is willing to sign it.

12. We might also ask: Does the person know that he or she is supposed to respond? This seems like a reasonable question to ask, particularly if it were sufficiently clear from the situaiton itself that a response is called for. However, asking this question can lead us into a trap. Built into the question is the assumption that people should know what to do when in fact they may not. We can avoid this problem be asking the question: Does the person know when to respond? In this way, we cover the same ground without getting into a philosophic argument about what is or isn't reasonable to expect of people in a given circumstance.

13. In the performance model, resources are shown as part of the response. Many managers feel they should be classified as part of the situation. How resources are classified depends on whether they are primarily a means to an end (in which case they are best treated as part of the response) or whether their real importance lies in the fact that they set the occasion for the response (in which case they are best treated as part of the situation). For example, for the sales

Document with Footnotes

Three auxiliary programs have also been included in the Footnote Programs training package.

- The #DELETE FOOTNOTES program allows you to delete footnotes from your destination document and removes the corresponding footnote reference from the source document.

- The #RENUMBER FOOTNOTES program will automatically renumber your footnotes in the destination document and also renumber the footnote references in the source document.

  You will find the above programs extremely helpful when it is necessary to edit your documents.

- The #ENTER FOOTNOTES program creates a custom program which allows you to insert the footnote references and corresponding footnotes simultaneously while typing your destination document. It can also be used during edit if you need to add references/footnotes to your existing documents.

Training Materials You Will Need

Footnotes program disc
Working disc

Prerequisites

In order to use the Footnotes program, you need to know how to use the 860's Word Processing features. Before taking the Footnotes program training, you should have completed at least the first seven chapters of the 860 Operator Manual.

Getting Started

Programs are not recalled to the screen like other documents. To use a program, you press the PROGRAM key (located above the SEARCH key), type the program's title and touch ACCPT. The program will then begin performing its task. This is referred to as running or "executing" the program. When the program begins, it will briefly show some numbers in the Command Line. These numbers are the software level. The only time you need to make a note of the software level is when you are going to call the Customer Support Center (CSC) with questions or problems. The CSC may ask you what software level you have.

The program will also ask you questions in the Command Line. This allows you to tell the program exactly how you want it to work on your document. If the program needs the System Disc (or any other disc) but the disc is not in the system, the Command Line will display the message: INSERT DISC "disc id". When you insert the disc and touch ACCPT, the program will continue.

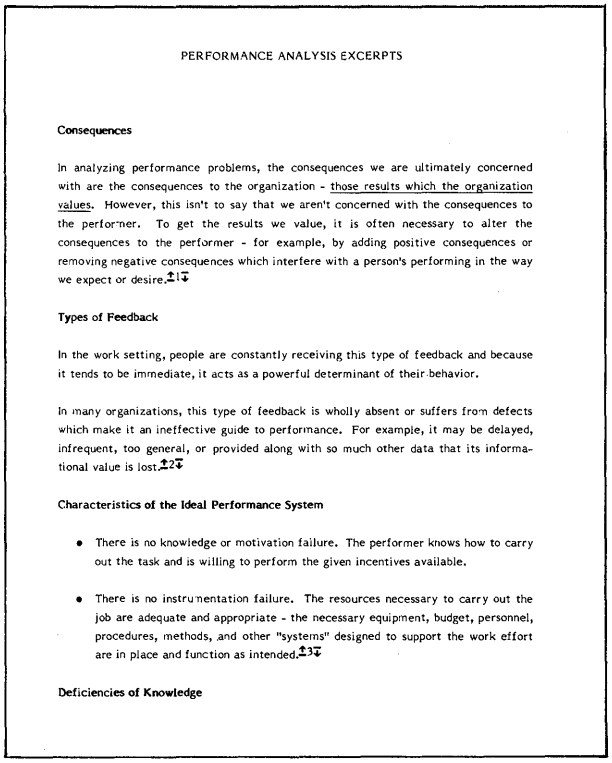
Limitations of the Program

- All footnotes for one document must be typed in the same source document.
- Each footnote must be typed on a separate page in the source document.
- Page layout must be the same throughout the destination document.
- If trailers are used in the destination document, the footnotes may print on top of them.
- Using required Page End Codes within the destination document may cause extra blank pages to appear in the final document.
- Undesirable paragraph splits may occur in the destination document during footnote insertion; that is, first (or last) lines of paragraphs may become separated from their related text.
- If two footnote references appear on the same line in the destination document, the first reference on that line cannot be split; it must be moved to the next page. Splitting the first footnote may result in loss of data.
- Because the #FOOTNOTES program requires an extensive amount of disc space for storage and operation, available disc space needs to be considered prior to running the program. Using RECOVER DISC SPACE, deleting unnecessary documents from your index, or deleting your backup index before running the #FOOTNOTES program may be helpful.
- The **UND, RVRSE, CHAR, WORD,** or **LINE** keys cannot be used in the source document while running the #ENTER FOOTNOTES program. Only the Backspace key can be used to correct errors while typing.
- The source document can contain only one format block in the #ENTER FOOTNOTES program.
- The #ENTER FOOTNOTES program does not always recognize the bottom margin of the destination document. It is necessary to reformat and paginate this document prior to running the #FOOTNOTES program on it.

Setting Up Your Own Documents

To use the Footnotes program, you will need to set up two documents. A **source** document, which will contain all of the footnotes, and a **destination** document, containing text and references telling the system where to place the footnotes. Actual footnote references are most often numbers, however, symbols may also be used. You will find background information regarding the use of numbers and/or symbols as footnote references in the Appendix to this package.

You will need to select unique characters/symbols to precede and follow your footnote references; for example, two reverse indexes in front of the footnote reference number/symbol and two indexes following it. Using indexes in this way also serves to position the footnote references one-half line above the line of typing. (Refer to the Appendix to this package for suggestions on proper footnote format.) You are not limited to using indexes to surround your footnote references. Any character or combination of characters can be used, keeping in mind the fact that these characters will either be printed in your document or will have an effect on how your printed document looks. The unique character string you select should not appear anywhere else in either the source or destination documents. The manner in which footnotes are typed in your organization may affect your choice of characters used to identify or "set-off" your footnote references.



PERFORMANCE ANALYSIS EXCERPTS

Consequences

In analyzing performance problems, the consequences we are ultimately concerned with are the consequences to the organization - those results which the organization values. However, this isn't to say that we aren't concerned with the consequences to the performer. To get the results we value, it is often necessary to alter the consequences to the performer - for example, by adding positive consequences or removing negative consequences which interfere with a person's performing in the way we expect or desire.↥1↧

Types of Feedback

In the work setting, people are constantly receiving this type of feedback and because it tends to be immediate, it acts as a powerful determinant of their behavior.

In many organizations, this type of feedback is wholly absent or suffers from defects which make it an ineffective guide to performance. For example, it may be delayed, infrequent, too general, or provided along with so much other data that its informational value is lost.↥2↧

Characteristics of the Ideal Performance System

- There is no knowledge or motivation failure. The performer knows how to carry out the task and is willing to perform the given incentives available.
- There is no instrumentation failure. The resources necessary to carry out the job are adequate and appropriate - the necessary equipment, budget, personnel, procedures, methods, and other "systems" designed to support the work effort are in place and function as intended.↥3↧

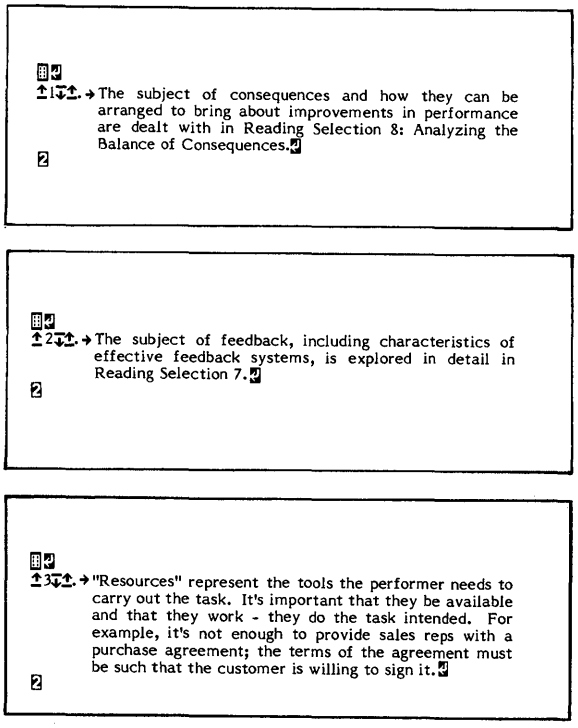
Deficiencies of Knowledge

Destination Document Example

The destination document

The destination document is the document containing the text into which the footnotes will be inserted.

- Use normal text input methods to record the text document.
- Be sure to include your selected unique character string immediately preceding and following each footnote reference.
- It is recommended that you reformat and paginate the document before running the Footnotes program.



Source Document Example

The source document

The source document contains the footnotes.

- Each footnote must be on a separate page.
- Footnotes should be typed in a consistent manner. For example, if you want the footnotes in your merged document to be separated by one line space, type a carrier return after the format block at the beginning of each footnote page.
- End each page with a carrier return and a CODE + 2.

Using the Program

You can use prerecorded documents supplied with this training package to practice running the program. The program will ask you for the title of your source document, the page layout used in your destination document, and the unique characters/codes surrounding your footnote references. The program will then insert the footnotes into the destination document on a page-by-page basis.

The program may be used in attended or unattended mode. In the attended mode, you will be asked to make decisions regarding splitting a footnote or moving the reference line plus the footnote to the next page. If you elect to split a footnote, you can override the program decision regarding the number of lines that will fit on the reference page and the number of lines to be carried over to the next page. That is, if the program tells you that 10 out of 14 lines of the footnote will fit on the reference page, you can elect to have 7 out of 14 lines appear on the reference page and the other 7 placed on the next page; or you can elect to have 11 out of 14 lines appear on the reference page and the other 3 placed on the next page, etc.

In the unattended mode, you will be asked whether you want all the footnotes split or moved. The program then merges the footnotes and text automatically without stopping for an operator decision.

Before you start the practice exercises you should copy the programs and the documents DESTINATION and SOURCE from your program disc to your working disc.

To run the program attended:

Step 1	**RECALL**	the practice document DESTINATION to the screen.
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#FOOTNOTES**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: WHAT IS YOUR CURRENT PAGE LAYOUT?

The top margin value should be typed first followed by a space, then the bottom margin value followed by a space, then the paper size value. If you do not enter any characters and just ACCPT, the system will assume the standard (default) values of top margin 6, bottom margin 6, and paper size 66. For this exercise you will use the standard values.

Step 3	**TOUCH**	the ACCPT key.
	Result	The Command Line displays the message: ENTER SYMBOL(S) WHICH PRECEDE(S) FOOTNOTE REFERENCE:

In the next two steps, you'll type in the the unique symbol(s) you selected to precede and follow your footnote references. In the practice exercise, a CODE + Index was used as the preceding symbol and an Index was used as the following symbol.

Step 4 **TYPE** a CODE + Index.

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER SYMBOL(S) WHICH FOLLOW(S) FOOTNOTE REFERENCE.

Step 5 **TYPE** an Index.

TOUCH the ACCPT key.

Result The Command Line displays the message: SEARCHING FOR "(symbol for CODE + Index)••(symbol for Index)" OKAY? -- YES/NO.

This message gives you the opportunity to verify that you entered the correct symbols. Look closely at the screen to be sure you entered the correct symbols. If you do need to make a correction, touch STOP and the messages regarding entering symbols will redisplay on the screen. Make the necessary corrections, if any.

Step 6 **TOUCH** the ACCPT key when you are sure the correct symbols have been entered.

Result The Command Line displays the message: ACCPT = ATTENDED STOP = UNATTENDED

Remember, ATTENDED means that whenever a footnote requires splitting or moving, the program will ask the operator for a decision. UNATTENDED means that the program will manipulate all footnotes with no operator interface. For this exercise you will run the program attended.

Step 7 **TOUCH** the ACCPT key.

Result The Command Line displays the message: DISPLAY OFF?

When running the program attended, the display should be kept on the screen.

Step 8 **TOUCH** the STOP key.

Result The Command Line displays the message: ENTER TITLE OF FOOTNOTE DOC:

You need to type in the title of your source document. If you make an error in typing or the source document is not on your disc, the Command Line will display the message: "TITLE" NOT ON DISC -- ACCPT TO CONTINUE. Touching ACCPT will give you another opportunity to enter the correct title; the Command Line will display RE-ENTER TITLE OF FOOTNOTE DOC: " ". If you do not wish to continue, touch STOP to exit from the program.

Step 9 **TYPE** SOURCE

TOUCH the ACCPT key.

Result The destination document is removed from the screen, the program calculates the length of each individual footnote. Then the destination document is returned to the screen and the insertion process is started.

The program then inserts the footnotes into the destination document on a page-by-page basis. Footnotes 1 through 4 will be inserted. When the program reaches Footnote 5, the Command Line displays the message: "5" OF "17" LINES OF FOOTNOTE "5" WILL FIT -- OK? YES/NO.

TOUCH the ACCPT key.

Result The system counts the first 5 lines of footnote 5 and inserts them on page 2. The remainder of the lines are moved to the next page and the words **Footnote Continued** are inserted just above the divider line.

The program continues to insert footnotes 6 through 8. When the program reaches footnote 9, the message 4 OF 5 LINES OF FOOTNOTE 9 WILL FIT -- OK? YES/NO is displayed.

TOUCH the STOP key.

Result The Command Line displays the message: SPLIT FOOTNOTE 9? YES/NO

TOUCH the STOP key.

Result The Command Line displays the message: MOVE FOOTNOTE 9? YES/NO

TOUCH the ACCPT key.

Result The program moves footnote 9 and the line in the destination document containing footnote reference 9 to the next page.

NOTE: If you answer NO to the MOVE FOOTNOTE "#"? message, the Command Line will display the message: MUST CHOOSE ONE OF THE OPTIONS -- ACCPT TO CONTINUE. To continue the program operation, you must touch ACCPT. The program will then redisplay the sequence of messages regarding entering the desired number of lines and moving the entire footnote. You must choose one of the options for the program to continue running.

The program continues to insert footnotes 10-14. When it reaches footnote 15, the Command Line will display the message: 2 OF 6 LINES OF FOOTNOTE 15 WILL FIT -- OK? YES/NO.

TOUCH the STOP key.

Result The Command Line displays the message: SPLIT FOOTNOTE 15? YES/NO.

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER DESIRED # OF LINES OF FOOTNOTE 15: " ".

TYPE the number 3.

TOUCH the ACCPT key.

Result The system counts the first 3 lines of footnote 15 and inserts them on page 8. The remainder of the lines are moved to the next page and the words **Footnote Continued** are inserted just above the divider line. **NOTE:** It is important to keep your page length in mind when making decisions regarding splitting footnotes.

The program then inserts footnotes 16 and 17, and the Command Line displays the message: RECOVERING DISC SPACE --PLEASE WAIT. Once this is accomplished, the source document is cleared from the Active List and the Comand Line displays the message ENTER NEW TITLE FOR COMPLETED DOCUMENT " "

If you enter a title that is already on your disc, the message (Title) ALREADY ON DISC--ARE YOU SURE? will display. Accepting this message will cause the new document to be stored over the original document. It is recommended that you give the revised document a new title so that the original version will be available for future editing. Stopping out of this message will display ENTER TITLE FOR NEW COMPLETED DOCUMENT: " " again. You can then enter the correct title.

Step 10 **TYPE** ATTENDED as the title for this document.

TOUCH the ACCPT key.

Result The program stores the document under the new title and the Activity Page is returned to the screen.

To run the program unattended:

(If you do not want to practice running the program unattended, go on to **Deleting Footnotes.**)

Step 1	**RECALL**	the practice document DESTINATION to the screen.
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#FOOTNOTES**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: WHAT IS YOUR CURRENT PAGE LAYOUT?
Step 3	**TOUCH**	the ACCPT key.
	Result	The Command Line displays the message: ENTER SYMBOL(S) WHICH PRECEDE(S) FOOTNOTE REFERENCE:
Step 4	**TYPE**	a CODE + Index.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER SYMBOL(S) WHICH FOLLOW(S) FOOTNOTE REFERENCE.
Step 5	**TYPE**	an Index.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: SEARCHING FOR "(symbol for CODE + Index)··(symbol for Index)" OKAY? -- YES/NO.
Step 6	**TOUCH**	the ACCPT key when you are sure the correct symbols have been entered.
	Result	The Command Line displays the message: ACCPT = ATTENDED STOP = UNATTENDED

Remember, UNATTENDED means that the program will manipulate all footnotes with no operator interface.

Step 7 **TOUCH** the STOP key to select the unattended mode.

Result The Command Line displays the message: SPLIT ALL FOOTNOTES? YES/NO

At this point you are being asked if you want the 860 to split all footnotes that will not fit completely on their respective referenced pages. The system will split the footnotes strictly according to the number of lines left available on that page with the remainder carried over to the next page (under a Footnotes continued message). For this exercise answer no to indicate you do not want the footnotes split.

Step 8 **TOUCH** the STOP key.

Result The Command Line displays the message: MOVE ALL FOOTNOTES? YES/NO

As you did not choose to have the footnotes split, the program is now asking if you want all footnotes that won't fit on the page with their references moved completely to the next page. The line in your destination document containing the particular footnote reference will also be moved to the next page. Answer yes here to have footnotes moved.

Note: You must make a decision either to have the footnotes split or moved. If you do not accept the MOVE ALL FOOTNOTES message, the message: MUST CHOOSE ATTENDED OR UNATTENDED -- ACCPT TO CONTINUE will be displayed. Touch ACCPT to bring the SPLIT and MOVE messages to the screen again and choose one of these options.

Step 9 **TOUCH** the ACCPT key.

Result The Command Line displays the message: DISPLAY OFF?

If you touch ACCPT, the document will be removed from the screen while the program runs.

Step 10 **TOUCH** the ACCPT key.

Result The Command Line displays the message: ENTER TITLE OF FOOTNOTE DOC:

Step 11 **TYPE** SOURCE (the title of your source document).

TOUCH the ACCPT key.

Result The document is removed from the screen while the program runs. You will notice various changes of the document title and page numbers in the Command Line while the merge operation is being performed.

When the footnotes have been inserted, the Command Line will display the message: RECOVERING DISC SPACE -- PLEASE WAIT. Once this is accomplished, the source document is cleared from the Active List and the Comand Line displays the message ENTER NEW TITLE FOR COMPLETED DOCUMENT " "

Step 12 **TYPE** UNATTENDED as the title for this document.

TOUCH the ACCPT key.

Result The program stores the document under the new title and the Activity Page is returned to the screen.

Deleting Footnotes

The #DELETE FOOTNOTES program has been designed to help you in editing your source and destination documents. If you need to delete footnotes references from your destination document, this program will allow you to delete the footnote in the source document at the same time.

The program will ask you to type in the unique characters/codes surrounding your footnote references and the title of your source document. To practice deleting footnotes continue with the following exercise:

Step 1	**RECALL**	the document titled DESTINATION to the screen.
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#DELETE FOOTNOTES**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ENTER SYMBOL(S) WHICH PRECEDE(S) FOOTNOTE REFERENCE:
Step 3	**TYPE**	a CODE + Index.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER SYMBOL(S) WHICH FOLLOW(S) FOOTNOTE REFERENCE.
Step 4	**TYPE**	an Index.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: SEARCHING FOR "(symbol for CODE + Index)··(symbol for Index)" OKAY? YES/NO.
Step 5	**TOUCH**	the ACCPT key when you are sure the correct symbols have been entered.
	Result	The Command Line displays the message: ENTER TITLE OF FOOTNOTE DOC: " "
Step 6	**TYPE**	SOURCE (the title of your source document)
	Result	The program begins to search the destination document for footnote references. When the first footnote reference is found, the Command Line will display the message: DELETE FOOTNOTE REFERENCE "1"? YES/NO.

If this footnote is to be deleted, answer yes by touching ACCPT. The program then deletes the footnote reference from the destination document and the corresponding footnote page in the source document. If this footnote is not to be deleted, answer no by touching STOP and the program searches to the next footnote reference in your destination document. The program continues in this manner through all the footnote references in your destination document.

To continue with this practice exercise you will delete footnote reference numbers 8 and 12 from your destination document.

Step 7 **TOUCH** the STOP key.

Result The Command Line displays the message: DELETE FOOTNOTE REFERENCE "2"? YES/NO

Continue touching STOP in response to the DELETE FOOTNOTE messages until footnote reference number 8 appears in the Command Line.

Step 8 **TOUCH** the ACCPT key.

Result The program deletes the footnote reference number and surrounding symbols and searches to the actual footnote in the source document. The page containing the footnote is deleted, and the destination document is returned to the screen. The program continues with the DELETE FOOTNOTE messages.

Step 9 **TOUCH** the STOP key in response to the DELETE FOOTNOTE messages for footnote reference numbers 9 through 11.

Result The Command Line displays the message: DELETE FOOTNOTE REFERENCE "12"? YES/NO.

TOUCH the ACCPT key.

Result Same as Step 8.

Step 10 **TOUCH** the STOP key in response to the DELETE FOOTNOTE messages for footnote reference numbers 13 through 17.

Result The Command Line displays the message: FOOTNOTE DELETION COMPLETED -- RENUMBER? YES/NO.

At this point you can choose to have the footnote reference numbers in your source and destination documents automatically renumbered. By touching ACCPT the #RENUMBER FOOTNOTES program will start running. For this exercise, you will answer no. The footnote references will be renumbered in the next exercise.

Step 11 **TOUCH** the STOP key.

Result The Command Line displays the message: ENTER NEW TITLE FOR REVISED SOURCE DOCUMENT: " "

You can give the revised source document a new title if you need to save both versions or you can store the revised source document over the original by not typing a new title and touching ACCPT.

Step 12 **TOUCH** the ACCPT key.

Result The revised source document is stored over the original and the Command Line displays the message: ENTER NEW TITLE FOR REVISED DESTINATION DOCUMENT: " "

You can give the revised destination document a new title if you need to save both versions or you can store the revised destination document over the original by not typing a new title and touching ACCPT.

Step 13 **TOUCH** the ACCPT key.

Result The revised destination document is stored over the original and the program is completed.

Renumbering Footnotes

Prior to running this program you will have edited your source and destination documents, either manually or by use of the deleting footnotes program, and you now need to renumber the footnote reference numbers. This program will help you by automatically renumbering the footnote reference numbers in both the destination document and the source document. If you made the edits manually, you should check to be sure that the order of the footnotes in your source document matches the order of the footnote reference numbers in the destination document.

The program will ask you to type in the unique characters/codes surrounding your footnote references and the title of your source document. To practice renumbering footnotes continue with the following exercise:

Step 1	**RECALL**	the document titled DESTINATION to the screen.
Step 2	**TOUCH**	the PROGRAM key.
	TYPE	**#RENUMBER FOOTNOTES**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ENTER SYMBOL(S) WHICH PRECEDE(S) FOOTNOTE REFERENCE:

In the next two steps, you'll type in the the unique symbol(s) you selected to precede and follow your footnote references. In the practice exercise, a CODE + Index was used as the preceding symbol and an Index was used as the following symbol.

Step 3	**TYPE**	a CODE + Index.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER SYMBOL(S) WHICH FOLLOW(S) FOOTNOTE REFERENCE.
Step 4	**TYPE**	an Index.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: SEARCHING FOR "(symbol for CODE + Index)··(symbol for Index)" OKAY? YES/NO.
Step 5	**TOUCH**	the ACCPT key when you are sure the correct symbols have been entered.
	Result	The Command Line displays the message: ENTER TITLE OF FOOTNOTE DOC: " "
Step 6	**TYPE**	SOURCE (the title of your source document)

Result — The Command Line displays the message: ENTER # WITH WHICH TO BEGIN RENUMBERING: " "

If your first deletion involved the first footnote reference number, you would type a "1" here. As the first footnote reference number that you deleted was number 8, type in an "8".

Step 7 **TYPE** the number 8

TOUCH the ACCPT key.

Result — DISPLAY OFF? YES/NO is displayed.

TOUCH the ACCPT key.

Result — The program searches to the eighth footnote reference in your source document and starts the renumbering process from that point.

When all the footnote references in the destination document have been renumbered, the program then renumbers the corresponding footnote references in the source document.

When the renumbering of the footnote references in the source document is completed, the Command Line displays the message: ENTER NEW TITLE FOR REVISED SOURCE DOCUMENT: " "

You can give the revised source document a new title if you need to save both versions or you can store the revised source document over the original by not typing a new title and touching ACCPT.

Step 8 **TOUCH** the ACCPT key.

Result — The revised source document is stored over the original and the Command Line displays the message: ENTER NEW TITLE FOR REVISED DESTINATION DOCUMENT: " "

You can give the revised destination document a new title if you need to save both versions or you can store the revised destination document over the original by not typing a new title and touching ACCPT.

Step 9 **TOUCH** the ACCPT key.

Result — The revised destination document is stored over the original and the program is completed.

Creating Custom Enter Footnotes Program

The Enter Footnotes program allows you to type the footnote text in the source document immediately after typing the footnote reference in the destination document. The Enter Footnotes program is used to create a custom program that automatically enters your unique character string and the number sign (**#**) as the footnote reference in both the destination and source documents.

The custom program can then be used anytime you are creating a source document using the same format for your footnotes.

To **create** and **store** the Custom Program:

Step 1	**TITLE**	a new document **#F** and bring it to the Active List.
	TOUCH	the PROGRAM key.
	TYPE	**#ENTER FOOTNOTES**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly displays the software level, then displays the message: ENTER TITLE FOR CUSTOM PROGRAM.
Step 2	**TYPE**	#F
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level, then displays the message: ENTER SYMBOL(S) TO PRECEDE FOOTNOTE REFERENCE:

In the next two steps, you'll type in the the unique symbol(s) you selected to precede and follow your footnote references. For this exercise use two CODE + Indexes as the preceding and two Indexes as the following unique characters to surround your footnote references.

Step 3	**TYPE**	two CODE + Indexes
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTER SYMBOL(S) TO FOLLOW FOOTNOTE REFERENCE.
Step 4	**TYPE**	two Indexes.
	TOUCH	the ACCPT key.
	Result	The Command Line displays the message: ENTERING "(symbol for two CODE + Indexes) # (symbol for two Indexes)" OKAY? YES/NO.

Step 5 **TOUCH** the ACCPT key when you are sure the correct symbols have been entered.

Result The Command Line displays the message: CREATING #F -- PLEASE WAIT.

The system creates the custom program, verifies it, and stores it as a **PM** type document and removes the WP version of the document from the Active List. If there are any other documents on your Active List at this time, the last document on that list will be brought to the screen. To avoid this, clear the Active List before creating your custom program.

Using the Custom Program

In this exercise you will use the custom program #F to assist you in creating a new source document and a new destination document for footnotes. The custom program can also be used to assist you in adding material to existing destination and source documents. The document titled **ENTER** on your Footnotes Program Disc contains the text you will use to create your destination and source documents in this exercise. You will need to print out a copy of this document.

Step 1 **PRINT** a copy of ENTER.

In the next two steps, you will set up the formats for both your destination and source documents.

Step 2 **TITLE** a new document CONSUMER and bring it to the screen.

SET the following format:
- Margins **15** and **70**
- Line spacing at 2
- ACCPT

TOUCH the STORE key to move the document to the Active List.

TOUCH the STOP key to remove the STORE DOCUMENT message.

Step 3 **TITLE** a new document NOTES and bring it to the screen.

SET the following format:
- Margins **20** and **65**
- Tab **23**
- Line spacing at 1
- ACCPT

TOUCH the STORE key to move the document to the Active List.

TOUCH the STOP key to remove the STORE DOCUMENT message.

When using a custom program to assist you in typing footnote documents, it is very important that the destination document appear before the source document on the Active List. Look at the screen to be sure CONSUMER appears before NOTES on the Active List.

Step 4 **HIGHLIGHT** the document CONSUMER on the Active List and bring it to the screen.

TOUCH CODE + ACCPT to return the next character mark to the screen and begin typing your destination document from the copy of the draft document titled **ENTER** you printed in Step 1.

CONTINUE typing until you reach the occurrence of the first footnote reference (marked by an **F** in the draft document).

Step 5 **TOUCH** the PROGRAM key.

TYPE the title of your custom program (#F)

TOUCH the ACCPT key.

Result The program inserts two CODE + Indexes, **#**, and two Indexes in your destination document, removes the destination document from the screen, recalls the source document to the screen, then inserts the same characters to start the first footnote page in your source document.

The draft document has the footnote text included immediately following the paragraph containing the footnote reference to make it easier to type.

Step 6 **TYPE** the first footnote. Note the footnotes are indented on the first line so you need to type an upper tab as the first character. Remember to end each footnote with a carrier return.

TOUCH the ACCPT key when you have finished typing the first footnote.

Result The source document is stored and the destination document is returned to the screen ready for you to continue typing your text.

Step 7 **CONTINUE** typing your text document until the next footnote reference occurs.

TOUCH the PROGRAM key.

As the title for your custom program is still in the Command Line it is not necessary to retype it at this point.

TOUCH the ACCPT key.

Result The program inserts two CODE + Indexes, #, and two Indexes in your destination document, removes the destination document from the screen, recalls the source document to the screen, then inserts the same characters to start the second footnote page in your source document.

Continue typing your documents in this manner, calling up the custom program when necessary. When all source and destination document text has been typed,

STORE your documents.

The Enter Footnotes program has entered a number sign (#) in both the source and destination documents as the footnote reference symbol. You will need to run the Renumber Footnotes program to sequentially number your footnote reference numbers in both documents.

Step 8 **RUN** the #RENUMBER FOOTNOTES program on your documents.

APPENDIX

Information on Footnote Referencing

Almost every work that is neither fiction nor an account based on personal experiences relies in part on secondary sources (other publications on the same or related subjects) or primary sources (manuscript collections, archives, contemporary accounts, and so on). A direct quotation from any of these must be identified in a footnote (or in a reference to the bibliographical listing). If the quotation comes from a printed source, the original page number(s) must be included in the footnote. Ideas and interpretations attributed to, or facts discovered by, another writer should also be documented.

According to A Manual of Style, The University of Chicago Press, Footnote numbers should be typed slightly above the line in the text and should not be enclosed in parentheses or followed by periods or slash marks. Footnote numbers should **follow** any punctuation marks (except a dash). Wherever possible a footnote number should come at the end of a sentence, or at least at the end of a clause. Numbers set between subject and verb or between other related words in a sentence are distracting to the reader.

Footnotes should be numbered consecutively, beginning with 1, throughout a chapter of a book or an article in a journal. It is far more practical than the old-fashioned system of beginning with 1 on each page.

Each note begins with a paragraph indentation and ends with a period, whether or not it is a complete sentence. The note number should be typed on the line and followed by a period. It used to be common practice to set the number preceding each footnote as a superior number. Modern practice increasingly tends toward setting the number on the line, in the same type size as the footnote. Numbers set on the line are also easier to read.

Footnotes to tables, charts, graphs, or other illustrative material are not numbered with the text footnotes. Symbols or letters, sometimes numbers, indicate notes to such material, and the notes are printed below the table not at the foot of the text page.

When a table consists entirely or partly of figures, it is better to use letters or symbols. One commonly used series is: * (asterisk or star), † (dagger), ‡ (double dagger), § (section mark), ‖ (parallels), # (number sign). When more symbols are needed, these may be doubled and tripled in the same sequence.

APPENDIX

Table Using Footnote Symbols

PURINE AND PYRIMIDINE SUBSTRATES OF

THIOPURINE TRANSMETHYLASE

Purine	Methylation Product	Pyrimidine	Methylation Product
6-SH, 2-NH_2, 7-CH_3	7.34	2-SH, 4-OH, 6-NH_2*	2.16
6-SH, 7-CH_3	6.82	2-SH, 4-OH*,≠	1.51
6-SH*,≠	3.98	2-SH, 4-OH, 5-CH_3 ≠	1.16
6-SH, 2-NH_2*,≠	2.75≠	2,4-$(SH)_2$	0.79
6-SH, 2-OH	1.36	2-SH, 4,6-$(OH)_2$	0.69
6-SH, 2,8-$(OH)_2$≠	(+) §	2-SH, 4,6-$(NH_2)_2$*	0.47
		2,4-$(SH)_2$, 5-CH_3	0.31
2-SH	5.28	2-SH, 4-NH_2	0.25
2-SH, 6-OH*	4.80	2-SH, 4-NH_2, 5-CH_3	0.10
2-SH, 6-CH_3	4.59		

* Authentic samples were employed to verify the synthesis of the corresponding methylthio derivative.

≠ Reaction products of C^{14}- and S^{35}-labeled bases have been isolated and identified.

≠ Due to poor solubility of the substrate, only minimum values were obtained.

§ Previously shown to be a substrate (14) but not assayed in this series.

SCREEN MATH

PROGRAM NAME: #SCREEN MATH

With the Screen Math program, you can add, subtract, multiply, and divide.

The program provides you with two ways to perform math.

- You can use this program on numbers within a document by highlighting the numbers.
- You can use this program like a "Command Line calculator" and type the numbers directly into the Command Line.

Limitations of the Program

When you use the math program, the System Disc must be in the system.

The total number of characters in an answer cannot exceed 16. You can highlight and enter numbers from any point in your document as long as the number of characters in your answer will not exceed 16 (including dollar signs, commas, etc.). For example: 4444333322221111 or 5,444,333,222.11 would be acceptable answers.

Document Set-up

No special document set-up is necessary to use Screen Math.

Using the Screen Math Program

- When you use Screen Math, it assumes you want a decimal point (with two places to the right) and commas in your answers. If you don't want them, you must change the options. You can also tell the 860 to include dollar signs in your answers.
- You select numbers for math in two ways: 1) Highlight a number and touch ACCPT or the space bar, or, 2) type the number into the Command Line and touch ACCPT.
- After you have selected a number for math, you indicate which math function is to be performed on that number:
  - To add you type a plus (+) sign.
  - To subtract you type a hyphen (-).
  - To multiply you type an x (lower case or upper case).
  - To divide you type a slash (/).
  - To obtain your answer you type an equal (=) sign.
- Touching the MARK key will allow you to use **one** math function continuously.
- As you use the math program, subtotals will appear in the Command Line.

In the following exercises, you'll create documents and practice using the Screen Math program.

If you should recall the Screen Math program and then decide you don't want to use it, you can use one of the following methods:

1. If #SCREEN MATH was selected in error:

   - Touch the STOP key in response to the ALTER MATH OPTIONS? message.
   - Highlight the first word on the page, touch ACCPT, type an equal sign, touch ACCPT again.
   - Touch the STOP key in response to the TOTAL = " " PLACE IT WHERE? message.
   - Touch the STOP key in response to the ACCPT TO CONTINUE OR STOP TO EXIT message.

2. If you are in the middle of a calculation and the function selections are visible in the Command Line:

   - Type an equal sign.
   - Touch the STOP key in response to the TOTAL = " " PLACE IT WHERE? message.
   - Touch the STOP key in response to the ACCPT TO CONTINUE OR STOP TO EXIT message.

3. If you are in the middle of a calculation and have a number highlighted:

   - Touch the ACCPT key
   - Type an equal sign
   - Touch the ACCPT key
   - Touch the STOP key in response to the TOTAL = " " PLACE IT WHERE? message.
   - Touch the STOP key in response to the ACCPT TO CONTINUE OR STOP TO EXIT message.

Using Screen Math on Numbers within Documents

In this exercise you'll type the document shown below, then use Screen Math to add up the numbers and put the answer in the document.

> During the last census the following population figures were established: Glendon - 4,356; Easton - 988; Willowston - 10,322; Mayberry - 9,238; and Eagle Bay - 854.
>
> The population total for the county is . The average village/township population (population total divided by number of towns) is 000

Step 1 **TYPE** **POPULATION** for a title and touch ACCPT three times.

SET margins at 20 and 80.

Step 2	**TYPE**	the document shown on the previous page.
Step 3	**STORE**	the document.

Now you'll use the Screen Math program to find the population total for the county and the average population.

Step 1	**RECALL**	the document POPULATION to the screen.
	TOUCH	the PROGRAM key.
	TYPE	**#SCREEN MATH**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level and then displays the message: ALTER MATH OPTIONS?

The program is asking if you want to change the "standard" math options of decimal points and commas in your answers. Since no decimal places are needed in the document, you will alter the options. The program will then ask you if you want dollar signs, decimals and commas.

Step 2	**TOUCH**	the ACCPT key.
	Result	The Command Line displays the message: OUTPUT DOLLAR SIGNS?

Your answers do not require dollar signs.

	TOUCH	the STOP key to answer "no."
	Result	The Command Line displays the message: DECIMALS?

No decimal places are needed in this document.

	TOUCH	the STOP key.
	Result	The Command Line displays the message: COMMAS?

The population figures need commas.

	TOUCH	the ACCPT key to answer "yes."
	Result	The Command Line displays the message: TYPE OR HIGHLIGHT NUMBER

Now you're ready to highlight the first number for math.

Step 3 **HIGHLIGHT** the population figure for Glendon (**4,356**), using the LINE and WORD keys.

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 4,356 + - x /

At this point you need to type in the sign for the math function you want to perform. You want to add the numbers, so you will type a plus (+) sign. (Be sure to use the SHIFT key.)

TYPE a plus (+) sign to add.

Result The Command Line displays the message: 4,356 + (WHAT?)

Step 4 **HIGHLIGHT** the population figure for Easton (**988**)

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 5,344 + - x / =

Notice that your current sub-total is shown (5,344) and that an equal sign has been added to the math function choices.

TYPE a plus (+) sign.

Result The Command Line displays the message: 5,344 + (WHAT?)

Step 5 **HIGHLIGHT** the population figure for Willowston (**10,322**).

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 15,666 + - x / =
(15,666 is the current sub-total)

TYPE a plus (+) sign.

Result The Command Line displays the message: 15,666 + (WHAT?)

Step 6 **HIGHLIGHT** the population figure for Mayberry (**9,238**).

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 24,904 + - x / =

TYPE a plus (+) sign.

Result The Command Line displays the message: 24,904 + (WHAT?)

Step 7 **HIGHLIGHT** the population figure for Eagle Bay (**854**).

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 25,758 + - x / =

You are done adding up the populations, so you will type an equal sign to get the answer.

Step 8 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 25,758 . . . PLACE IT WHERE?

Now you can highlight the position where the answer should go. You want the answer to appear at the end of the first sentence in the second paragraph in front of the period, so you will use the text keys to highlight the period. Touching the ACCPT key will place the answer in front of the highlighted position on the screen.

Step 9 **HIGHLIGHT** the period at the end of the first sentence in the second paragraph.

TOUCH the ACCPT key.

Result The number 25,758 appears as the population total for the county and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

Step 10 **TOUCH** the ACCPT key.

Result The Command Line displays the message: TYPE OR HIGHLIGHT NUMBER

You will use the population total number to find an average population.

Step 11 **HIGHLIGHT** the number **25,758**

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 25,758 + - x /

To obtain the average population, you divide the population total by the number of towns (five), so you'll type a slash (/).

Step 12 **TYPE** a slash (/) to divide.

Result The Command Line displays the message: 25,758 / (BY WHAT?)

TYPE the number **5**

Result The (BY WHAT?) in the Command Line is replaced by 5

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 5,152 + - x / =

You now type an equal sign to indicate you want the answer.

Step 13 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 5,152 . . . PLACE IT WHERE?

You can replace a total by highlighting the number and touching the RPLCE key. This answer should replace the zeros at the end of the second paragraph.

Step 14 **HIGHLIGHT** the zeros at the end of the second sentence in the second paragraph.

TOUCH the RPLCE key.

Result The number 5,152 appears as the average population total for the county and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

Step 15 **TOUCH** the STOP key to tell the 860 you have finished.

Result The message is cleared from the Command Line and the program is completed. Your document remains on the screen.

STORE the document under a new title.

When you are going to perform the same math function (such as adding) more than one time, you can use the MARK key to make the function continuous. Then you simply highlight the numbers and touch ACCPT without typing a plus sign each time.

Step 1 **RECALL** the document POPULATION to the screen.

TOUCH the PROGRAM key.

TYPE **#SCREEN MATH**

Result The Command Line briefly shows the software level and then displays the message: ALTER MATH OPTIONS?

Step 2 **TOUCH** the ACCPT key to change the standard options.

Result The Command Line displays: OUTPUT DOLLAR SIGNS?

TOUCH the STOP key as your document doesn't need dollar signs.

Result The Command Line displays the message: DECIMALS?

TOUCH the STOP key as your document doesn't need decimals.

Result The Command Line displays the message: COMMAS?

Step 3 **TOUCH** the ACCPT key.

Result The Command Line displays the message: TYPE OR HIGHLIGHT NUMBER.

Step 4 **HIGHLIGHT** the population figure for Glendon (**4,356**).

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 4,356; + - x /

You'll be adding several numbers, so you'll touch the MARK key before typing the plus sign.

Step 5 **TOUCH** the MARK key.

Result The Command Line displays the message: SELECT CONTINUOUS FUNCTION + - x /

TYPE a plus (+) sign to add.

Result The Command Line displays the message: 4,356 + (WHAT?)

You can now continue highlighting the numbers you wish to add up.

Step 6 **HIGHLIGHT** the population figure for Easton (988)

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 5,344 + (WHAT?)

Step 7 **HIGHLIGHT** the population figure for Willowston (10,322)

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 15,666 + (WHAT?)

Step 8 **HIGHLIGHT** the population figure for Mayberry (9,238)

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 24,904 + (WHAT?)

Step 9 **HIGHLIGHT** the population figure for Eagle Bay (854)

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 25,758 + (WHAT?)

You have finished adding all the numbers. Now you'll type an equal sign, then highlight the position where the answer should go.

Step 10 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 25,758 . . . PLACE IT WHERE?

Step 11 **HIGHLIGHT** the period at the end of the first sentence in the second paragraph. Remember, touching ACCPT will place the answer in front of the highlighted position on the screen.

TOUCH the ACCPT key.

Result The number 25,758 appears as the population total for the county and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

TOUCH the ACCPT key to continue using math.

Result The Command Line displays the message: TYPE OR HIGHLIGHT NUMBER

If you wish, you can calculate the average population on your own. When you've finished, go on to Step 12 below.

Step 12 **TOUCH** the STOP key.

Result The message is cleared from the Command Line and the program is completed. Your document remains on the screen.

STORE the document.

Using Screen Math as a "Command Line Calculator"

There may be occasions when you'd find it convenient to calculate while typing a text document. For example, some legal documents spell out sums of money, percentages, interest, etc. instead of using the actual numbers, as shown in the example below.

> . . . if you borrow Two Thousand One Hundred and Twenty dollars at the current rate of six percent interest, you will have to pay back the principal plus total interest of

Step 1	**TITLE**	a document BANK INTEREST and bring it to the screen.
	SET	margins at 20 and 80.
Step 2	**TYPE**	the first three lines of your document stopping on the space after the word **of.**

Now you will use Screen Math to find the interest to be paid back so you can type it in your document.

Step 3	**TOUCH**	the PROGRAM key.
	TYPE	**#SCREEN MATH**
	Result	The next character mark is replaced with the cursor at the location of the last space you typed.
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level and then displays the message: ALTER MATH OPTIONS?
Step 4	**TOUCH**	the STOP key to indicate no changes are necessary.
	Result	The Command Line displays the message: TYPE OR HIGHLIGHT NUMBER
Step 5	**TYPE**	the number **2,120.00**
	TOUCH	the ACCPT key or space bar.
	Result	The Command Line displays the message: 2,120.00 + - x /

To obtain the interest to be paid you will multiply the amount borrowed by .06.

Step 6 **TYPE** an **x** to multiply.

Result The Command Line displays the message: 2,120.00 x (WHAT?)

TYPE **.06**

Result The (WHAT?) in the Command Line is replaced by .06

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 127.20 + - x / =

Next you'll request your answer by typing an equal sign.

Step 7 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 127.20 . . . PLACE IT WHERE?

Place the answer (in numbers) in your document. After the answer is in your document you can type the words and delete the numerals.

Step 8 **HIGHLIGHT** your answer position by touching WORD.

Result the next character mark returns to the screen.

TOUCH the ACCPT key.

Result the number 127.20 appears in your document and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT.

Your calculations are now completed.

Step 9 **TOUCH** **the STOP key.**

Result The message is cleared from the Command Line and the program is completed. Your document remains on the screen.

TYPE the words One Hundred Twenty-seven dollars and twenty cents in your document.

DELETE the numerals 127.20

Step 10 **STORE** the document.

Optional Practice

The next exercise will give you practice with a more complex document.

SALES ORDER

	LIST PRICE	BUYERS COST PERCENTAGE	TOTAL
Sofa	$ 849.00	.85	$
Library Table	$ 523.00	.90	$
Chair	$ 298.00	.92	$
Sub-total			$
Sales tax (5%)			
Total			$

Step 1 **TITLE** a document SALES ORDER and bring it to the screen.

SET the following format:

- margins at **25** and **75**
- tabs at **43, 51*, 56, 60*, 65,** and **75*.**

Step 2 **TYPE** the exercise table.

Step 3 **STORE** the document.

Now use the Screen Math program to obtain the desired totals.

Step 1 **RECALL** the document SALES ORDER to the screen.

TOUCH the PROGRAM key.

TYPE **#SCREEN MATH**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level and then displays the message: ALTER MATH OPTIONS?

You've already typed the necessary dollar signs on your document, so you do not need to change the options.

Step 2 **TOUCH** the STOP key.

Result The Command Line displays the message: TYPE OR HIGHLIGHT NUMBER

To obtain the buyer cost on the sofa, you will multiply the price by .85.

Step 3 **HIGHLIGHT** **$849.00**, using the LINE and WORD keys.

TOUCH the ACCPT key or space bar.

TYPE **x**

HIGHLIGHT **.85** using WORD.

TOUCH the ACCPT key or space bar.

To put the total in your document, you will type an equal sign and highlight the carrier return at the end of the line.

Step 4 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 721.65 . . . PLACE IT WHERE?

Step 5 **HIGHLIGHT** the carrier return at the end of the **Sofa** line.

TOUCH the ACCPT key.

Result The number **721.65** appears in the TOTALS column and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

TOUCH the ACCPT key.

To obtain the buyer cost on the library table, you'll multiply the price by .90.

Step 6 **HIGHLIGHT** **$523.00**, using the LINE and WORD keys. If you go too far, use RVRSE with text keys to get back to proper number.

TOUCH the ACCPT key or space bar.

TYPE **x**

HIGHLIGHT **.90** using WORD.

TOUCH the ACCPT key or space bar.

Step 7 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 470.70 . . . PLACE IT WHERE?

Step 8 **HIGHLIGHT** the carrier return at the end of the **Library Table** line.

TOUCH the ACCPT key.

Result The number 470.70 appears in the TOTALS column and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

TOUCH the ACCPT key.

Result The Command Line displays the message: TYPE OR HIGHLIGHT NUMBER.

The next calculation should be the buyer cost of the chair.

Step 9 **HIGHLIGHT** **$298.00** by the use of the LINE and WORD keys.

TOUCH the ACCPT key or space bar.

TYPE **x**

HIGHLIGHT **.92** using WORD.

TOUCH the ACCPT key or space bar.

Step 10 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 274.16 . . . PLACE IT WHERE?

Step 11 **HIGHLIGHT** the carrier return at the end of the **Chair** line.

TOUCH the ACCPT key.

Result The number 274.16 appears in the TOTALS column and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

Now you will add up the totals of the three items and place the sub-total in the last column.

Step 12 **TOUCH** the ACCPT key.

HIGHLIGHT the first number in the totals column (**$721.65**)

TOUCH the ACCPT key or space bar.

Result The Command Line displays the message: 721.65 + - x /

At this point you need to type in the correct sign for the math function you want to use. As you know you'll be adding three numbers consecutively, you'll use the MARK key before typing the plus sign.

TOUCH the MARK key.

Result The Command Line displays the message: SELECT CONTINUOUS FUNCTION + - x /

TYPE a plus (+) sign.

Generally you use LINE and WORD to highlight the next number. You can also use CODE + WORD to move the highlighting straight down a column. Continue highlighting the numbers you wish to add up using CODE + WORD.

Step 13 **HIGHLIGHT** the library table cost (**470.70**)

TOUCH the ACCPT key or space bar.

HIGHLIGHT the cost of the chair (**274.16**)

TOUCH the ACCPT key or space bar.

You have sub-totaled all the numbers. To put the answer in your document, you will type an equal sign and highlight the position for the answer.

Step 14 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 1,466.51 . . . PLACE IT WHERE?

Step 15 **HIGHLIGHT** the carrier return at the end of the **Sub-total** line.

TOUCH the ACCPT key.

Result 1,466.51 is placed in the document and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

TOUCH the ACCPT key.

To calculate the amount of sales tax, you will multiply the sub-total by 5%.

Step 16 **HIGHLIGHT** the sub-total just calculated (**$1466.51**)

TOUCH the ACCPT key.

TYPE **x**

TYPE **.05**

TOUCH the ACCPT key or space bar.

Step 17 **TYPE** an equal (=) sign to indicate you want the answer.

Result The Command Line displays the message: TOTAL = 73.33 . . . PLACE IT WHERE?

HIGHLIGHT the the carrier return at the end of the **Sales tax** line.

TOUCH the ACCPT key.

Result The number 73.33 is placed in the document and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

TOUCH the ACCPT key to continue using math.

To obtain your total add the sub-total and sales tax together.

Step 18 **HIGHLIGHT** the sub-total just calculated **1466.51**

TOUCH the ACCPT key or space bar.

TYPE a plus (+) sign.

Step 19 **HIGHLIGHT** the sales tax figure **(73.33)**

TOUCH the ACCPT key or space bar.

You now want the answer for the sub-total and sales tax added together.

Step 20 **TYPE** an equal (=) sign.

Result The Command Line displays the message: TOTAL = 1,539.84 . . . PLACE IT WHERE?

HIGHLIGHT the carrier return at the end of the Total line.

TOUCH the ACCPT key.

Result 1,539.84 is placed in the document and the Command Line displays the message: ACCPT TO CONTINUE OR STOP TO EXIT

Your calculations are now completed.

Step 21 **TOUCH** the STOP key.

Result The message is cleared from the Command Line and the program is completed. Your document remains on the screen.

STORE the document.

TABLE MATH

PROGRAM NAME: #TABLE MATH

This program may be used to add across columns and/or add down columns. It will calculate the totals and any desired subtotals and place them in the document. Subtotals can be either cumulative (running) or non-cumulative (individual).

Limitations of the Program

The System Disc must be in the 860 when using the math program.

The statistical document can have no more than twelve columns. The total number of characters on one line cannot exceed 256 and no column can be wider than 16 digits (including letters, numbers, spaces, codes, etc.). The statistical document must have been stored on disc before the program is run.

Any **bolding, overstrike,** or **underlining** edited into your totals will be deleted when you run the program. They must be put back after running the program. The program will, however, put back the underline used just above the total in the last column when you are replacing horizontal totals.

Document Set-up

Before you can use the Table Math program, you will need to set up your statistical table following certain rules. You will use codes to mark the beginning of the statistical table (where you want the math to begin) and to mark the end of the statistical table (where you want the math to end). Using the codes allows you to mix statistical tables with text material in your document.

The rules are listed below and will be described more fully as you complete the exercises in this training.

- All carrier returns in the statistical table must be non-required. Using special tabs in the format block of the statistical table will make all the carrier returns non-required. If you are not using special tabs for your columns, set one outside the left margin (at 2, for instance).
- Be sure your format block has enough tab settings for the total column if you are using the "adding columns across" portion of this program.
- A CODE + 6 (null code) must be recorded as the first character on the first line of numbers in your statistical table. This tells the program where to begin. A CODE + 6 must also be recorded as the first character on the first line of numbers on **each** page of a multi-page statistical table.
- Do not leave any columns within the table blank. (Do leave the columns blank if they are on a subtotal or total line.) If there is no information for a particular column, it must be filled with a zero, a hyphen, or a CODE + Space.
- Type a CODE + 6 (null code) as the first character in the final total row of your statistical table. This tells the program where to stop. When you are

totaling down, the program will place your answers on this line. The program will allow you to replace the original totals if the table has been edited.

- Type a CODE + 7 (switch code) as the first character on all lines where you want the program to put subtotals. When the program runs, it will place subtotals on those lines. The program gives you a choice of non-cumulative (individual) section subtotals or cumulative (running) subtotals.

- If the first column of the table contains text, you can type the words **Total** or **Subtotal** on the lines where the totals or subtotals will go; however, do not fill in blank columns on these lines.

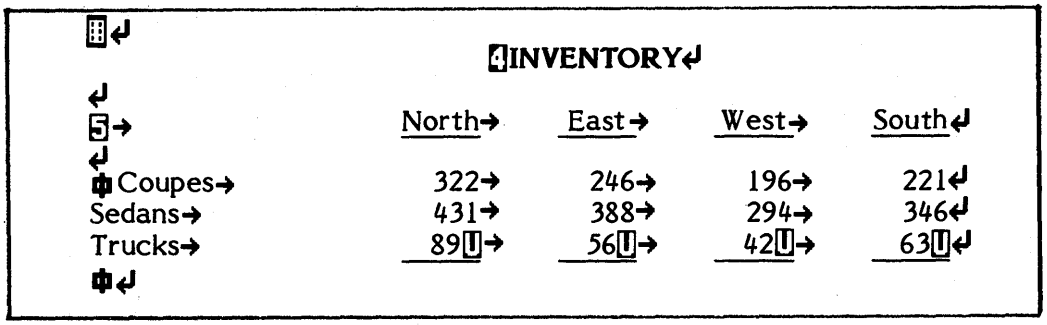
- If the first column contains text, you cannot use tabs to indent text in that column.

- Use only Lower Tabs to tab to the columns of numbers.

In the following exercises you will create three statistical documents and run the program on each one. In addition, there is an optional exercise that shows you how to use negative numbers.

Adding Columns Down

In this exercise you will create a simple statistical table and use the program to add the columns down.



Step 1

TYPE **STAT TABLE A** and touch ACCPT three times.

SET the following Format:

- o margins at **20** and **75**
- o tabs at **40, 45*, 50, 55*, 60, 65*, 70, 75*.**

TOUCH ACCPT and return.

Step 2

TYPE and center the main heading and the column headings.

TOUCH return twice.

Step 3	**TYPE**	CODE + 6 (null code) to indicate the math should begin on this line.
	TYPE	the table. Be sure to use the lower tab key to tab to each column and type a return after the last column entry.
Step 4	**TYPE**	CODE + 6 (null code) to indicate the end of your statistical material. This tells the program where to stop.
	END	the table with a return.
	STORE	the document.

Running the Table Math program is easy. The program will ask you a series of questions to find out whether you want to add down or across and if you want subtotals in your statistical table. It will also ask you if you want dollar signs, decimals, etc. in your answers. These are referred to as options. The standard options are:

No Dollar Signs
Two Decimal Places
Commas in the answer
No Parentheses for negative numbers
No Plus signs to indicate positive numbers.

The program will ask you if you want to change the options. If you answer "yes," the program will go through the options one at a time, allowing you to change any or all of the options. You'll see how this works in the next exercise.

In this exercise, you will add the columns down on the document STAT TABLE A.

Step 1	**RECALL**	the document STAT TABLE A to the screen.
	TOUCH	the PROGRAM key.
	TYPE	**#TABLE MATH**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level and then displays the message: ADD ACROSS?

Since you want to add the columns down, your answer will be "no". Remember, you tell the 860 "no" when you touch the STOP key.

Step 2	**TOUCH**	the STOP key.
	Result	The Command Line displays the message: ADD DOWN?

You do want to add the columns down, so your answer will be "yes".

Step 3 **TOUCH** the ACCPT key.

Result The Command Line displays the message: REPLACE VERTICAL TOTALS?

There are no totals to be replaced. If you did have totals in your document, you would touch ACCPT now so that the old totals would be replaced with new ones.

Step 4 **TOUCH** the STOP key.

Result The Command Line displays the message: ALTER MATH OPTIONS?

The program is asking if you want to change any of the standard options.

Look at your document (STAT TABLE A) to see if you need to change any of the standard options. While most of the standard settings seem appropriate for this table, you will note that decimal points are not used at all in this document. If you do not change the standard option for decimals, your answers will contain a decimal point followed by two zeros.

Step 5 **TOUCH** the ACCPT key to change the options.

Note: even if you only want to change one of the standard settings for the math options you will always go through all of the option settings and make the appropriate response.

Result The Command Line displays the message: OUTPUT DOLLAR SIGNS?

No dollar signs should appear in your answers.

TOUCH the STOP key.

Result The Command Line displays the message: DECIMALS?

No decimal places needed in this statistical table.

TOUCH the STOP key.

Result The Command Line displays the message: COMMAS?

Commas would be appropriate in answers in this table should the totals get high enough to need them.

TOUCH the ACCPT key.

Result The Command Line displays the message: PARENS FOR NEGATIVE NUMBERS?

This statistical material is not using negative numbers, so your answer will be "no".

TOUCH the STOP key.

Result The Command Line displays the message: OUTPUT PLUS SIGN?

No plus (+) signs are needed.

TOUCH the STOP key.

Result The Command Line displays the message: INSERT SUBTOTALS?

No subtotals are being used in this table.

Step 6 **TOUCH** the STOP key.

Result The Command Line displays the message: DO NUMERIC COLUMNS BEGIN AT LEFT MARGIN?

Since the first column contains text, your answer will be "no".

Step 7 **TOUCH** the STOP key.

Result The 860 counts the columns and then begins the addition. When it has finished, the totals will have been placed in the last line and the Command Line will display the message: ADDITION COMPLETE.

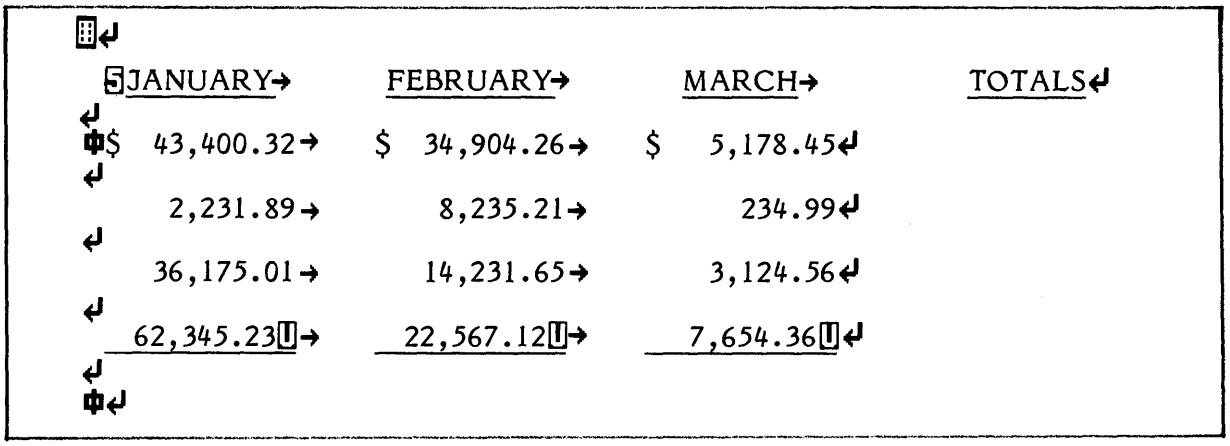
TOUCH the STOP key.

Result The ADDITION COMPLETE message is removed from the Command Line and your document can now be stored.

Step 8 **STORE** the document. If you want to save both versions of the document, store this document under a different title.

Adding Down and Across

In the last exercise you created a very simple statistical table. In this exercise you will type a more complex table and use the program to add both down and across. When you set the format for the table, you will include extra tab settings for the total column that will be added by the program.



Step 1

TYPE **STAT TABLE B** and touch ACCPT three times.

SET the following format:

- margins at **18** and **82**
- tabs at **18, 30*, 35, 47*, 52, 64*, 70,** and **82*.**
  (The tabs at 70 and 82 are for the total column.)

TOUCH ACCPT and return.

Step 2

TYPE and center the column headings.

TOUCH return twice.

Step 3

TYPE CODE + 6 to indicate that the math should begin here.

TYPE the statistical table, using the lower tab key to tab to columns.

END with a return.

TYPE CODE + 6 and return to indicate that this is the end of the table.

Step 4

STORE the document.

Now you will run the program on STAT TABLE B and add the columns down and across.

Step 1 **RECALL** the document STAT TABLE B to the screen.

TOUCH the PROGRAM key.

TYPE **#TABLE MATH**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level and then displays the message: ADD ACROSS?

Step 2 **TOUCH** the ACCPT key to add across.

Result The Command Line displays the message: REPLACE HORIZONTAL TOTALS?

If there were totals already in your document, you would touch ACCPT to tell the 860 to replace the old totals with new ones. Since your document does not have any old totals, you'll touch STOP.

Step 3 **TOUCH** the STOP key.

Result The Command Line displays the message: ADD DOWN?

You also want to add the columns down.

Step 4 **TOUCH** the ACCPT key.

Result The Command Line displays the message: REPLACE VERTICAL TOTALS?

TOUCH the STOP key since there are no totals to be replaced.

Result The Command Line displays the message: ALTER MATH OPTIONS?

In the STAT TABLE B document the only standard math option that will change is the dollar sign. But remember once you tell the 860 you want to change the standard math options, you will need to accept or reject each individual option as it appears in the Command Line.

Step 5 **TOUCH** ACCPT.

Result The Command Line displays the message: OUTPUT DOLLAR SIGNS?

TOUCH the ACCPT key to put dollar signs in your answers.

Result The Command Line displays the message: DECIMALS?

TOUCH the ACCPT key.

Result The Command Line displays the message: ENTER # OF DECIMAL PLACES: " ".

Each answer should have two places to the right of the decimal point, so you will type the number 2.

TYPE the number **2**

TOUCH the ACCPT key.

Result The Command Line displays the message: COMMAS?

Your statistical table has large numbers, so it will need commas to separate the hundreds from the thousands in your answers.

TOUCH the ACCPT key.

Result The Command Line displays the message: PARENS FOR NEGATIVE NUMBERS?

This statistical material does not have negative numbers, so your answer will be "no".

TOUCH the STOP key.

Result The Command Line displays the message: OUTPUT PLUS SIGN?

No plus (+) signs are needed.

TOUCH the STOP key.

Result The Command Line displays the message: INSERT SUBTOTALS?

No subtotals are used in this table.

Step 6 **TOUCH** the STOP key.

Result The Command Line displays the message: DO NUMERIC COLUMNS BEGIN AT LEFT MARGIN?

As the first column in this exercise is numerical, your answer will be "yes".

Step 7 **TOUCH** the ACCPT key.

Result The 860 counts the columns and then begins the addition. You will notice columns are also being subtotaled in the Command Line as the program progresses. When it has finished your column totals will have been placed in the last line, and the Command Line will display the message: ADDITION COMPLETE.

TOUCH the STOP key.

Result The ADDITION COMPLETE message is removed from the Command Line and your document can now be stored.

Step 8 **STORE** the document. If you want to save both versions of the document, store this document under a different title.

Subtotals

In this exercise you will type a statistical table that includes subtotals. You will use the program to put non-cumulative (individual) subtotals and a grand total in the document. Non-cumulative subtotals will add up only the numbers in each section. For instance, when you use non-cumulative subtotals on the table below, the subtotal for April, May, and June will not include the numbers for January, February, and March. If you did want these numbers included, you would use cumulative (running) subtotals.

	Sales	Rentals	Total
Jan	322.46	150.23	400.00
Feb	361.56	232.75	300.00
Mar	180.43	182.39	300.00
Subtotal			
Apr	312.88	247.99	450.00
May	142.53	168.84	350.00
June	202.72	195.33	450.00
Subtotal			
July	185.48	154.69	400.00
Aug	279.73	89.35	350.00
Sept	253.21	161.87	420.00
Subtotal			
Oct	228.50	199.76	550.00
Nov	194.86	42.48	300.00
Dec	128.43	102.95	350.00
Subtotal			
Total			

Step 1 **TYPE** **STAT TABLE C** and touch ACCPT three times.

SET the following format:

- margins at **27** and **73**
- tabs at **40**, **48***, **52**, **60***, **65** and **73***

TOUCH ACCPT and return.

Step 2 **TYPE** and center the column headings.

TOUCH return twice.

Step 3 **TYPE** CODE + 6 to indicate that the math should begin here.

CONTINUE typing the statistical table as illustrated. Be sure to type a CODE + 7 as the first character on the lines for subtotals and type a CODE + 6 as the first character of the total line (indicating the end of the table).

Step 4 **STORE** the document.

Continue with this exercise by running the program on STAT TABLE C to add across, replace horizontal totals, add down, and obtain non-cumulative subtotals.

Step 1 **RECALL** the document STAT TABLE C to the screen.

TOUCH the PROGRAM key.

TYPE **#TABLE MATH**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level and then displays the message: ADD ACROSS?

Step 2 **TOUCH** the ACCPT key to add across.

Result The Command Line displays the message: REPLACE HORIZONTAL TOTALS?

This statistical document has horizontal totals that need to be replaced.

Step 3 **TOUCH** the ACCPT key.

Result The Command Line displays the message: ADD DOWN?

To add the columns down you:

Step 4 **TOUCH** the ACCPT key.

Result The Command Line displays the message: REPLACE VERTICAL TOTALS?

TOUCH the STOP key since there are no totals to be replaced at this time.

Result The Command Line displays the message: ALTER MATH OPTIONS?

This statistical table will not require any change to the standard options.

Step 5 **TOUCH** the STOP key.

Result The Command Line displays the message: INSERT SUBTOTALS?

Since you want the program to calculate subtotals for you, your answer will be "yes".

Step 6 **TOUCH** the ACCPT key.

Result The Command Line displays the message: CUMULATIVE SUBTOTALS?

In this table the subtotals should be individually calculated for each quarter, so this answer should be "no".

Step 7 **TOUCH** the STOP key.

Result The Command Line displays the message: NON-CUMULATIVE SUBTOTALS?

TOUCH the ACCPT key.

Result The Command Line displays the message: DO NUMERIC COLUMNS BEGIN AT LEFT MARGIN?

The first column in your statistical table contains text.

Step 8 **TOUCH** the STOP key.

Result The 860 counts the columns and then begins the addition. You will notice columns are also being subtotaled in the Command Line as the program progresses. When it has finished, the totals and subtotals will be in the document, and the Command Line will display the message: ADDITION COMPLETE.

TOUCH the STOP key.

Result the ADDITION COMPLETE message is removed from the Command Line and your document can now be stored.

Step 9 **STORE** the document. If you want to save both versions of the document, store this document under a different title.

Optional exercise

Using Negative Numbers (subtraction)

You can perform subtraction by using negative numbers in your statistical table. You can use either parentheses or minus signs to indicate negative numbers. The following statistical tables show both methods.

```
⊞↵
                    ◘OPERATING REPORT
↵
↵
  DESCRIPTION→     ⊟YTD ACTUAL→   BUDGET→      VARIANCE↵
↵
⌽CLERICAL SLRY→      -11,102→      10,400↵
EXEMPT SLRY→         -41,929→      43,600↵
OVERTIME→               -103→           0↵
BENEFITS→            -14,878→      15,120↵
CONTRACT LABOR→      -22,988→       5,000↵
↵
⌽↵
```

```
⊞↵
                    ◘OPERATING REPORT
↵
↵
  DESCRIPTION→     ⊟YTD ACTUAL→   BUDGET→      VARIANCE↵
↵
⌽CLERICAL SLRY→      (11,102)→     10,400 ↵
EXEMPT SLRY→         (41,929)→     43,600 ↵
OVERTIME→               (103)→          0↵
BENEFITS→            (14,878)→     15,120↵
CONTRACT LABOR→      (22,988)→      5,000 ↵
↵
⌽↵
```

Step 1 **TYPE** either version of the table using the following format (use STAT TABLE D for a title).

- margins at **20** and **80**
- tabs at **44**, **52***, **58**, **66***, **72**, **80***, and **84**.

Step 2 **TYPE** one of the tables. Be sure to use CODE + 6 at the beginning and end of the statistical material.

STORE the document.

In this exercise, you will "add" across and down on the statistical table. Since there are negative numbers in the table, the program will subtract the negative numbers when it "adds" the table.

The program will recogize a number with a minus sign as a negative number and will put the minus signs in your totals if the totals are negative.

If you use parentheses to indicate negative numbers, you will need to alter the standard options and select PARENS FOR NEGATIVE NUMBERS. When you select this option any negative numbers in your totals will have parentheses even if the negative numbers in your table have minus signs.

If you use parentheses to indicate negative numbers in your table and do not select the PARENS FOR NEGATIVE NUMBERS option, the 860 will not recognize the numbers in parentheses as being negative, so your totals will be incorrect.

You cannot select the OUTPUT DOLLAR SIGNS math option (or type dollar signs in the answer positions on your stat table) when you are using negative numbers. You will need to type in any dollar signs after you are finished using the program.

Step 1	**RECALL**	STAT TABLE D to the screen.
	TOUCH	the PROGRAM key.
	TYPE	**#TABLE MATH**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly shows the software level and then displays the message: ADD ACROSS?
Step 2	**TOUCH**	the ACCPT key to add across.
	Result	The Command Line displays the message: REPLACE HORIZONTAL TOTALS?
	TOUCH	the STOP key since there are no totals to replace.
	Result	The Command Line displays the message: ADD DOWN?
Step 3	**TOUCH**	the ACCPT key to add down.
	Result	The Command Line displays the message: REPLACE VERTICAL TOTALS?
	TOUCH	the STOP key since there are no totals to replace.
	Result	The Command Line displays the message: ALTER MATH OPTIONS?

You need to make changes to the standard options.

Step 4 **TOUCH** the ACCPT key.

Result The Command Line displays the message: OUTPUT DOLLAR SIGNS?

TOUCH the STOP key to indicate no dollar signs.

Result The Command Line displays the message: DECIMALS?

TOUCH the STOP key to indicate no decimals.

Result The Command Line displays the message: COMMAS?

Step 5 **TOUCH** the ACCPT key to put commas in your totals.

Result The Command Line displays the message: PARENS FOR NEGATIVE NUMBERS?

If you used parentheses to indicate negative numbers in your table, you'll answer "yes." If you used minus signs to indicate negative numbers in your table, you'll answer "no."

Step 6 **TOUCH** ACCPT for parentheses, **or** STOP for minus signs.

Result The Command Line displays the message: OUTPUT PLUS SIGN?

A "yes" answer here will tell the 860 you want plus signs in your totals. The program will allow you to use plus signs in your totals in either case (using minus signs or parentheses to indicate your negative numbers). If you do not want to use plus signs, answer "no" by touching STOP and go on Step 8.

Step 7 **TOUCH** the ACCPT key.

Result The Command Line displays the message: PLUS SIGN RIGHT OF NUMBER?

To place the plus signs (and minus signs, if you have them) in front (to the left) of the totals, you'll answer "no". If you answer "yes", the plus signs (and any minus signs) will be positioned at the right side of your totals.

Step 8 **TOUCH** the STOP key.

Result The Command Line displays the message: INSERT SUBTOTALS?

TOUCH the STOP key to indicate no subtotals.

Result The Command Line displays the message: DO NUMERIC COLUMNS BEGIN AT LEFT MARGIN?

Step 9 **TOUCH** the STOP key to tell the 860 that the first column has text in it.

Result The 860 counts the columns and then begins the addition. When it has finished, the Command Line will display the message: ADDITION COMPLETE

Step 10 **TOUCH** the STOP key.

Result The ADDITION COMPLETE message is removed from the Command Line and your document can now be stored.

STORE the document. If you want to save both versions of the document, store this document under a different title.

EQUATION MATH

PROGRAM NAME: #EQUATION MATH
#B:Math

The equation math program provides mathematical capabilities for word processing documents that require repetitive calculations. The equation math program enables you to create a custom program to perform the functions of addition, subtraction, multiplication, and division. The custom program is designed to operate on columns of figures recorded in a unique statistical table set-up; i.e., a specific number of columns with answers placed in predetermined positions. If you use more than one statistical set-up, you will need to create a program for each one.

The custom program is created from a series of equations that define the calculations to be performed on your "unique" table set-up. You will learn how to write these equations so the 860 can use them to create the custom programs you need.

When you create a custom program, the equation math program automatically checks your equations for accuracy and, if necessary, allows you to make any corrections.

When you have created your custom program, you will use that program whenever calculations are required on the document.

Training Materials You Will Need

- Generic Program disc with #EQUATION MATH and #B:Math programs
- Working disc for practice exercises

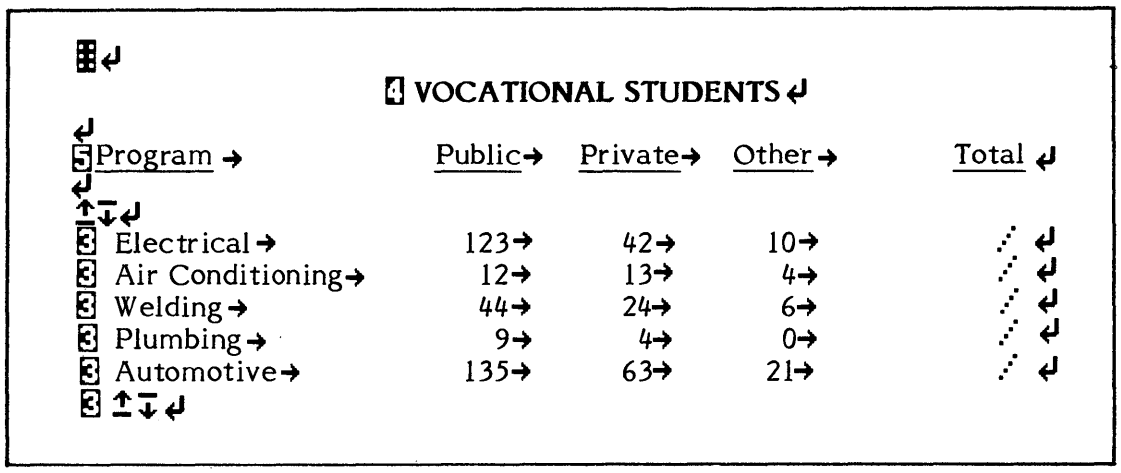
Prerequisites

Before you go through this training, you should have completed the Statistical section of the 860 Operator Manual so you are familiar with the 860 statistical typing features.

Setting up the Statistical Document

In order to use the equation math program, you need to set up your statistical table following certain rules and using special codes. The codes are used to mark where you want the math to begin and where you want the math to end. Another code is used to mark each line that is to have math performed. The rules you must follow will be pointed out in the step-by-step instructions.

In the next exercise, you'll type a short statistical table. After that, you'll use the Equation Math program to create a custom program that will add up the numbers in the table for you.



VOCATIONAL STUDENTS

Program →	Public →	Private →	Other →	Total
Electrical →	123 →	42 →	10 →	
Air Conditioning →	12 →	13 →	4 →	
Welding →	44 →	24 →	6 →	
Plumbing →	9 →	4 →	0 →	
Automotive →	135 →	63 →	21 →	

Step 1 **TITLE** your document **TABLE A** and bring it to the screen.

SET the following format:

- Margins at **20** and **82**
- Tabs at **42, 52, 61,** and **74**
- Special tabs at **46*, 55*, 64*,** and **78***
- Touch ACCPT to record the format

TOUCH return.

Step 2 **TYPE** the centered heading, the column headings, and return once.

The code you use to tell the program where to begin the math is a CODE + Index and an Index. This code must be recorded at the beginning of the statistical part of your document. The Index key is located next to the DEL key and has an arrow (↧) on it.

Step 3 **TYPE** CODE + Index, then Index.

TOUCH return.

There are three simple rules you must follow when typing the statistical part of your document.

(1) Each line that will have math performed must begin with a CODE + 3 (stop code). The CODE + 3 tells the program that math will be used on that line. CODE + 3 displays on your screen as ▣.

(2) You must have a Lower tab in front of any numbers the math program will work with. The program uses the Lower tab to locate columns in your document. The program will not perform math on numbers at the left margin or following an upper tab.

(3) You cannot leave any columns blank. If you do, the math program will not work correctly. In the document on the opposite page, the Total column is where the answers should go. The coded spaces are the positions for the answers; the math program will replace the coded spaces with the answers.

Step 4 **TYPE** the statistical table shown on the opposite page (page 3 - 2).

The end of the table is marked with a CODE + 3, CODE + Index, Index to tell the program where to stop. You put the CODE + 3, CODE + Index, Index on the line after the last line in which math is to be performed.

Step 5 **TYPE** CODE + 3, CODE + Index, and Index to mark the end of the table.

TOUCH return.

Step 6 **USE** CODE + PAGE to highlight the document.

COMPARE your document with the illustration on the previous page to be sure you have codes to mark the beginning and end of the table, Lower tabs only, and CODE + Spaces in the Total column.

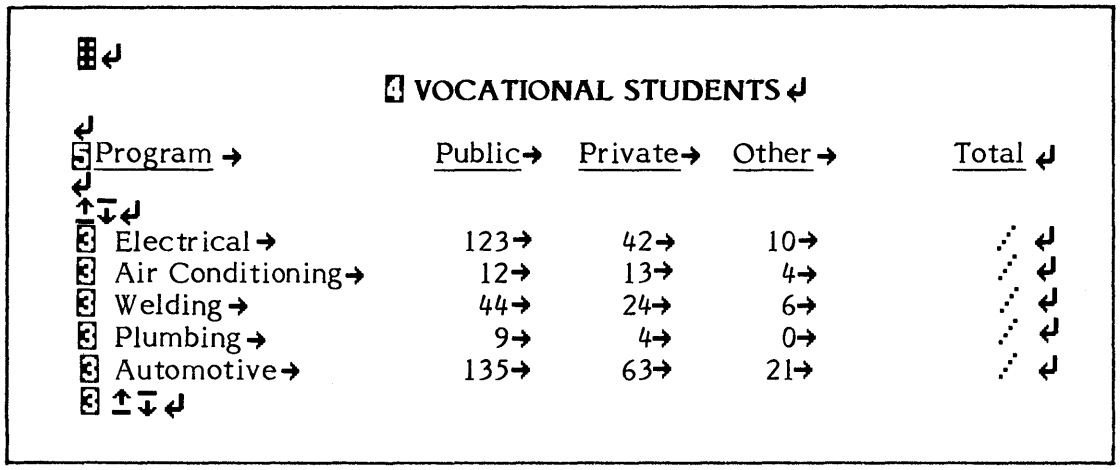
TOUCH STOP to remove the highlighting.

STORE the document.

Step 7 **PRINT** the document. Be sure to select NON STOP in the print options. If you don't select NON STOP, the printer will halt at the stop code at the beginning of every line.

Summary of Rules

Setting up the Statistical Document



4 VOCATIONAL STUDENTS

5 Program →	Public →	Private →	Other →	Total
3 Electrical →	123 →	42 →	10 →	
3 Air Conditioning →	12 →	13 →	4 →	
3 Welding →	44 →	24 →	6 →	
3 Plumbing →	9 →	4 →	0 →	
3 Automotive →	135 →	63 →	21 →	

- The Equation Math program is designed for columns of figures recorded in a statistical format.
- CODE + Index, Index must be recorded at the beginning of the statistical part of your document. This tells the program where math calculations will begin.
- A CODE + 3 (stop code) must be recorded on each line that will be used for math.
- Use the Lower Tab key to tab to the columns of numbers. If the first column contains numbers, not text, then the first column must be preceded by a Lower Tab.
- When you are going to use the math program, every column must contain either a number or a CODE + Space. You cannot leave any columns blank.
- CODE + 3, CODE + Index, Index must be recorded on the line after the last line used for math. This tells the program where to stop.
- Be sure to select NON STOP in the print options when you print a document that has been set up for Equation Math.

Identifying Rows and Columns

To use the Equation Math program, you need to identify the numbers that will be used for math by their position in a "row" or a "column". A "row" is a line of columns across the table. A "column" is a column of numbers going down the table. The illustration below shows rows and columns.

VOCATIONAL STUDENTS

	Program	Public	Private	Other	Total
Row 1	Electrical	123	42	10	
Row 2	Air Conditioning	12	13	4	
Row 3	Welding	44	24	6	
Row 4	Plumbing	9	4	0	
Row 5	Automotive	135	63	21	
		Column 1	Column 2	Column 3	Column 4

Writing Equations

To perform math calculations, you write an equation document that tells the 860 what you want to do and which rows or columns you want to use.

A few of the instructions used in equations are:

S	tells the 860 to Sum (add)
R	tells the 860 which Row to use
C	tells the 860 which Column to use
=	tells the 860 where to put the answer
T	tells the 860 to Total

After you type the equation document, you turn it into a "custom" program by running the #EQUATION MATH program on it. You can then recall your statistical table and run the custom program on it.

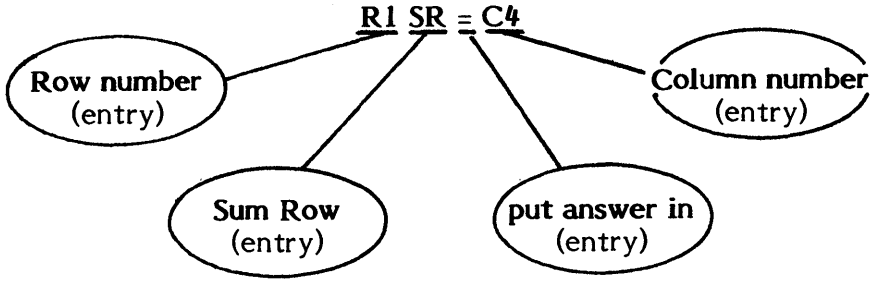
In the next section you'll learn to write equations to add columns across and down, subtract, multiply, and divide. First, you'll learn to write equations that do one type of calculation. Then you'll learn to write an equation document that does several calculations.

Adding Across

In this exercise, you'll write an equation to sum across a row and put the answer in the Total column. In the equation, **R** represents **Row, S** represents **Sum,** = represents **put answer in,** and **C** represents **Column.** An **entry** (**R1** or **SR**) tells the program what to do or where to do it. A space is recorded to separate the entries.

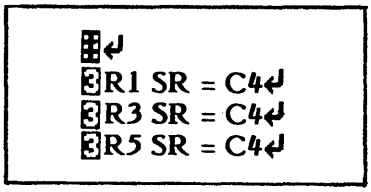
The equation to sum across one row is an **R** followed by the row number, a space, an **SR**, a space, = (equals sign), a space, and a C followed by the column number.

The equation is written as follows:



You'll write equations to add across Rows 1, 3, and 5 in the TABLE A document you typed earlier. You'll write a separate equation to add across each row. Each equation is typed on a separate line, beginning with a CODE + 3 and ending with a return. The three equations will be combined in one equation document.

Follow the steps below to write your first equation document. You'll set a special tab outside the left margin to prevent accidental reformatting of the document.



Step 1 **TITLE** a document **EQ TABLE A** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*).

TOUCH ACCPT to record the format.

TOUCH return once to separate the format block from the equations.

Each equation must be on a line by itself, begin with a CODE + 3 (stop code), and end with a return. No other CODE + 3 should be typed in your equation document. Each entry within an equation must be followed by a space.

Step 2 **TYPE** the first line of your equation document as follows:

- CODE + 3
- **R1** and a space
- **SR** and a space
- = (equals sign) and a space
- **C4** and a return

TYPE the next two lines of the equation document as follows:

- CODE + 3, **R3 SR** = **C4** and a return
- CODE + 3, **R5 SR** = **C4** and a return

Step 3 **HIGHLIGHT** the document and check to be sure a CODE + 3 is at the beginning of each equation line, that you have a space after each entry and that each equation line ends with a return.

TOUCH the STOP key to remove the highlighting.

STORE the document.

Now, use the following steps to turn the equation document into a custom math program.

Step 1 **RECALL** **EQ TABLE A**

TOUCH the PROGRAM key.

TYPE **#EQUATION MATH**

TOUCH ACCPT.

Result The Command Line briefly displays the software level, then displays the message: EQUATION CHECK IN PROGRESS - PLEASE WAIT. The program checks through your equations document for any errors.

If the Command Line displays: EQUATION ERROR "#" / STOP & CORRECT / RUN AGAIN, refer to the **Equation Check** section on page 3 - 42.

When the equation check has been completed, the Command Line displays the message: ENTER TITLE (MAX 20 CHAR) FOR CUSTOM PROGRAM - RETURN.

Step 2	**TYPE**	**#CP TABLE A** for the title of your custom program.
	TOUCH	return.
	Result	The document is removed from the screen and the Command Line displays the message: EQ TABLE A BEING PROCESSED - PLEASE WAIT. When the program finishes creating the custom math program, the Command Line displays the message: CUSTOM PROGRAM #CP TABLE A COMPLETE - TOUCH STOP.
Step 3	**TOUCH**	STOP.
	Result	The custom math program is stored and the Activity Page returns to the screen. It's shown at the top of the INDEX and is listed as a PM type document. Note that your equation document has also been stored.

Now that you've used the #EQUATION MATH program to create a custom program, you're ready to recall your statistical table and run the custom program on it.

Step 1	**RECALL**	the document **TABLE A** to the screen.
	TOUCH	the PROGRAM key.
	TYPE	**#CP TABLE A**
	TOUCH	ACCPT.
	Result	The Command Line briefly shows the software level, then displays the message: CALCULATION IN PROGRESS - PLEASE WAIT. When the calculations have been completed, the Command Line displays the message: CALCULATION COMPLETE - TOUCH STOP.
Step 2	**TOUCH**	STOP.
	Result	The message is cleared from the Command Line.
	COMPARE	your document with the one shown on the opposite page. If your document doesn't have any answers in Column 4, check your equation document against the one shown on page 3 - 6. If there's a mistake, revise the document and run #EQUATION MATH on it again.

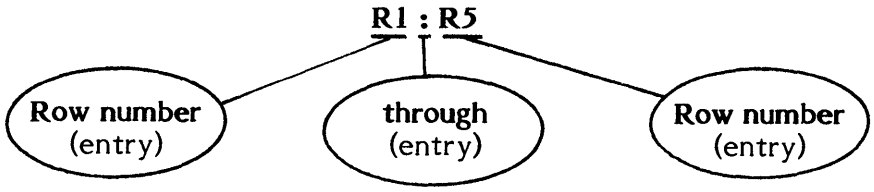
VOCATIONAL STUDENTS

Program	Public	Private	Other	Total
Electrical	123	42	10	175
Air Conditioning	12	13	4	
Welding	44	24	6	74
Plumbing	9	4	0	
Automotive	135	63	21	219

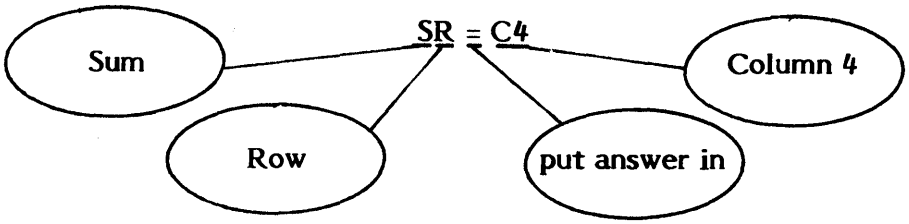
Step 3 **STORE** the revised document under the title **TABLE A RESULTS.** You'll use the original **TABLE A** document again.

In the previous exercise, you wrote equations to sum one row at a time. In this exercise, you'll write equations to sum all the rows across and put the answers in the Total column. You write one equation to tell the 860 to perform the same calculation on consecutive rows. You write a separate equation to tell the 860 what calculation is to be performed.

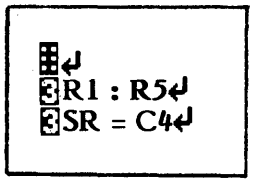
The first equation is an R followed by the first consecutive row number, a space, a colon, a space, then an R followed by the last consecutive row number. The consecutive row equation should always come before the equation for the math.



Next you write the equation to add the columns across and put the answer in the last column (Column 4). The equation is written as follows:



When you add each consecutive column across a row, the answer always appears in the same row. So, you cannot add the columns across Row 1 and put the answer in Row 2.



Step 1	**TITLE**	a document **EQ TABLE A2** and bring it to the screen.
	SET	a format with a special tab outside the left margin (at **2***).
	TOUCH	ACCPT to record the format.
	TOUCH	return.
Step 2	**TYPE**	CODE + 3, **R1** and a space, **:** (colon) and a space, **R5**, and touch return.
Step 3	**TYPE**	CODE + 3, **SR** and a space, = (equals sign) and a space, **C4**, and touch return.
Step 4	**HIGHLIGHT**	the document and check to be sure there is a CODE + 3 at the beginning of each equation line, that you have a space after each entry, and that each equation line ends with a return.
	TOUCH	the STOP key to remove the highlighting.
	STORE	the document.

Now you'll run the #EQUATION MATH program on your equation document to create a custom program.

Step 1	**RECALL**	**EQ TABLE A2**
	TOUCH	the PROGRAM key.
	TYPE	**#EQUATION MATH**
	TOUCH	the ACCPT key.
	Result	The Command Line briefly displays the software level, then displays the message: EQUATION CHECK IN PROGRESS - PLEASE WAIT. The program checks through your equation document for any errors. If the Command Line displays: EQUATION ERROR "#" / STOP & CORRECT / RUN AGAIN, refer to the **Equation Check** section on page 3 - 42. When the equations check has been completed, the Command Line will display the message: ENTER TITLE (MAX 20 CHAR) FOR CUSTOM PROGRAM - RETURN.
Step 2	**TYPE**	**#CP TABLE A2** for the title of the second custom program for TABLE A.
	TOUCH	return.
	Result	The document is removed from the screen and the Command Line displays the message: EQ TABLE A2 BEING PROCESSED - PLEASE WAIT. When the program finishes creating the custom math program, the Command Line displays the message: CUSTOM PROGRAM #CP TABLE A2 COMPLETE - TOUCH STOP.
Step 3	**TOUCH**	the STOP key.
	Result	The custom program and the equation document are stored and the Activity Page returns to the screen.

Now that you've used the #EQUATION MATH program to create a custom program, you're ready to recall your statistical table and run the custom program on it.

Step 1 **RECALL** **TABLE A** to the screen.

TOUCH the PROGRAM key.

TYPE **#CP TABLE A2**

TOUCH the ACCPT key.

Result The Command Line briefly shows the software level, then displays the message: CALCULATION IN PROGRESS - PLEASE WAIT.

When the calculations have been completed, the Command Line displays the message: CALCULATION COMPLETE - TOUCH STOP.

Step 2 **TOUCH** the STOP key.

Result The message clears from the Command Line.

COMPARE your document with the one shown below. If your document doesn't have any answers in Column 4, check your equation document against the one shown on page . If there's a mistake, revise the document and run #EQUATION MATH on it again.

VOCATIONAL STUDENTS

Program	Public	Private	Other	Total
Electrical	123	42	10	175
Air Conditioning	12	13	4	29
Welding	44	24	6	74
Plumbing	9	4	0	13
Automotive	135	63	21	219

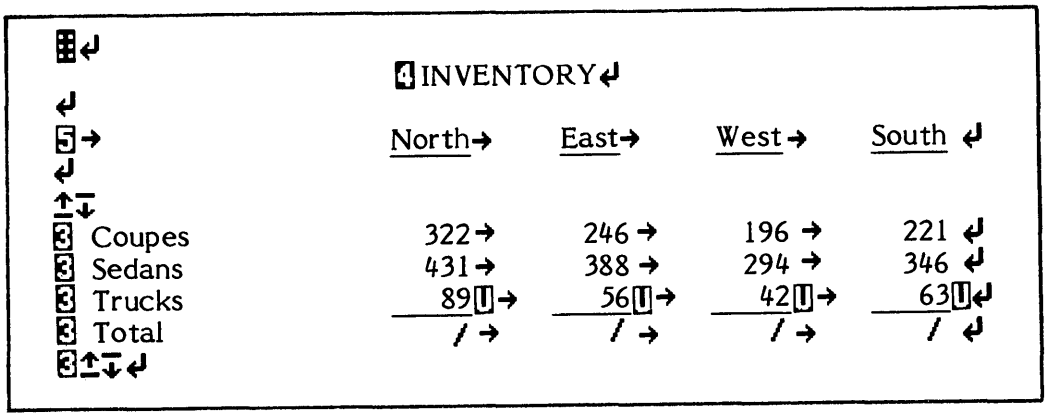
Step 3 **STORE** the revised document under the title **TABLE A2 RESULTS.** You'll use the original **TABLE A** document again.

On your own

Now, using the information on the previous pages, write an equation document to add rows 2 and 4 of **TABLE A.** Use the #EQUATION MATH program to create a custom program and run the custom program on **TABLE A.** Compare your final document with the one shown on page 3 - 47. If the answers are different, check the equation document and make the necessary revisions. Then run #EQUATION MATH on it again. Store the revised document under **TABLE A3 RESULTS.**

Adding Down

You can also write equations to add columns down. For this exercise you'll type a second statistical table. Remember, when you use the equation math program, every column must contain either a number or a CODE + Space. Since there are no numbers in the last row of the table, you'll put a CODE + Space in each column of the last row.



Step 1 **TYPE** **TABLE B** and touch ACCPT three times.

SET the following format:

- Margins at **20** and **75**
- Tabs at **40, 50, 60,** and **70**
- Special tabs at **45*, 55*, 65*,** and **75***
- Touch ACCPT

TOUCH return.

Step 2 **TYPE** the centered heading, the column headings, and return once.

Step 3 **TYPE** CODE + Index, Index to mark the beginning of the table.

TOUCH return.

Step 4 **TYPE** the statistical table shown above. Remember to begin each line with CODE + 3, use only the Lower tab key, and put a CODE + Space in each column of the last row.

TYPE CODE + 3, CODE + Index, Index to mark the end of the table.

TOUCH return.

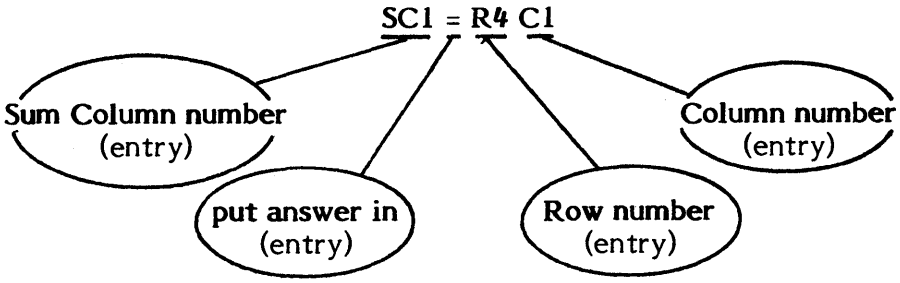
Step 5 **HIGHLIGHT** the document and compare it with the illustration above to be sure you have the proper placement of indexes, CODE + 3s, Lower tabs, CODE + Spaces, etc.

STORE the document.

Now you're ready to write the equation document to sum the columns in TABLE B. You'll be adding Rows 1, 2, and 3 and placing the answers in Row 4 so the first equation will tell the 860 to perform the same math on the stated consecutive rows.

R1 : R3

When you add columns down, you need to write separate equations for each column. There is no equation for working with consecutive columns. The equation to sum one column is written as:




```
▦↲
3R1 : R3↲
3SC1 = R4 C1↲
3SC2 = R4 C2↲
3SC3 = R4 C3↲
3SC4 = R4 C4↲
```

Step 1 **TITLE** a document **EQ TABLE B** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*).

TOUCH ACCPT and return.

Step 2 **TYPE** the equation document shown above.

Step 3 **HIGHLIGHT** the document and check to be sure a CODE + 3 is at the beginning of each equation line, that you have a space after each entry, and that each equation line ends with a return.

STORE the document.

Now you'll use the #EQUATION MATH program to create a custom program from your equation document.

Step 1 **CREATE** a custom math program using **EQ TABLE B:**

- Recall **EQ TABLE B**
- Touch the PROGRAM key, type **#EQUATION MATH,** and ACCPT
- Type **#CP TABLE B** for the title of your custom program
- Touch the STOP key when the program is finished.

Now, run the custom program on **TABLE B.**

Step 2 **RUN** the custom program on **TABLE B** as follows:

- Recall **TABLE B** to the screen
- Touch the PROGRAM key, type **#CP TABLE B,** and ACCPT
- Touch the STOP key when the program is finished

COMPARE your document with the one shown below. If your answers are different, check your equation document. Make any necessary revisions and run the #EQUATION MATH program again.

INVENTORY

	North	East	West	South
Coupes	322	246	196	221
Sedans	431	388	294	346
Trucks	89	56	42	63
Total	842	690	532	630

Step 3 **STORE** the document under **TABLE B RESULTS.**

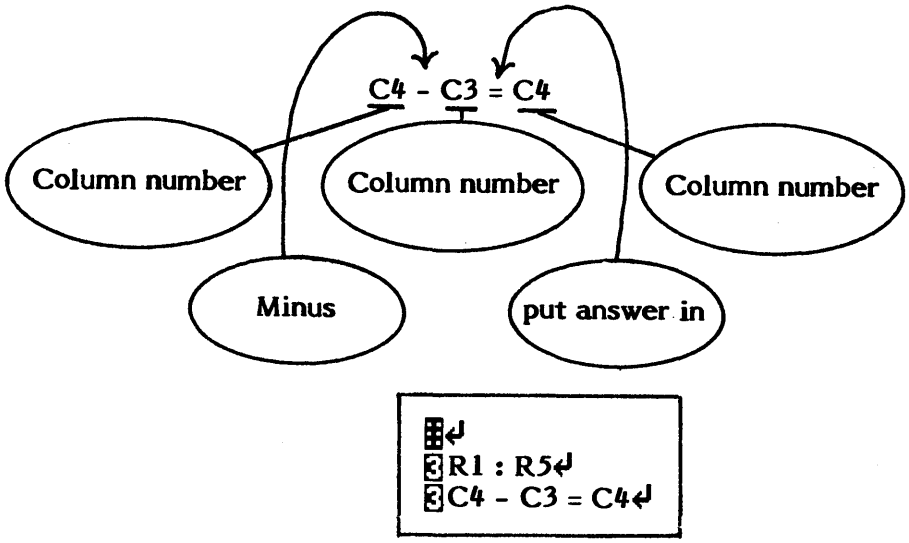
On your own

Write an equation document to add columns 1 and 3 of **TABLE B.** Then use #EQUATION MATH to create a custom program. Run the custom program on **TABLE B.** Compare your final document with the one shown on page 3 - 47. If the answers are different, check the equation document and make the necessary revisions. Then run #EQUATION MATH on it again. Store the revised document under **TABLE B2 RESULTS.**

Subtraction

In this exercise, you'll use the revised statistical table from a previous exercise (**TABLE A2 RESULTS**) and write an equation to subtract Column 3 from Column 4 and place the new total in Column 4. The new total will replace the existing total. The subtraction will be performed on consecutive rows.

You use a CODE + Hyphen as the minus sign (-) to tell the 860 you want to subtract. The equation is written as:



Step 1 **TITLE** a document **EQ TABLE A4** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*) and touch ACCPT.

TOUCH ACCPT and return.

Step 2 **TYPE** the equation document shown above. Remember to use CODE + Hyphen for the minus sign.

STORE the document.

Now use #EQUATION MATH to create a custom program.

Step 3 **CREATE** a custom math program as follows:

- Recall **EQ TABLE A4**
- Touch the PROGRAM key, type **#EQUATION MATH,** and ACCPT
- Type **#CP TABLE A4** for the title of your custom program
- Touch the STOP key when the program is finished

Now, run the custom program on **TABLE A2 RESULTS.**

Step 4 **RUN** the custom program as follows:

- Recall **TABLE A2 RESULTS** to the screen
- Touch the PROGRAM key, type **#CP TABLE A4,** and ACCPT
- Touch the STOP key when the program is finished

COMPARE your document with the one shown below. If the answers are different, check your equation document. Make any necessary corrections and run the #EQUATION MATH program again.

VOCATIONAL STUDENTS

Program	Public	Private	Other	Total
Electrical	123	42	10	165
Air Conditioning	12	13	4	25
Welding	44	24	6	68
Plumbing	9	4	0	13
Automotive	135	63	21	198

Step 5 **STORE** the revised document under **TABLE A4 RESULTS.**

On your own

MARCH EXPENSES

	Received	Spent	Leftover
Week 1	$ 12	$ 7	$
Week 2	$ 14	$ 3	$
Week 3	$ 9	$ 8	$
Week 4	$ 15	$ 6	$

TITLE a document **MARCH EXPENSES** and bring it to the screen.

SET the following format:

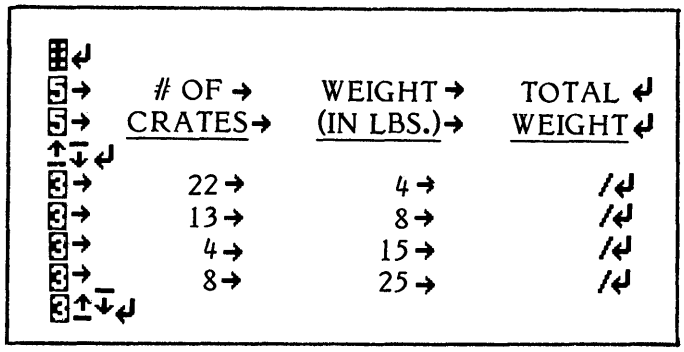
- Margins at **22** and **68**
- Tabs at **36, 48,** and **60**
- Special tabs at **40*, 52*,** and **64***
- Touch ACCPT and return

TYPE the table shown above.

Write an equation document to subtract Column 2 from Column 1 in all rows and put the answer in Column 3. Use #EQUATION MATH to create a custom program. Then run the custom program on **MARCH EXPENSES.** Compare your document with the document on page 3 - 48. Store the revised document under **MARCH EXP RESULTS.**

Multiplication

For this exercise, you'll type the statistical table shown below. Notice that the document does not have text at the left margin, so you'll need to put a Lower tab after the CODE + 3 to tell the program where the first column begins.



# OF → CRATES →	WEIGHT → (IN LBS.) →	TOTAL ↵ WEIGHT ↵
22 →	4 →	/↵
13 →	8 →	/↵
4 →	15 →	/↵
8 →	25 →	/↵

Step 1 **TITLE** your document **TABLE C** and bring it to the screen.

SET the following format:

- Margins at **32** and **68**
- Tabs at **36, 48,** and **60**
- Special tabs at **40*, 52*,** and **64***
- Touch ACCPT and return

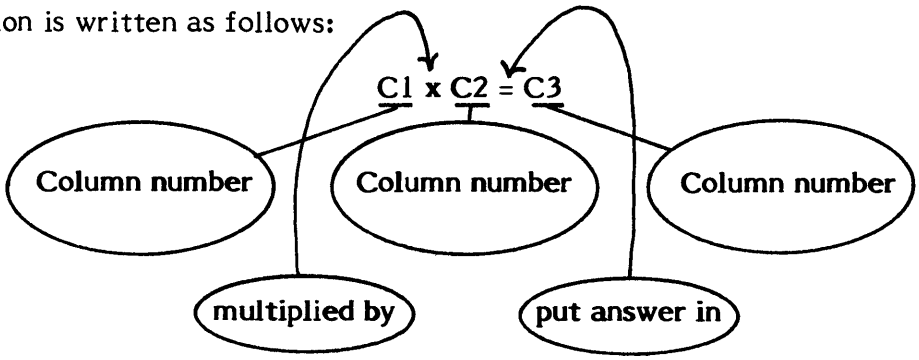
Step 2 **TYPE** the table shown above.

Step 3 **HIGHLIGHT** the document and check for proper placement of tabs, CODE + 3s, indexes, CODE + Spaces, etc.

STORE the document.

Now you'll write an equation document to work on consecutive rows, multiply Column 1 by Column 2, and put the answer in Column 3. You type a lower-case **x** in the equation to tell the 860 you want to multiply.

The equation is written as follows:




```
↵
R1 : R4↵
C1 x C2 = C3↵
```

Step 1 **TITLE** a document **EQ TABLE C** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*), touch ACCPT and return.

Step 2 **TYPE** the equation document shown above.

HIGHLIGHT the document and compare it to the document above.

STORE the document.

Step 3 **CREATE** a custom program as follows:

- Recall **EQ TABLE C**
- Touch the PROGRAM key, type **#EQUATION MATH**, and ACCPT
- Type **#CP TABLE C** for the title of your custom program
- Touch STOP when the program is finished

Step 4 **RUN** the custom program as follows:

- Recall **TABLE C** to the screen
- Touch the PROGRAM key, type **#CP TABLE C,** and ACCPT
- Touch STOP when the program is finished

COMPARE your document with the one shown below. If the answers are different, check your equation document. Make any necessary revisions and run the #EQUATION MATH program again.

# OF CRATES	WEIGHT (IN LBS.)	TOTAL WEIGHT
22	4	88
13	8	104
4	15	60
8	25	200

Step 5 **STORE** the revised document under **TABLE C RESULTS.**

On your own

SCHOOL REVENUE

Class	# of Students	Amount of Tuition	Total Revenue
Geometry	27	$ 25	$
English	18	$ 20	$
Art	11	$ 40	$
Science	23	$ 35	$

TITLE a document **SCH REVENUE** and bring it to the screen.

SET the following format:

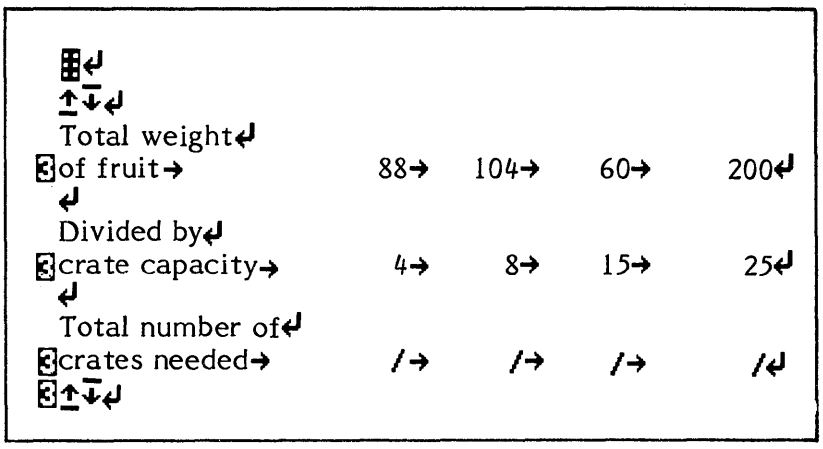
- Margins at **20** and **82**
- Tabs at **44, 60,** and **74**
- Special tabs at **46*, 64*,** and **78***
- Touch ACCPT and return

TYPE the table shown above.

Write an equation document to work on all the rows, multiply Column 1 by Column 2 and put the answer in Column 3. Use #EQUATION MATH to create a custom program. Run the custom program on **SCH REVENUE.** Compare your document with the document on page 3 - 48. Store the revised document under **SCH REV RESULTS.**

Division

In this exercise, you'll type another table and write an equation to divide. To indicate you want to divide, you type a **/** (slash) in the equation document.



Step 1 **TITLE** your document **TABLE D** and bring it to the screen.

SET the following format:

- Margins at **27** and **72**
- Tabs at **45, 52, 59,** and **68**
- Special tabs at **49*, 56*, 63***, and **72***
- Touch ACCPT and return

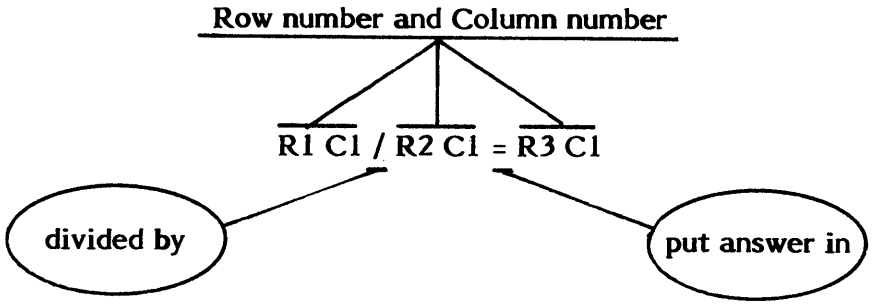
Step 2 **TYPE** the table shown above.

Step 3 **HIGHLIGHT** the document and check for proper placement of tabs, CODE + 3s, indexes, CODE + Spaces, etc.

STORE the document.

Now you're ready to type an equation document that tells the 860 to divide the numbers in the first row by the numbers in the second row. To do this, you'll write a separate equation for each column.

The equation is written:



Step 1 **TITLE** a document **EQ TABLE D** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*), touch ACCPT and return.

Step 2 **TYPE** the equation document shown below.

```
↵
3R1 C1 / R2 C1 = R3 C1↵
3R1 C2 / R2 C2 = R3 C2↵
3R1 C3 / R2 C3 = R3 C3↵
3R1 C4 / R2 C4 = R3 C4↵
```

Step 3 **HIGHLIGHT** the document and compare it to the one above.

STORE the document.

Now you'll use the #EQUATION MATH program to create a custom program from your equation document.

Step 4 **CREATE** a custom program:

- Recall **EQ TABLE D**
- Touch PROGRAM, type #EQUATION MATH, and ACCPT
- Type **#CP TABLE D** for the title of your custom program
- Touch the STOP key when the program is finished.

Step 5 **RUN** the custom program:

- Recall **TABLE D** to the screen
- Touch the PROGRAM key, type **#CP TABLE D,** and ACCPT
- Touch the STOP key when the program is finished

COMPARE your document to the one shown below. If the answers are different, check your equation document. Make any necessary revisions and run the #EQUATION MATH program again.

Total weight of fruit	88	104	60	200
Divided by crate capacity	4	8	15	25
Total number of crates needed	22	13	4	8

Step 6 **STORE** the revised document under **TABLE D RESULTS.**

On your own

TITLE a document **TYPISTS** and bring it to the screen.

SET the following format:

- Margins at **22** and **68**
- Tabs at **36, 48,** and **60**
- Special tabs at **40*, 51*,** and **63***
- Touch ACCPT and return

TYPE the table shown below.

# of TYPIST HOURS
REQUIRED FOR PROJECT X

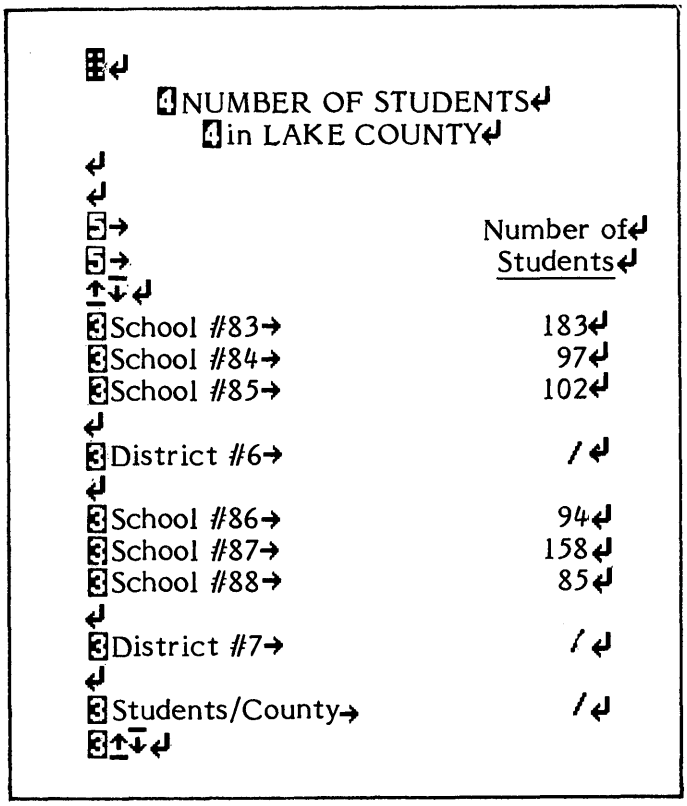
Report Section	# of pages	Avg. Pgs. per hour	Hours Required
I	125	5	
II	110	5	
III	130	5	
IV	150	3	

Now, write an equation document that divides the number of pages by the average pages per hour and put the answer in Column 3. Remember to type a consecutive row equation.

Use #EQUATION MATH to create a custom program. Run the custom program on **TYPISTS.** Compare your document with the document on page 3 - 49. Store the revised document under **TYPISTS RESULTS.**

Sub-totals

To obtain sub-totals in a statistical document, you write another equation. Sub-totaling can be thought of as "adding non-consecutive columns down." In the example below, sub-totals will be obtained for District #6 and District #7. These sub-totals will then be added for the Students/County row.



Step 1 **TITLE** your document **TABLE E** and bring it to the screen.

SET the following format:

- Margins at **30** and **60**
- Tab at **56**
- Special tab at **60***
- Touch ACCPT and return

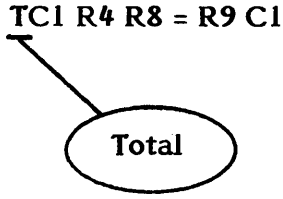
Step 2 **TYPE** the table shown above.

Step 3 **HIGHLIGHT** the document and check for proper placement of indexes, CODE + 3s, tabs, CODE + Spaces, etc.

STORE the document.

Now you'll type an equation document to sub-total and total. Since the first sub-total is for rows 1 through 3, the first equation will be **R1 : R3.** The second equation you write is to **Sum Column 1** and put the answer in **Row 4 Column 1.** The next equation is **R5 : R7.** Then you write the equation to **Sum Column 1** and put the answer in **Row 8 Column 1.**

The equation to total the number of students in the county is written as follows:

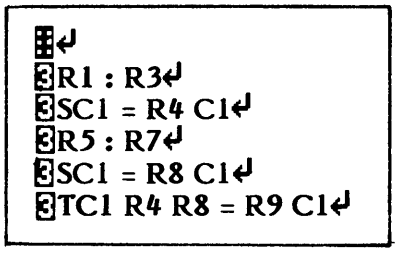


You can total up to six rows at a time.

Step 1 **TITLE** a document **EQ TABLE E** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*), touch ACCPT and return.

Step 2 **TYPE** the equation document shown below.



Step 3 **HIGHLIGHT** the document and compare it to the one above.

STORE the document.

Now you'll use #EQUATION MATH to create a custom program.

Step 4 **CREATE** a custom program:

- Recall **EQ TABLE E**
- Touch the PROGRAM key, type **#EQUATION MATH,** and ACCPT
- Type **#CP TABLE E** for the title of your custom program
- Touch STOP when the program is finished

Step 5 **RUN** the custom program:

- Recall **TABLE E** to the screen
- Touch the PROGRAM key, type **#CP TABLE E,** AND ACCPT
- Touch STOP when the program is finished

COMPARE your document to the one shown below. If the answers are different, check your equation document. Make any necessary revisions and run the #EQUATION MATH program again.

NUMBER OF STUDENTS
in LAKE COUNTY

	Number of Students
School #83	183
School #84	97
School #85	102
District #6	382
School #86	94
School #87	158
School #88	85
District #7	337
Students/County	719

Step 6 **STORE** the revised document under **TABLE E RESULTS.** You will be using the original **TABLE E** again.

Output Options

When the custom program puts the answers in your statistical table, it uses the standard output options. Standard options means:

- No commas
- No decimal points
- No plus or minus signs
- No parentheses for negative numbers

To tell the 860 you want to change the output options, you put an OPT equation at the beginning of your equation document. The OPT is preceded by a CODE + 3 and followed by a return. When you run the #EQUATION MATH program, it will ask you which output options you want. The output options you select will remain in effect unless you enter another OPT equation and change the options.

In this exercise, you'll recall **TABLE E** and change the number of students in each school.

Step 1 **RECALL** **TABLE E**

REPLACE the numbers in Column 1 with the numbers shown below.

NUMBER OF STUDENTS
in LAKE COUNTY

	Number of Students
School #83	1,234
School #84	485
School #85	567
District #6	
School #86	687
School #87	499
School #88	683
District #7	
Students/County	

STORE the revised document under the title **TABLE E REV.**

Now you'll write an equation document to change the output options and replace the existing answers with the new totals.

Step 1 **TITLE** a document **EQ TABLE E REV** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*), touch ACCPT and return.

Step 2 **TYPE** the equation document shown below.

```
#↵
3OPT↵
3R1 : R3↵
3SC1 = R4 C1↵
3R5 : R7↵
3SC1 = R8 C1↵
3TC1 R4 R8 = R9 C1↵
```

Step 3 **HIGHLIGHT** the document and compare it to the one above.

STORE the document.

Now you'll use #EQUATION MATH to create a custom program with different output options.

Step 4 **RECALL** **EQ TABLE E REV**

TOUCH the PROGRAM key

TYPE **#EQUATION MATH** and ACCPT

TYPE **#CP TABLE E REV** and touch return.

#EQUATION MATH always checks equation documents for an output option equation. When it finds one, the Command Line displays the message:

ALTER OPTIONS? ACCPT or STOP

Now you'll tell the program that you want to change the standard options and which options you want to use. To change an option, you touch the ACCPT key. To use the standard option, you touch the STOP key.

Step 5 **TOUCH** ACCPT to change the standard options.

Result The Command Line displays the message: OUTPUT COMMAS? ACCPT or STOP.

TOUCH ACCPT to put commas in the answers.

Result The Command Line displays the message: OUTPUT DECIMALS? ACCPT or STOP.

TOUCH STOP.

Result The Command Line displays the message: OUTPUT + AND - SIGN? ACCPT or STOP.

TOUCH STOP.

Result The Command Line displays the message: USE PARENS ( ) INSTEAD OF - SIGN? ACCPT or STOP.

TOUCH STOP.

Result The #EQUATION MATH program goes on to create a custom program for TABLE E REV that will put commas in the answers.

When the custom program is complete, the Command Line will display the message: CUSTOM PROGRAM #CP TABLE E REV COMPLETE - TOUCH STOP.

TOUCH STOP.

Result The custom math program and the equation document are stored and the Activity Page returns to the screen.

Note: You cannot use parens **( )** or minus - signs for negative numbers in a document that has dollar signs **$** or CODE + UND in the columns with the negative numbers. Instead, edit the parens or minus signs in after you run the custom program.

Step 6 **RUN** the custom program:

- Recall **TABLE E REV**
- Touch PROGRAM, type **#CP TABLE E REV,** and touch ACCPT
- Touch STOP when the program is finished
- Compare your document to the one below
- Store the revised document under **TABLE E REV RESULTS**

NUMBER OF STUDENTS
in LAKE COUNTY

	Number of Students
School #83	1,234
School #84	485
School #85	567
District #6	2,286
School #86	687
School #87	499
School #88	683
District #7	1,869
Students/County	4,155

Whenever your statistical document contains commas, decimals, + or - signs, or ( ) instead of a - sign, type an OPT equation at the beginning of the equation document.

Using Constants

When the same number is used in an equation document, the "same number" is referred to as a constant. For example, if you want to multiply each number in a column by a percentage, the percentage is a constant. When using constants in an equation document, there are two specific rules: 1) the constant must be the second entry of the equation, and 2) there can be no more than five (5) digits after the decimal place.

In the exercise below, you'll be multiplying Column 1 by a constant and putting the answer in Column 2, then adding Column 1 and Column 2 and putting the answer in Column 3.

JOHNSON CONSTRUCTION COMPANY
SALARY INCREASE PLANNING
Rate of Increase - 8%

Employee #	Current Salary	Salary Incr.	New Salary
G96850	23,479		
B20476	22,900		
C43968	32,700		
A04765	19,200		

Step 1 **TITLE** your document **TABLE Constants** and bring it to the screen.

SET the following format:

- Margins at **25** and **80**
- Tabs at **45, 59,** and **74**
- Special tabs at **52*, 65***, and **80***
- Touch ACCPT and return

Step 2 **TYPE** the table shown above.

Step 3 **HIGHLIGHT** the document and check for proper placement of indexes, CODE + 3s, tabs, CODE + Spaces, etc.

STORE the document.

Now you'll type the equation document using a constant. The constant in this exercise is the rate of increase, 8%. When you type a percentage in an equation statement, be sure to use the decimal form.

Step 1 **TITLE** a document **EQ Constants** and bring it to the screen.

SET a format that has a special tab outside the left margin (at 2*), touch ACCPT and return.

Step 2 **TYPE** the equation document shown below.

```
OPT
R1 : R4
C1 x .08 = C2
R1 : R4
SR = C3
```

Step 3 **HIGHLIGHT** the document and compare it to the one above.

STORE the document.

Now you'll use #EQUATION MATH to create a custom program with different output options.

Step 4 **RECALL** **EQ Constants**

TOUCH the PROGRAM key

TYPE **#EQUATION MATH** and ACCPT

TYPE **#CP Constants** and touch return.

Result #EQUATION MATH will check for an output option equation. Then the Command Line will display the message: ALTER OPTIONS? ACCPT or STOP

Step 5 **TOUCH** ACCPT to change the standard options.

Result The Command Line displays the message: OUTPUT COMMAS? ACCPT or STOP.

TOUCH ACCPT to put commas in the answers.

Result The Command Line displays the message: OUTPUT DECIMALS? ACCPT or STOP.

TOUCH STOP.

Result The Command Line displays the message: OUTPUT + and - SIGN? ACCPT or STOP.

TOUCH STOP.

Result The Command Line displays the message: USE PARENS ( ) INSTEAD OF - SIGN? ACCPT or STOP.

TOUCH STOP.

Result The 860 will now create a custom program for **TABLE Constants.**

When the custom program is completed, the Command Line will display the message: CUSTOM PROGRAM #CP Constants COMPLETE - TOUCH STOP.

Step 6 **TOUCH** STOP.

Step 7 **RUN** the custom math program on **TABLE Constants:**

- Recall **TABLE Constants** to the screen
- Touch the PROGRAM key, type **#CP Constants** and ACCPT
- Touch the STOP key when the program is finished

COMPARE your document to the one shown below. If the answers are different, check your equation document. Make any necessary revisions and run the #EQUATION MATH program again.

JOHNSON CONSTRUCTION COMPANY
SALARY INCREASE PLANNING
Rate of Increase - 8%

Employee #	Current Salary	Salary Incr.	New Salary
G96850	23,479	1,878	25,357
B20476	22,900	1,832	24,732
C43968	32,700	2,616	35,316
A04765	19,200	1,536	20,736

Step 8 **STORE** the revised document under **Constant Results.**

Summary of Rules

Equation Documents

- You set a special tab outside the left margin to prevent accidental reformatting of the document.
- Type a return to separate the format block from the equations.
- Each equation is typed on a separate line, beginning with a CODE + 3 and ending with a return.
- There should not be any other CODE + 3s in an equation document.
- Each entry within an equation must be followed by a space.
- The #EQUATION MATH program is used to create a custom math program from an equation document.
- You write one equation to perform the same calculation on consecutive rows.
- There is no equation for consecutive columns.
- When you add each consecutive column across a row, the answer must be put in the same row.
- You can total up to six rows at a time.
- To change the standard output options, type an OPT equation at the beginning of the equation document.
- You cannot use parens ( ) or minus - signs for negative numbers in a document that has dollar signs $ or CODE + UND in the columns with the negative numbers.

S	tells the 860 to **SUM**
R	tells the 860 which **ROW** to use
C	tells the 860 which **COLUMN** to use
T	tells the 860 to **TOTAL**
+	tells the 860 to **SUM**
-	tells the 860 to **SUBTRACT** (CODE + Hyphen)
x	tells the 860 to **MULTIPLY**
/	tells the 860 to **DIVIDE**
=	tells the 860 **PUT THE ANSWER IN**
:	tells the 860 to perform the same calculation on stated **CONSECUTIVE ROWS**

Note: After using the #EQUATION MATH program, you may have to turn on EDIT REFORMAT. Be sure to check this option before you work with a text document.

In this exercise, you'll be typing another statistical table. Then you'll write an equation document to change the output options, add columns, add sub-totals, and subtract.

In the example below, sub-totals will be obtained for the TOTAL LABOR and TOTAL NON-LABOR rows. These sub-totals will be added and the answer placed in the NET EXPENSE row. Then Column 1 will be subtracted from Column 2 to get the answers for Column 3.

OPERATING REPORT

Description	YTD Actual	YTD Fixed Budget	YTD Var. FR Fixed Budget
Clerical Slry	11,102	10,400	
Exempt Slry	41,929	43,600	
Overtime	103	0	
Benefits	14,878	15,120	
Contract Labor	22,988	5,000	
TOTAL LABOR			
Depreciation	2,226	5,500	
Expendable Mtls	8,115	3,200	
Travel	2,915	3,000	
Operations Cost	0	2,000	
Miscellaneous	12,458	11,100	
TOTAL NON-LABOR			
NET EXPENSE			

Step 1 **TITLE** your document **TABLE F** and bring it to the screen.

SET the following format:

- Margins at **20** and **80**
- Tabs at **44**, **58**, and **72**
- Special tabs at **52***, **66***, and **80***
- Touch ACCPT

TOUCH return.

Step 2 **TYPE** the table shown above.

Step 3 **HIGHLIGHT** the document and check for proper placement of indexes, CODE + 3s, tabs, CODE + Spaces, etc.

STORE the document.

When the equations are complex (more than four rows or columns), it is a good idea to print the statistical document and label rows and columns before typing the equation document.

Step 4 **PRINT** a copy of **TABLE F.**

LABEL each row and column that will have math performed. Don't label the text column at the left margin; don't label the returns between the math rows.

For this exercise, the YTD ACTUAL and YTD FIXED BUDGET columns will be sub-totaled in the TOTAL LABOR and TOTAL NON-LABOR rows. Totals will be placed in the NET EXPENSE row. You'll also need to subtract Column 1 from Column 2 to obtain the YTD VAR.FR FIXED BUDGET figures. In addition, you'll use the Output Options instruction to tell the 860 to put commas and parens for negative numbers in the answers.

```
OPT
R1 : R5
SC1 = R6 C1
SC2 = R6 C2
R7 : R11
SC1 = R12 C1
SC2 = R12 C2
TC1 R6 R12 = R13 C1
TC2 R6 R12 = R13 C2
R1 : R13
C2 - C1 = C3
```

Step 1 **TITLE** a document **EQ TABLE F** and bring it to the screen.

SET a format that has special tab outside the left margin (at 2*), touch ACCPT and return.

Step 2 **TYPE** the equation document shown above.

Step 3 **HIGHLIGHT** the document and check to be sure there is a CODE + 3 at the beginning of each equation line, that you have a space after each entry, and that each equation line ends with a return.

Step 4 **STORE** the document.

Create the custom math program using the following steps.

Step 5 **CREATE** the custom program:

- Recall **EQ TABLE F** to the screen.
- Touch the PROGRAM key, type **#EQUATION MATH,** and ACCPT
- Type **#CP TABLE F** for the title of your custom program and touch return.

Result — The Command Line displays the message: ALTER OPTIONS? ACCPT or STOP.

TOUCH — ACCPT.

Result — The Command Line displays the message: OUTPUT COMMAS? ACCPT or STOP.

TOUCH — ACCPT.

Result — The Command Line displays the message: OUTPUT DECIMALS? ACCPT or STOP.

TOUCH — STOP.

Result — The Command Line displays the message: OUTPUT + AND - SIGN? ACCPT or STOP.

TOUCH — STOP.

Result — The Command Line displays the message: USE PARENS ( ) INSTEAD OF - SIGN? ACCPT or STOP.

TOUCH — ACCPT.

Result — The 860 goes on to create a custom program for **TABLE F.**

When completed, the Command Line will display the message: CUSTOM PROGRAM #CP TABLE F COMPLETE - TOUCH STOP.

Step 6 **TOUCH** STOP.

Step 7 **RUN** the custom math program on **TABLE F:**

- Recall **TABLE F** to the screen
- Touch the PROGRAM key, type **#CP TABLE F** and ACCPT
- Touch the STOP key when the program is finished

COMPARE your document to the one shown below. If the answers are different, check your equation document. Make any necessary revisions and run the #EQUATION MATH program again.

OPERATING REPORT

Description	YTD Actual	YTD Fixed Budget	YTD Var. FR Fixed Budget
Clerical Slry	11,102	10,400	(702)
Exempt Slry	41,929	43,600	1,671
Overtime	103	0	(103)
Benefits	14,878	15,120	242
Contract Labor	22,988	5,000	(17,988)
TOTAL LABOR	91,000	74,120	(16,880)
Depreciation	2,226	5,500	3,274
Expendable Mtls	8,115	3,200	(4,915)
Travel	2,915	3,000	85
Operations Cost	0	2,000	2,000
Miscellaneous	12,458	11,100	(1,358)
TOTAL NON-LABOR	25,714	24,800	(914)
NET EXPENSE	116,714	98,920	(17,794)

Step 8 **STORE** the revised document under **TABLE F RESULTS.**

On Your Own

TITLE a document **JOHNSON** and bring it to the screen.

SET the following format:

- Margins at **15** and **90**
- Tabs at **30, 40, 50, 59, 69,** and **79**
- Special tabs at **37*, 47*, 56*, 66*, 76*,** and **85***
- Touch ACCPT and return

TYPE the table shown below.

JOHNSON CONSTRUCTION COMPANY
COMPARATIVE EXPENSE REPORT
AS OF JUNE 30, 1981

	1st Q 1980	1st Q 1981	% Incr. (Decr)	2nd Q 1980	2nd Q 1981	% Incr. (Decr)
Salaries	123,103	125,714		112,915	125,714	
Benefits	2,346	2,346		1,671	2,346	
Off. Supplies	1,274	858		988	858	
Const. Equip.	15,963	13,031		20,852	13,031	
Overtime	842	0		0	0	
Contract Labor	0	525		392	525	
Miscellaneous	2,056	1,943		1,496	1,943	
TOTAL						

Now, write an equation document that will calculate the percent of increase for the first and second quarters of 1981. To do this, your equation document should include an option statement to output commas and parens for negative numbers, and then add the expenses for each quarter. Next, include another option statement to output decimals (3 places) for the percent of increase/decrease figures. To figure the percent of increase or decrease, subtract the 1980 figures from the 1981 figures and put the answers in the % columns. Then divide the answers in the % columns by the 1980 figures and put the answers in the % columns. Remember to use consecutive row equations when you can.

Use #EQUATION MATH to create a custom program. Run the custom program on **JOHNSON.** Compare your document with the document on page 3 - 50. Store the revised document under JOHNSON RESULTS.

Equation Check

It is recommended that you check your equation document before running #EQUATION MATH for the following:

- Be sure #EQUATION MATH and #B:Math are on the disc you're going to run programs on.
- Be sure your System Disc is in the controller before you run a program.
- Be sure there is a CODE + 3 (stop code) at the beginning of every equation line or output option request.

  #EQUATION MATH will check your equation document for a CODE + 3. If it finds **one**, it will consider the document "okay". However, you must have a CODE + 3 at the beginning of every equation for the program to work correctly. (#EQUATION MATH will ignore all equations without CODE + 3 at the beginning of line; it will only check and work with the equation with a CODE + 3.)
- Be sure each entry (row number, column number, math sign, etc.) within an equation is followed by a space and that the last entry is followed by a return.
- Be sure your equations tell the 860 exactly what you want it to do, where you want it done, and where you want the answer.
- Be sure you have a CODE + Space or number in every column.

When creating the custom math program, #EQUATION MATH checks for errors in the equation document. If the equation check routine finds an error, the Command Line will display the message: EQUATION ERROR "#" / STOP & CORRECT / RUN AGAIN. The questionable entry will be highlighted and the cursor will be positioned at the error point.

Refer to the EQUATION ERRORS on the next few pages to find the number shown in the Command Line. Then use the following steps to correct the problem.

TOUCH	the STOP key to clear the message.
MAKE	the necessary correction to your equation.
HIGHLIGHT	the line above the corrected equation line.
TOUCH	the PROGRAM key and run #EQUATION MATH from that point.
Result	The program will resume running from the highlighted line.

Note: When corrections are made it is not necessary to run the #EQUATION MATH program from the beginning of the document. The program will store your revised equation document, so the correct version is on the disc. The program will then recall the revised version to resume creating the custom program.

In the table of EQUATION ERRORS, the explanations tell you what the EQUATION ERROR means and the examples show how the equation **should be** typed.

TABLE OF EQUATION ERRORS

EQUATION ERROR NUMBER	
1	The first character after the CODE + 3 in an equation must be one of the following: **R** (ROW) **C** (COLUMN) **S** (SUM) **T** (TOTAL) **O** (OPTIONS)
2	Equations beginning with a T (TOTAL) to total columns from specified rows must have a **C** (COLUMN) after the **T** to tell the program which column is to be totaled. TCn Rn Rn...Rn = Rn
3	Invalid ROW or COLUMN number, or invalid constant. Examples are zero (0), no value entered, alpha characters, or zero (0) entered as the first digit in a constant.
4	R (ROW) numbers must be specified. TCn Rn Rn...Rn = Rn
5	R (ROW) number must be specified as answer position. TCn Rn Rn...Rn = Rn
6	Beginning ROW number must be less than ending ROW number. R1 : R2

7 Required math function sign not found at proper location in equation or invalid math function sign entered. Valid math function signs are:

\+ ADD
\- SUBTRACT
x MULTIPLY
/ DIVIDE
= EQUAL (put answer in)

8 R (ROW) or C (COLUMN) not specified **or** constant is equal to zero.

Rn Cn x Rn Cn = Rn Cn

If the second entry in the equation specifies a ROW number, both ROW and COLUMN numbers must be specified in the answer position.

9 Ending ROW number from which columns are to be summed is not specified.

Rn : Rn
SCn - Rn Cn

10 C (COLUMN) number for answer position not specified.

SR = Cn

11 More than six (6) ROWs to be totaled.

TCn Rn Rn Rn Rn Rn Rn = Rn

12 R (ROW) numbers not consecutive (each ROW number must be greater than the previous ROW number)

TCn R1 R2 R3 R4 R5 = Rn

13 C (COLUMN) number not specified in first entry of the equation.

SCn = Rn Cn

14 C (COLUMN) number must be specified as the answer position if the math equation is directed by a consecutive row equation.

Cn x Cn = Cn **or**
Cn x CONSTANT = Cn

15 R (ROW) number entered where a COLUMN number or Constant required.

Cn x Cn = Cn

16 ROW number and COLUMN number must be specified for answer position.

17 The program is unable to read the equation. ROW, COLUMN, or CONSTANT entered incorrectly.

18 Either a ROW number or a COLUMN number must be specified.

SCn = Rn Cn **or**
SR = Cn

19 ROW number must be specified for answer position.

SCn = Rn Cn

20 ROW number and COLUMN number must be specified for answer position

SCn = Rn Cn

OR

COLUMN number must be specified as answer position.

SR = Cn

21 COLUMN number missing or incorrectly entered.

Cn x Cn = Cn **or**
Cn x CONSTANT = Cn

Another message you may see is PROGRAM ERROR #.

If you get a PROGRAM ERROR, use the following steps:

MAKE a note of the PROGRAM ERROR number.

TOUCH STOP to clear the message.

TOUCH STORE to clear the document from the screen.

TOUCH STOP, then DEL, and ACCPT to clear the document.

CHECK the PROGRAM ERRORS listed below. If the problem is PROGRAM ERROR 23, copy #B:Math onto your disc and run the custom program again.

If the problem is PROGRAM ERROR 22 or 31, complete both steps below.

RECALL the equation document and check it for possible problems. (See page 3 - 42.) Make any necessary corrections. Store the document, then run #EQUATION MATH again for a new custom program.

RECALL the statistical document and check it for any possible problems. Make any necessary corrections. Store the document, then run the custom program again.

PROGRAM ERROR 22 -- see page 3 - 42 for possible problems.

PROGRAM ERROR 23 -- #B:Math program not on disc. #EQUATION MATH and #B:Math must be on the same disc that you're running programs on. The System Disc must be in the other station.

PROGRAM ERROR 31 -- see page 3 - 42 for possible problems.

Equation Documents and Final Documents

for **On your own** Exercises

TABLE A3 Equation Document

R2 SR = C4
R4 SR = C4

TABLE A3 RESULTS

VOCATIONAL STUDENTS

Program	Public	Private	Other	Total
Electrical	123	42	10	
Air Conditioning	12	13	4	29
Welding	44	24	6	
Plumbing	9	4	0	13
Automotive	135	63	21	

TABLE B2 Equation Document

R1 : R3
SC1 = R4 C1
SC3 = R4 C3

TABLE B2 RESULTS

INVENTORY

	North	East	West	South
Coupes	322	246	196	221
Sedans	431	388	294	346
Trucks	89	56	42	63
Total	842		532	

MARCH EXP Equation Document

R1 : R4
C1 - C2 = C3

MARCH EXP RESULTS

MARCH EXPENSES

	Received	Spent	Leftover
Week 1	$ 12	$ 7	$ 5
Week 2	$ 14	$ 3	$ 11
Week 3	$ 9	$ 8	$ 1
Week 4	$ 15	$ 6	$ 9

SCH REVENUE Equation Document

R1 : R4
C1 x C2 = C3

SCH REV RESULTS

SCHOOL REVENUE

Class	# of Students	Amount of Tuition	Total Revenue
Geometry	27	$ 25	$675
English	18	$ 20	$360
Art	11	$ 40	$440
Science	23	$ 35	$805

TYPISTS Equation Document

R1 : R4
C1 / C2 = C3

TYPISTS RESULTS

# of TYPIST HOURS
REQUIRED FOR PROJECT X

Report Section	# of pages	Avg. Pgs. per hour	Hours Required
I	125	5	25
II	110	5	22
III	130	5	26
IV	150	3	50

JOHNSON Equation Document

```
OPT
R1 : R7
SC1 = R8 C1
SC2 = R8 C2
SC4 = R8 C4
SC5 = R8 C5
OPT
R1 : R8
C2 - C1 = C3
C3 / C1 = C3
C5 - C4 = C6
C6 / C4 = C6
```

JOHNSON RESULTS

JOHNSON CONSTRUCTION COMPANY
COMPARATIVE EXPENSE REPORT
AS OF June 30, 1981

	1st Q 1980	1st Q 1981	% Incr. (Decr)	2nd Q 1980	2nd Q 1981	% Incr. (Decr)
Salaries	123,103	125,714	0.021	112,915	125,714	0.113
Benefits	2,346	2,346	0.000	1,671	2,346	0.404
Off. Supplies	1,274	858	(0.327)	988	858	(0.132)
Const. Equip.	15,963	13,031	(0.184)	20,852	13,031	(0.375)
Overtime	842	0	(1.000)	0	0	0
Contract Labor	0	525	0	392	525	0.339
Miscellaneous	2,056	1,943	(0.055)	1,496	1,943	0.299
TOTAL	145,584	144,417	(0.008)	138,314	144,417	0.044