

VLA TECHNICAL REPORT NO. 53

VLA WORD PROCESSOR OPERATORS MANUAL

A Guide to Specific Applications
and Variations Used at the VLA

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PREFACE

This guide is intended for use by the operators of the IBM Displaywriters at the VLA site. It is designed to help with specific applications and problems which are unique to the VLA and are not covered by the standard manuals issued by IBM. It is by no means a complete "How-To" book and questions and problems that are general to the use of the Displaywriters are covered in the manuals provided by IBM. It is however, designed to help the operator in dealing with problems that are not covered in the IBM manuals and will be updated and revised as new procedures are implemented or new questions and problems are discovered. Any problems or questions that arise which are not covered here should be brought to the attention of the author for inclusion in later revisions and updates.

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I. USING THE 6670 FOR WORD PROCESSING

A. TYPING EQUATIONS FOR THE 6670

Typing equations in the 6670 is somewhat different than typing them for the normal printer. A basic equation with only one line of text (superscripts and subscripts included) is very simple. This would be typed the same as if you were typing a line of text. Of course you would want to indent the equation two or more tab stops beyond the left margin or center the equation on the page as closely as possible, for example:

$$A_1 = B^2 a^{\frac{1}{2}} \times v,y \quad (1)$$

or

$$A_1 = B^2 a^{\frac{1}{2}} \times v,y \quad (2)$$

This will depend mostly on how the author prefers the equations done. In the case of an author who really has no preference, use whichever way you find easier and looks best to you.

Displaywriter Keyboard 203 is the same keyboard that is in the 6670 for symbols. Keep the symbol guide taped to your console and you can see at a glance which characters will produce which symbols.

In the case of multi-level equations there are some definite steps to perform. OCL needs to be added when you come to where the equations will be located.

On the line following the last line of text prior to an equation do a Format Change to single space, if you are not already single spacing, and change "adjust line endings" to 2 = no. In some cases

the Format Change should be done at the beginning of the last line of text when the last line is short and you have a $\frac{1}{2}$ down on the first line of your equation. Equation (3) was done in this manner. Only by looking at the actual document can you be sure the spacing is balanced correctly, the screen will look right in any case. Type the following OCL at the left margin:

```
",mod_equ 1_,end(CR)"          "(CR)" = Carriage Return
```

This tells the 6670 that you are modifying the document here to go into the equation mode. The number 1 after the "equ" tells the 6670 to turn it on. The underscore is the equivalent of a carriage return and keeps your OCL on one line to save space. The line of OCL will not print on your document but will show on the screen and count as a line on the displayed page.

In order to keep a double spaced or space and a half document from looking 'squeezed up' you may need to add a carriage return after the beginning OCL, before the equation, and one or more carriage returns before or after the ending OCL after the equation before the Return to Format instruction. REMEMBER: After each OCL instruction you put into a document you MUST type ",end" to end the OCL.

After you have typed the equation type in the OCL:

```
",mod_equ 0_,end(CR)"
```

at the left margin. This tells the 6670 that you are now going out of the equation mode. The number 0 after the "equ" tells it to turn off. Then at the beginning of the next line type a Format Change and "return to original format".

Sample equation:

$$S0 = \frac{1^a}{2_b} \quad (3)$$

The actual typing of Equation (3) after the Format Change and OCL is done will be:

Tab or space over to superscript "a", $\frac{1}{2}$ down, type "a", $\frac{1}{2}$ up (CR).

Tab or space over to where "S0" is to appear, $\frac{1}{2}$ down, type "S0", $\frac{1}{2}$ up, space, $\frac{1}{2}$ down, type "=", $\frac{1}{2}$ up, space, type "begin underscore", type "1", required space, "end underscore", tab or space over to 82 (for a right margin of 85), $\frac{1}{2}$ down, type "(3)", $\frac{1}{2}$ up (CR).

Tab or space over to 2, type "2", $\frac{1}{2}$ down, type "b", $\frac{1}{2}$ up (CR).

In the Equation Mode it is necessary to have all underscores on the baseline. This involves a lot of $\frac{1}{2}$ ups and $\frac{1}{2}$ downs. Also in Equation Mode there is only $\frac{1}{2}$ up or $\frac{1}{2}$ down capability per line, not both. In other words, you can start with your baseline and $\frac{1}{2}$ down from it, but you cannot $\frac{1}{2}$ down and then $\frac{1}{2}$ up and then $\frac{1}{2}$ up again. All tabs, spaces and carrier returns must also be typed on the baselines so be sure to $\frac{1}{2}$ up back to the baseline before you do these. It is a bit confusing but once you have done it a few times it will fall into place.

When doing complicated equations it is sometimes much less confusing and time consuming just to type the basic equation without the underscore and add it later by hand. This usually saves retyping the equation 3 or 4 times to get it just right.

To do a moderately complex equation such as equation (4) when no Greek symbols are involved it is easier NOT to go into equation mode and use required backspaces.

$$N = \frac{A}{P} \quad (4)$$

Tab to where N is to be located, type "N =", then $\frac{1}{2}$ up, type "A", $\frac{1}{2}$ down, required backspace, $\frac{1}{2}$ down, "P", $\frac{1}{2}$ up, tab to 82 and type "(4)"(CR). In this case the underscore was added by hand as the 6670 will not print a $\frac{1}{2}$ up underscore and allow a backspace through it. Keyboard changes will be removed if they are backspaced through also. When doing equations in this way, they must be free from Greek symbols or any other type of keyboard change or the characters will not print as symbols, only as regular alpha characters.

The following pages are worksheets to use in helping to set up equations. It might be helpful to write out difficult equations first, using a worksheet, before trying to enter them into a document. Page 5 is an example of how the worksheet would look for equation (3).

TECHNICAL TEXT WORKSHEET

(Baselines are Numbered)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

$$SO = \frac{1^a}{2^b} \quad (3)$$

- Record underscores on the baseline.
- Record each baseline with the half-line below it.
- Record spaces, tabs, and carrier returns on the baseline.
- Record a Subscript instruction only to index down to the half-line below the baseline.
- Record a Superscript instruction only to index up to the baseline.

TECHNICAL TEXT WORKSHEET

(Baselines are Numbered)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

11 _____

12 _____

13 _____

14 _____

15 _____

16 _____

- Record underscores on the baseline.
- Record each baseline with the half-line below it.
- Record spaces, tabs, and carrier returns on the baseline.
- Record a Subscript instruction only to index down to the half-line below the baseline.
- Record a Superscript instruction only to index up to the baseline.

B. SET UP FOR SENDING A JOB TO THE 6670

Go through the normal steps to create a job. In CHANGE DOCUMENT FORMAT select the desired Line Format, Margins and Tabs (usually 15 and 85) and choose the desired Page Format. (Standard machine defaults are First Line 7, Last Line 60 which is also standard for NRAO.) DO NOT set up Headers and Footers, this will be done with OCL. Press ENTER enough times to get to typing frame. Type in the following OCL at the beginning of page one to number pages on line 63 beginning with the second page of the document numbered "page 2".

",mar 63 3(CR)"

"//2/"(CR)

",end"(CR)

"Page End"

After page ending start typing text on the first line of machine page number 2. This will print out as page one on your document but will not be numbered.

",mar" (MUST begin at left margin) = tells 6670 you want to put something in the top or bottom margin. The first number following ",mar" tells which line to start on, the second, which page to start on. (63 3 means: type on line 63, beginning on machine page 3 the instructions which follow in the OCL.)

"//2/" (Centered) = start numbering with the number 2 and number all pages consecutively. In sectioned document you would tab to center as usual, enter code/center and type section number, hyphen, slash slash, 2, slash slash (1-//2//).

",end" = the end of OCL

"Page End" here and begin typing your text on the next page. When you paginate, the Displaywriter will count that page but when you send to the 6670 it will not count it as a page and will not print or include it in the page numbering system.

Do the paginating in the Displaywriter. Go to Paginate Document.

a: will be as usual

b: will be 2 as usual

c: can be either 1 (YES) or 2 (NO) depending on your preference. However, if the right margin is justified c MUST BE 2.

d: MUST BE 2 NO!! You should already have put the page ends in your document.

Print document as described in BASIC STEPS TO COMMUNICATE TO THE 6670.

C. BASIC STEPS TO COMMUNICATE TO THE 6670

End job as usual. DO NOT Press "PRINT" key.

Go to TASK SELECTION frame

Select: e (Feature Tasks)

Press ENTER

PROMPT: Insert desired feature diskette; press ENTER

Insert Communications diskette

Press ENTER

BINARY SYNCHRONOUS COMMUNICATION SETUP SELECTION menu appears

Select: a (6670)

Press ENTER

Press REQUEST key

REQUEST TASKS menu appears

Select: a (Send Document)

Press ENTER

PROMPT: Type document name; press ENTER.

Do so

PROMPT: Type diskette name; press ENTER.

If you have left the work diskette in the drive unit it will
automatically show the diskette name, just press ENTER

SEND DOCUMENT frame appears

Textpack 3 Users:

Select: a to make any changes to standard setup. Normally
you won't need to do this unless you need a different
arrangement.

Textpack 4 Users:

There are four selections available in this frame:

	Your <u>Choice</u>	Possible <u>Choice</u>
Select: a - Send from page	0	0 = first page 1-9999.9.9
b - Send through page	0	0 = last page 1-9999.9.9

(You can select any particular page or pages in a document
to print here but your page numbers will not print as the
6670 will not read the first page of your document where the
page numbering instructions are. In most cases you will
want to leave this with the standard defaults as shown.)

c	-	Print format	100	100-107
d	-	Number of copies	1	1-99

Press ENTER until "ATTENDED" frame appears.

To send more than one document at a time, press REQUEST key again and repeat the above steps for each document required.

Press COMM START (LINE ADJ key)

Press black button on Bid Select box (If red light is blinking you may press the black button, if it is off, someone else has the bid at the moment and you must wait until it starts blinking again.

When pressed it will stop blinking and be steadily lit, this tells you that you have the bid and are open to the 6670 for your communications.)

When communication begins ATTENDED frame will appear on the screen as follows:

"SETUP: 6670

Send Document

Diskette: MAN11

Name: RICKS TABLES

Comment: Tables for Perley"

When transmission is ended "Successful Completion" will appear on the screen under the "Comment: Tables for Perley"

When transmission is complete, be sure to log off the system so others can use it. Press CODE Key and Comm. Disconnect. This is a blank key just above the REQUEST key on the left keyboard.

Press END.

Type "i" to return to start for another job. Remove Communications diskette and reinsert second drive diskette.

Smoked plastic door on front of 6670 is the retrieve bin for documents printed. BE SURE to close this door after removing your documents or it will not begin printing the next job. (This tends to cause tempers to fray and enemies are made.)

D. PRINTING SELECTED PAGES ONLY

There may be times when you want to print only one page of a multiple page document. For example, you could be doing a 20 page document and corrections were needed on only one page which would not change the page length. You have already printed out the entire document once, you don't want to have to do it again for only one page. Printing the entire document just to get the latest version of one page is not only wasting paper, it is also wasting your time and the 6670's time. Textpack 4 users can print one page only but page numbers will not print. To print this page with the proper page numbers for all Textpacks, the following steps must be followed.

Go to the beginning of the document where the page numbering OCL has been entered. Before the ",end" type:

" ,mod_beg 4_,end"

This tells the 6670 that you want to begin printing machine page number 4 of the multiple page document which follows. (4 is an arbitrary number selected for illustration purposes only.) You must enter the machine page number, not the actual document page number. For example, your OCL for page numbering is on machine page 1, the actual document begins on machine page number 2 but when the document is printed, page number 1 prints on document page number 1 (machine page number 2). Therefore, the revised page you will be printing out

is machine page number 4 but will have document page number 3 in the margin.

After entering the OCL, go to the page immediately following the page you want to print. At the top of this page type in the following OCL:

" ,mod_beg 25_ ,end"(CR)

"beg #/" must be a page number greater than the total number of pages in the document.

End the job and send to the 6670. If you are satisfied with the page printed, BE SURE to re-enter the job and delete the OCL you have just put in (BOTH PLACES). If you forget to do this, the next time you need to print the entire document only that one page will print.

E. PRINTING ON 11x8½ PAPER

1. Entire Job on 11x8½

It is sometimes necessary in typing a document to set up a table or list on an 11x8½ sheet in order to get all the required information on the page in the proper format. The Astronomical Observers/Utilization Report is an example. This type of format requires some definite changes to the normal set up. If the entire document is to be done in this manner, the initial set up will be quite different.

After naming the document in the Typing Tasks frame and making the Document Comment in Create or Revise Document frame, choose 'b' Change Document Format.

In the Line Format Frame change 'c' Typestyle Number to 224 (15 pitch) and 'd' Lines/cm or in. to 3 = 3.15/cm or 8/in. This will automatically change the machine default margins to 23 and 108 and the

paper edge will change to 128. NOTE: The paper edge will change as you adjust the format of the job. You can adjust the margins as you wish, just as you would for anything else. The Page Format frame has also been adjusted for this typestyle to a machine default of First Line 9, Last Line 80. The Paper or Envelope Size will need to be changed here from 3 to 4 = 11x8½. Item 'e' Printing Paper source will not change. The paper will come from the 8½x11 paper drawer in the 6670 but the Laser head in the machine will rotate to print the pages.

The following pages are examples of printing on 11x8½ paper and contain the steps necessary to tell the machine how to do it.

First Line 11, Left Margin 23, Right Margin 132.

After naming the document and entering the comment go to Change Document Format and do the following set up.

In Line Format frame change "'c' Typestyle Number" to 224, change "'d' Lines/cm or in." to 3 and press ENTER. In the Margins and Tabs frame Left Margin can remain at 23 which, should the 11x8½ document be inserted into an 8½x11 document with a last line of 60, the margins should match up pretty well. Change the Right Margin to 132. It will seem to pass the page edge mark here but the page edge will adjust itself when you change the paper size in the Page Format frame. In the Page Format frame select First Line 11. This is consistent with a Left Margin of 15 in the standard 8½x11 document. Change "'c' Last Typing Line" to 64 and "'d' Paper Size" to 4. (A Last Typing Line of 61 will give you the approximate equivalent to a Right Margin of 85.) You are now ready to go to the typing frame and type the text.

This page is an example of how the document should look. Of course, if you are typing a wide or lengthy table, you will want to adjust your margins accordingly. In a document to be inserted into an 8½x11 document the First Typing Line should not be changed, the Last Typing Line could be changed to balance with the Right Margin in the basic document (as has been done here) but if your table is going to be long and you need the extra lines it is not necessary.

Remember to change "c" in the Send Document frame of the Communications Diskette to 107.

The following pages will explain how to change selected pages within an 8½x11 document to 11x8½.

2. Changing to 11x8½ Within a Document

Using the 5218 Printers, changing pages from 8½x11 to 11x8½ within a document is only a matter of changing margins and feeding the paper sideways instead of longways. When communicating to the 6670 however, it is not so simple. The only way to print on 11x8½ paper is to use Typestyle 224 for that page. This will involve changing margins as well as typestyle in order for the pages to be balanced within the document. The first step will be to put in the OCL required to change to the proper typestyle.

" ,mod_typ 224_ ,end(CR)".

This MUST be done at the bottom of the page before the 11x8½ is to be printed.

The format changes necessary for changing to 11x8½ are done in two places. The first Format Change, done at the bottom of the page and immediately following the OCL, will only be to change the margins. When margins are changed, the 6670 automatically feeds a new sheet of paper. To keep the entire document balanced with an 8½x11 page with First Line 7 and Last Line 60, the new margins will be 15 and 130. After entering the Format Change a prompt will appear, "Conflict between choices. Change Right Margin or Paper Size." This can be ignored. It will disappear as you go on. Now do a Page End.

At the top of the new page you are still on line 7 as the document was set up for all pages to begin on line 7. Here you will do the format changes necessary to make this page print in the proper place on the page. You must do this Format Change at the top of this page.

Select A - Line Format

a = 1 Single Space

b = no change

c = typestyle number - NO CHANGE (you are changing this with
OCL only, if you change it here also you will get an
extra page and horrible new margins).

d = no change

etc. no change

B - Margins and Tabs = No change. Margins have already
been changed, tabs may be changed if desired.

C - Page Format

a = First Line 11 (this balances with a Left Margin of 15).

b = First Line Following Pages - 7 (This would be 7 no
matter how many pages of 11x8½ follow but when doing
more than one the rest must start with 4 carriage
returns to make First Line 11. If there is more than
one page of 11x8½, it is better to make a separate
document to be inserted later.)

c = Last Line 61

d = Paper Size - 4 - 11x8½

Enter Format Changes. You will again see "Conflict between
choices. Change Last Typing Line or Paper size." The Displaywriter
does not know you have changed the pitch so just ignore it and go on.
Checking the status line at the top of the screen you will see the
first line is now 11.

You are now set to begin typing your table or text on 11x8½. The steps outlined on the preceeding pages have been done to demonstrate this section of text as it now appears.

When you have completed the table or text and you are ready to return to 8½x11, type the following OCL near the bottom of the page.

"mod_typ 86 193,end(CR)"

Note: 86.193 is telling the 6670 to return to prestige elite with symbol capability. The only typestyle that is not a 'double number', such as 86 193, is typestyle 224. All others are entered with a companion typestyle and both numbers must be shown.

After the OCL, Page End. DO NOT put in a Return to Format until you reach the top of the following page.

The page number which appears at the bottom of this page is not set up correctly since it was done with OCL at the beginning of the document. This will have to be taken out with Liquid Paper or White Out and put in with a typewriter in the appropriate place once the document has printed. It is better to place the page number in the left margin as it should appear if this were an 8½x11 sheet (the page number has been typed in here in the proper place but the page number put in by the machine has been left for illustration purposes). That way, when looking through the entire document the reader can see at a glance which page it is.

The following line is line 60 and contains the OCL to return to the original typestyle.

