

AUGMENT TECHNICAL MEMORANDUM

COMPOSE SUBSYSTEM REFERENCE

TYMSHARE INCORPORATED  
Office Automation Division  
20705 Valley Green Drive  
Cupertino, CA 95014  
June 7, 1982

## COMPOSE SUBSYSTEM REFERENCE

### INTRODUCTION

The AUGMENT Compose subsystem provides the capability to output documents stored in AUGMENT files on publication-quality devices such as photocomposition units, laser printers, and Computer Output Microform (COM) recorders. It also provides facilities for proofing and verifying the page makeup prior to final publication. The design of Compose is modular, allowing easy adaptation to many types of output devices.

### USING COMPOSE

#### Typical Steps To Use Compose

In order to publish a document using AUGMENT's COMPOSE subsystem, the document must be in an AUGMENT file. The Base subsystem of AUGMENT contains commands for inserting and editing text in AUGMENT files.

The format of the published document is controlled by "Output Processor directives". These are special text expressions which are inserted at the appropriate place in the document to control such aspects of document format as margins, indentations, spacing between lines and paragraphs, running headers and footers, and so on. The "Output Processor User's Guide" describes the usage and effects of each of the available directives. The directives for document publishing through COMPOSE are essentially the same as those for printing on workstation printers, line printers, or terminals. The main difference is that when you use COMPOSE, the "photocomposition measure" (a value accurate to one thousandth of an inch) will be used for the directive value, if provided. This allows the accurate positioning which is needed for most publication tasks.

When you have a document prepared with the desired format directives, the next step is to use the Compose subsystem Layout command to produce a "layout file". A layout file is a special type of file, not readable through normal AUGMENT or Exec commands, which contains an encoded representation of each page of the document. The layout file specifies fonts, character sizes, linework data, and exact location on the page for each textual or graphical entity on each page.

At this point, you should use one of the Compose facilities for examining the page layouts in the layout file. Often you will find mistakes in the format specification or see places where the appearance of the document can be improved. Compose provides two ways of doing this:

The Compose subsystem Proof facility requires the use of a

---

## COMPOSE SUBSYSTEM REFERENCE

---

Genisco G-1000 or Tektronix 4014 high-resolution display. Such a terminal is typically connected to the "printer" connection on an AUGMENT display terminal. Text and graphics are portrayed on the high-resolution display in their correct relative positions, one full page at a time. Compose proofing commands allow displaying any page in a layout file and printing the screen image on an attached hardcopy unit. This is the fastest way to review the format of a document, and will generally be the method of choice in publishing applications of any substantial volume.

The Describe facility produces a "description" of the page layout of any or all of the pages in a layout file. The description is typically printed on an ordinary alphanumeric printer. It gives the full details of the fonts, character sizes, and page coordinates of each line of text, all printed out in text form. This information is more exact than the Proof display, and should be examined in any case where details of positioning are critical, or to verify font usage if you are unsure of the effects of the font directives in the document. Also, this capability allows AUGMENT users not equipped with display units suitable for Proof to carry out occasional publishing of small to medium sized documents.

When a satisfactory layout file has been produced for the document, the Compose subsystem Translate command is used to create the file that will be input to the photocomposition unit, laser printer or COM recorder. COMPOSE will determine the correct format file format to use for the output unit specified in the user's profile or in the Layout command, and the appropriate data for input to that unit will be placed in a translation file. This file can then be transferred to the output unit by appropriate means (usually by writing it on a magnetic tape).

The next three sections of this document explain the layout, review, and translation steps in more detail.

### Making the Layout File -- The Layout Command

All the publishing functions of Compose work on layout files. The Layout command makes a layout file from an AUGMENT file or part of a file. The full syntax of the Layout command is:

```
Layout [(using view) VIEWSPECS] STRUCTURE (to)
File (to be named)/Append (to file) CONTENT LAYOUTDEVICE/OK
```

Certain format defaults are based on the viewspecs in the current file window. If the optional viewspecs are provided in the Layout command, they will be used instead. Explicit directives within the STRUCTURE will override corresponding viewspecs, regardless of their source.



---

## COMPOSE SUBSYSTEM REFERENCE

---

If `File` is specified, a new file (or new version) is created. Specifying an existing version of an existing file is an error, even if that version is deleted (but not expunged). If `Append` is specified and there is not an existing undeleted file with the specified name, an error is indicated. `Append` may not work for some device types; ask before using it.

The layout is produced to fit the capabilities of a particular output device. For `LAYOUTDEVICE`, typing `<OK>` selects the default device from your profile. Give the command word `Device` to override the profile and specify the device.

`LAYOUTDEVICE = Device DEVICE (model) MODEL (at vendor) VENDOR`

For `DEVICE`, the devices currently supported will be available as command words. Once you have chosen a device, you may have to specify for `MODEL` a command word for the model of that device. If that device and model are supported at more than one vendor, you have to specify which one for the command word `VENDOR`.

The choices available are controlled by the `index file`. Normally the index file will be a system file supplied with `AUGMENT`. In some special customer installations, the index file may be under the control of local systems managers or individual users. This is discussed under `Configuring Compose for Special Installations`.

`Messages have been entered in log` is displayed at command completion if a directive specified a type face or size which is not available on the device. The messages will tell what was used instead. These messages are placed in the file named `NOTIFICATIONS-IDENT` (where `IDENT` stands for the user's ident) in the login directory.

### Reviewing the Layout File -- The Describe and Proof Commands

#### Describing a Layout

The `Describe` command in `Compose` generates a description of a layout file in a special format which tells exactly where each element of the page layout is located and what typographic specifications will be used for setting type on the output unit. You can print this description on several types of devices and you can give a wide variety of specifications to control how the description should be printed. The syntax of the `Describe` command is:

`Describe Layout (from layout file named) CONTENT (on)  
OK/DEVICETYPE (specifications:) OK/DEVICESPECS`

Choices for `DEVICETYPE` are: `Workstation` (printer), `Terminal`, `Lineprinter`, or `File`. Typing `<OK>` at this point selects the

device specified by the Base profile feature "print, default".

Page 3

---

## COMPOSE SUBSYSTEM REFERENCE

---

Device type Workstation (printer) creates a workstation printer file in the Base profile specified directory for workstation printer files.

Device type Lineprinter creates a line printer file in the Base profile specified line printer directory and it is automatically printed by the line printer despooler.

Device type Terminal causes the description to be printed immediately on the terminal, which may be a display or typewriter type terminal.

Device type File creates a sequential file containing the description text.

Available DEVICESPECS for each DEVICETYPE are listed below. The meaning of Begin and End in the Describe command is different from that in the Base Print command; this is explained below. All other DEVICESPECS have the same interpretation as in the Base Print command. For all DEVICESPECS that you do not specify, you will get the default indicated in parentheses.

Workstation (printer): Begin (1), Copies (1), End (the end), Hold (don't hold), Priority (normal), Queue (no), Wait (no)

Lineprinter: Begin (1), Copies (1), End (the end)

Terminal: Begin (1), End (the end), Formfeed (simulate with linefeeds), Wait (no)

File (to be named): Begin (1), End (the end)

The meaning of Begin and End specifications in the Describe command is slightly different from that in the Base Print command; this is explained below. All other DEVICESPECS have the same interpretation as in the Base Print command.

Begin (on page) CONTENT: The description will begin with the page that you specify for CONTENT. AUGMENT calculates where to start the description by assuming the first page in the layout file is page 1 (regardless of the page numbers in the photocomposed document or the number of pages in the printed description), counting until it reaches the page you specified. The description begins with that page.

End (on page) CONTENT: The description will end on the page that you specify for CONTENT. AUGMENT calculates where to stop the description by assuming the first page in the layout file is page 1 (regardless of the page numbers in the photocomposed document or the number of pages in the printed description), counting until it reaches the page you specified. It stops generating a description when that page

ends.

Page 4

---

## COMPOSE SUBSYSTEM REFERENCE

---

### Proofing a Layout

The Proof command in Compose interprets the layout file you specify and displays a visual reproduction of the pages of the layout file on a graphics display (usually attached to an AUGMENT workstation). This visual reproduction shows pagination, line breakage, the vertical placement, and the justification of the line on the page. (asterisks on lines set flush left or flush right indicate that the full text appearing in the line cannot be fully displayed). The syntax is:

Proof Layout (file named) CONTENT OK

The first page of the layout file is displayed automatically as part of the Proof command.

If no extension is supplied with the layout file name, .LAYOUT will be assumed.

Typing <CTRL-0> on the workstation keyboard during page image creation causes page display creation to halt. The command prompt will be displayed and the user may give any Compose command desired.

After the Proof command is given, the following commands may be used to display other pages in the layout file in any order.

Back (one page) OK

Displays the page preceding the one currently displayed.

Next (page) OK

Displays the page following the one currently displayed.

Skip (to) Backward (number of pages) CONTENT OK

The Skip (to) Backward command in Compose displays the page that is a specified number of pages closer to the beginning of the layout file, counting from the current page.

Skip (to) First (page) OK

The Skip (to) First command in Compose causes the first page of the current layout file to be displayed.

Skip (to) Forward (number of pages) CONTENT OK

The Skip (to) Forward command in Compose displays the page that is a specified number of pages closer to the end of the layout file, counting from the current page.



---

## COMPOSE SUBSYSTEM REFERENCE

---

### Skip (to) Last (page) OK

The Skip (to) Last command in Compose causes the last page of the current layout file to be displayed.

### Skip (to) Page CONTENT OK

The Skip (to) Page command in Compose causes the page you specify to be displayed. The first page in the layout file is considered to be page 1, whether or not it bears the number 1.

If the graphics display has an attached printer, the Print command may be used to print all pages when displayed, or to print specific ones once. The profile feature "printer delay seconds" should be correctly set before using Print. Here are the forms of the Print command:

### Print Every (page automatically) OK

The attached printer will print the pages currently displayed by Proof every time you change the page displayed.

### Print None (automatically) OK

Undoes the effect of the Print Every (page automatically) command. It does not prevent you from using the Print Rest or Print Pages commands or the "print" button on your graphics display device.

### Print Rest (of pages) OK

The current page is printed; then each succeeding page in the layout file is displayed and printed one after another, until the end of the layout file is reached. May be cancelled at any time by typing <CTRL-0>.

### Pages: Print Pages (from) CONTENT (through) CONTENT OK

Beginning with the first page number specified, each page in the layout file is displayed and printed automatically, one after another, until the second page number you specify has been displayed and printed. May be cancelled at any time by typing <CTRL-0>.

Before using Proof the first time, the Compose profile features "proof, display device, type" and "proof, display device, setup" should be verified as being correct for the graphics display configuration.



---

## COMPOSE SUBSYSTEM REFERENCE

---

### Translating the Layout File -- The Translate Command

In general, each type of phototypesetter, COM recorder, and laser printer has a unique format for input data. Furthermore, different machines of the same model belonging to different users or service bureaus ("vendors") usually have different type sizes and styles available. The Compose subsystem Translate command takes one or more layout files and produces an input file acceptable to a particular device, model, and vendor/user. The general syntax of the two main forms of the Translate command is:

```
Translate Layout (file named) CONTENT (for) OUTPUTDEST  
(specifications:) OK/DEVICESPECS
```

This translates one layout file.

```
Translate Multiple (layout files - <OK><OK> after last) CONTENT  
... CONTENT OK (for) OUTPUTDEST (specifications:) OK/DEVICESPECS
```

This translates all layout files as though all the pages were in a single layout file.

Available OUTPUTDEST command words are:

#### Vendor

Use Vendor to indicate that the file should be translated for an offline photocomposition device (that is, one not directly connected to the computer on which you are using AUGMENT). The syntax is:

```
Translate Layout (file named) CONTENT (for) Vendor File  
(to be named)/Append (to file) CONTENT (specifications:)  
OK/DEVICESPECS
```

```
Translate Multiple (layout files - <OK><OK> after last)  
CONTENT (for) Vendor File (to be named)/Append (to file)  
CONTENT (specifications:) OK/DEVICESPECS
```

Available DEVICESPECS for destination Vendor are listed below. For all DEVICESPECS you do not specify, you will get the defaults indicated in parentheses.

```
Begin (on page) CONTENT (page 1)
```

The translation will begin with the page specified for CONTENT. AUGMENT calculates where to start the translation by assuming the first page in the first layout file is page 1 (regardless of the page numbers in the photocomposed document), then counting until it reaches the page specified.

End (on page) CONTENT (last page)

Page 7

---

## COMPOSE SUBSYSTEM REFERENCE

---

The translation will end at the end of the page you specify. AUGMENT calculates where to stop the translation by assuming the first page in the layout file is page 1 (regardless of the page numbers in the photocomposed document), then counting until it reaches the page specified.

The default extension for the translated file is .TRANS.

``Translation Processor In Progress'' is displayed when the translation begins successfully. When translation is complete, the message ``Finished - no notifications logged'' will normally appear. The message ``Messages have been entered in log'' is displayed instead if the layout file included some typographic specification not available on the device. The messages will tell what was used instead. These messages are placed in the file named NOTIFICATIONS-IDENT (where IDENT stands for the user's ident) in the login directory. This should happen only if the file containing font data for the device has been changed since the layout file was created. If this message occurs unexpectedly, contact TYMSHARE, the vendor, or whoever maintains the interface to that device, for information and advice.

### Rasterprinter, Workstation, Terminal

The current version of AUGMENT does not support these output destinations. They will be supported in a future release of AUGMENT.

TYMSHARE provides the files and programs used by Compose to make this work with certain installations. Therefore, users must do one of the following:

Make arrangements to use a TYMSHARE supported service bureau.

Contract with TYMSHARE for full support of the device they wish to use.

Acquire the use of a supported device and provide font data needed to set up the font mapper data file.

Provide their own interface (see ``Configuring Compose for Special Usage'').

In any case, the final file is sent (usually on tape) to the device.



---

## COMPOSE SUBSYSTEM REFERENCE

---

### CONFIGURING COMPOSE FOR SPECIAL USAGE

#### Customer Developed Interfaces

Compose is designed to allow customer installations or individual users to build custom interfaces which can be accessed by normal Compose commands. Whenever Compose is to be used with a particular device installation, two modules must be provided. There must be a font mapper data (FMD) file containing the specification of available fonts, character width data, character value translation, and so forth. This will generally be different for every site, even if the same model of device is being used. There must also be a translation processor to translate a standard AUGMENT layout file into the appropriate input format for the device. This will usually be the same for different installations with the same model of output device.

In consequence, it is considerably easier to interface Compose with a device of a type already supported. All that is needed is to prepare the FMD file, which is used by the Layout, Describe, and Translate commands. The Font Mapper document listed in the References specifies the format of the FMD file. Customer provided FMD files can be added to AUGMENT at no extra cost. Special arrangements (probably at extra cost) must be made if the font data is supplied in some other form.

To interface to a device not already supported, a translation processor must also be written. A translation processor is a program of non-trivial, but not immense, scope. The documents mentioned in the References contain sufficient information for a programmer proficient in the L10 language to write one. Nevertheless, customers intending to do this are advised to contact the AUGMENT Development Unit before beginning.

#### Linking Interfaces with Compose

The connection between device, model, and vendor names and FMD files and translation processors is established by an AUGMENT file called the "index file." The system default index file is located in the release directory (normally UREL) and is called COM-DMV-DATA.AUG. Beginning with AUGMENT version 10.14, a capability exists for a user to specify a different index file via a Compose subsystem profile feature. The index file is structured in the following way:

The name of each legal device type is placed in a first level statement.

The name of each model of each type of device is placed in a second level statement below the device. This must be done even if there is only one legal value for the "model".



---

## COMPOSE SUBSYSTEM REFERENCE

---

The name of each vendor (or user) of a given device and model must be placed in a third level statement beneath the device and model.

Under each third level (vendor) statement is a plex at level 4 containing the interface module filenames in operating system format. At present, two such modules are defined; thus two filenames must be provided. If no directory is specified, the current release directory will be assumed at execution time.

The first fourth level statement must contain the filename of the appropriate translation processor program.

The second fourth level statement must contain the filename of the appropriate FMD file.

All device, model, and vendor names should consist only of printable characters. There should be no "stray" characters anywhere in the file (except for the origin statement, which may contain anything at all).

The TYMSHARE-supplied FMD files and translation processors are located in the AUGMENT release directory. Sources for each are in the directory OPSRC on those systems where sources are supplied.

## COMPOSE PROGRAMMING REFERENCES

The following documents contain the additional design information needed to program an interface between COMPOSE and an output device.

Layout File Format <progdocs, layout-file, :wh>

Describes the internal format of the layout file. This is necessary information for programming a translation process.

Font Mapper <progdocs, font-mapper, :wh>

Describes the Font Mapper software and defines the format of the font mapper data file. In general, a font mapper data file is needed for each device with which COMPOSE is to be used. This document also contains information about how to set up font data specifications that can be processed by the FONTLOAD subsystem to produce the font mapper data file.

Translation Processor Interface <progdocs, translation, :wh>

Describes the interface protocol which must be employed to allow a translation processor to be used by the COMPOSE Translate command.