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DIFFERENCES BETWEEN NLS 8.5 AND AUGMENT 10.10

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About this document

This document describes the differences between the old NLS 8.5 and AUGMENT. It is fairly complete in the case of the Base subsystem, and much less so in the case of other subsystems, most of which have changed little. It does nothing to document the new subsystems now available, except to state their existence and capabilities. Most of the Base changes are invisible to users. Of the visible changes, most are syntactical, but a few are of other varieties.

AUGMENT is still evolving, and since various features have not been implemented yet, there may appear to be some minor gaps.

Differences between NLS 8.5 and AUGMENT which are not simply command word changes

General internal differences

Most of the differences between AUGMENT and the old NLS 8.5 are internal and invisible to the user. In many ways, NLS 8.5 had run into many upper limits, and sweeping internal changes were required to allow it to grow. Following is a list of many of those internal changes, some of which are visible to the user, and some of which are not.

More Consistent Command Language

The command languages of all subsystems have been reviewed and inconsistencies have been removed. Most commands have the form:

Verb Noun Operand <OK>

Numerous Bug Fixes

Many bugs that existed in NLS 8.5 which could not be fixed (for assorted internal reasons) have been corrected.

Additional Capabilities

AUGMENT has incorporated a number of new capabilities that have been suggested over the years by various clients and Tymshare staff.

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Easier Access to Subsystems

Users no longer need to use the Programs subsystem "Load Program" command to load a subsystem; the "Goto" command both loads and enters the subsystem. If the subsystem is not loaded or included upon entry to AUGMENT, after the command word Goto the user simply types <OPT> (the OPTION key or <CTRL-U>) and then the name of the subsystem. After this is done once during the session, or if the subsystem is already loaded or included, the subsystem is available as a command word, just as it was in NLS 8.5. The same is true for the Execute command.

More Simultaneous Subsystems Available

The internal management of the user programs buffer has changed drastically. This will make it possible for a user to have a large number of subsystems available at the same time. This will also make it possible for individual subsystems to be larger and more powerful. One subsystem will be able to draw upon another subsystem to increase its own capabilities.

Better Interface to Non-AUGMENT Tools

The mechanism for AUGMENT to interface to other tools has been substantially improved to make it easier and more consistent with AUGMENT subsystems. Users will probably not even be aware that AUGMENT is interfacing to non-AUGMENT tools. For example, the TENEX SPELL tool appears to users as merely another AUGMENT subsystem.

Better Screen Handling

There have been a number of changes in the way AUGMENT manipulates the display screen. These include:

Improved highlighting of "bugged" characters (in fact, the word "bug" has been changed to "mark", as explained later in this document)

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An additional two lines available in the file window

The ability to have a virtual file window that is up to four times larger than the physical file window, via the TENEX widescreen command

The ability to have an entire window displayed in reverse video

Use of a smarter algorithm for refreshing the screen, resulting in faster refreshes and reduced communication costs

Internal Architecture

The internal structure of AUGMENT has been made more modular, resulting in a clean split between the Frontend and the Backend. As well as being a better programming practice, this will make possible the eventual placement of the Frontend on a machine (mini/micro) local to users, and the placement of the Backend on a large remote machine. This eventual distribution of processing should lead to even further reductions in communication costs and increased responsiveness to users.

New Frontend

The Frontend has been completely redesigned and rewritten for AUGMENT. NLS 8.5 proved the feasibility of our Frontend approach, i.e., the use of the CML (Command Meta Language) Compiler and Language, and the use of the CLI (Command Language Interpreter); the AUGMENT Frontend has incorporated the lessons we learned from NLS 8.5 resulting in a more powerful CLI and an improved CML Language.

Improved Programming Environment

There are a number of new capabilities that improve the programming environment. These include: the use of templates to simplify programming and ensure standardization of coding style; an improved version of L10 that provides

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more powerful exception-handling features and that is moving more and more towards becoming a fully typed language; the use of DAD as a more powerful interactive debugger; and a general cleanup of all existing code.

General external differences

The differences mentioned in this section include things which the user will see as different, and most of which affect all subsystems in AUGMENT.

Addressing

Statement numbering has changed. There is no longer an "alphabetic zero". In NLS 8.5, the statement numbering proceeded: ... 1x, 1y, 1z, 1a@, 1aa, 1ab ... In AUGMENT, the numbering goes: ... 1x, 1y, 1z, 1aa, 1ab, 1ac ...

The behavior of "/" and "\" within address elements has changed. Formerly, you had to type an <OK> to have these address elements take effect; in AUGMENT, the address typed to that point is immediately evaluated and displayed, making typewriter mode AUGMENT more convenient.

All AUGMENT files now have the extension ".AUG", rather than ".NLS". AUGMENT will still work on ".NLS" files, but when they are updated, the extension will be changed to ".AUG".

The Display Screen

The AUGMENT display screen has four windows. The command, status, and viewspec windows occupy the top four lines of the screen; the rest is the file window, where your files are presented. The top two lines are shared by the status window (formerly called the Tty, or Tty-simulation window) and the viewspec window.

The status window occupies most of the two lines at the very top of your display screen. If you wish to see more than these two lines, you can use the Base "Set Status" command to move your status window to a file window and then use the Base "Reset Status" command to

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move your status window back to the top of the screen.

The viewspec window is in the upper-right corner of the screen and it now takes up two short lines rather than one longer line.

The name (or part of the name) of the subsystem you are currently using is now displayed at the beginning of the first line of the command window. The command in progress appears after the subsystem name. The feedback for addresses or text you have typed now appears in the command window in the sequence of the command; this feedback remains visible in the window until the command is executed.

The bottom 20 lines of your screen show the files you are viewing. This area starts immediately under the command window. More display areas can be created by dividing up existing ones with the "Break Window" command (see "Break" below for a description of Break Window).

In both NLS 8.5 and AUGMENT, viewspecs have two different functions. The first is to indicate characteristics of the view, and the second is as a filter for editing, as in the Delete <OPT> (filtered) Plex ... command. In AUGMENT, these two uses are separated by placing all references to viewing viewspecs at the end of commands, and moving editing viewspecs to be in front of the word for the structure they modify. A structure, possibly modified by filtering viewspecs, is called an FSTRUCTURE in this document. The exact syntax of FSTRUCTURE is given later.

<CTRL-T>: The response to <CTRL-T> has changed somewhat. AUGMENT reformats the TENEX <CTRL-T> response and gives a line in the following format:

```
Waiting 44614F Load 2.6 10:21-PST CPU used
271.9s Connected 2h 15m
```

The time of day and the connect time are easier to read, and the "F" after the "44614" in the example above indicates that the Frontend is

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waiting (for you to type something). "B" would indicate the Backend.

Rhythm: The rhythm of response to commands in AUGMENT is somewhat different from that in NLS 8.5. Whereas in NLS 8.5 the system may pause step by step as you type command words or addresses, in AUGMENT the echoes appear in the command line more quickly and any pause accumulates at the end of the command.

Three dots and arrow: You will no longer see three dots and an arrow while the computer is executing a command.

Exclamation point: An exclamation point will echo every time you type <OK>. This is not the same as the three dots and the arrow in NLS 8.5; it simply lets you know that the computer received the <OK>.

LOCAL RESET: In AUGMENT, when you use <LOCAL-RESET>, your command window will not clear. If you are in the middle of typing a command or some text and you use <LOCAL-RESET>, your command window will look exactly the same as it did before you reset. You may then continue the command exactly where you left off.

Temporary modifications are handled differently. They only remain in effect while a file is loaded. The complications and dangers of handling temporary modifications as they were in NLS 8.5 were thought to be too great. The new plan will preserve 99% of the utility and eliminate 100% of the danger associated with temporary modifications.

You no longer need to differentiate between typewriter mode and display mode AUGMENT when entering the system. Type "AUGMENT" at the TENEX "@" sign, no matter what kind of terminal you have. AUGMENT will do the right thing.

New features available in AUGMENT

The Spell subsystem allows you to check the spelling in AUGMENT files.

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You can now transfer files among hosts using Telecopy, available within AUGMENT.

The AUGMENT printing commands are more powerful. They support a wider variety of printing devices, and allow printing on a work station printer without the need for a special subsystem (the old LPOUTPUT).

In addition to the new Print commands, there is a new subsystem called Wpcontrol for controlling the printing of files on a work station printer, allowing a user to queue files, change the printing priorities, start and stop the printer, define characteristics for special unsupported terminals, and so on.

The Include sequence generator is now supported, and provides a facility for preparation of documents much larger than a single AUGMENT file will hold.

The NLS 8.5 Xtable experimental subsystem has been replaced with an improved, supported Table subsystem in AUGMENT.

The Check Mail command is universal, and allows you to see if there is new mail in the MESSAGE.TXT file without leaving AUGMENT. The old Verify File command is now "Check File", and is also universal.

There is an additional universal command, ";", which can be used for simple TENEX-like linking. If someone links to you, type a semicolon. Your entire screen will clear, and you can type any characters you wish. These characters and the characters typed by the person linked to you will appear on your screen, as if you were at the TENEX at sign ("@"). To get out of this mode, simply type <OK> or <CD> (CMD DELETE key or <CTRL-X>). In the new Conference subsystem, there is a "Comment" command that allows you to type text which will only appear in the status window.

Two new STRING nouns have been introduced in many of the common editing commands: Directive and Phrase. A Directive is just an Output Processor directive in the usual form -- the left and right delimiters are "." and ";", respectively, and the first character following the "." must be upper case. It is similar in many ways to the Link noun. A Phrase requires two MARKs (BUGs), and is defined to go from visible to visible. It is

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like Word, in that any character in the first and last visibles may be marked, and like Text, in that arbitrarily long chunks of text can be identified.

Upon logging in, users may sometimes be presented with a message for AUGMENT users. Typing any command will erase this message. To view the message again, use the Show Changes command.

NLS 8.5 Base subsystem commands which have been omitted (or are available elsewhere)

<CTRL-S>: The syntax-generating function is not yet working in AUGMENT.

Accept Connect: This command no longer exists in Base. Its capabilities and many others have been moved to a new Conference subsystem.

Archive: This command is unavailable. You may still archive files with a command in the Executive. In the future, all archival will be handled using the mail system. All recorded mail will effectively be archived. It will be possible to archive any type of file.

Connect (to) Display: This command is unavailable in Base. Use the new Conference subsystem.

Connect (to) Tty: This command is unavailable in Base. Use the new Conference subsystem.

Help: The syntax for the new command language is now included in the Help information.

Playback: This command does not exist in AUGMENT.

Process: When using Process statements, branches, groups, or plexes that were written for NLS 8.5, you must carefully check the syntax of the commands. There have been slight changes in the syntax of many commands. Try each command by hand before using it with "Process".

Process command structures are no longer allowed to write on themselves; self-modifying structures will no longer work and must be rewritten. It is also highly recommended that you now spell out each com-

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mand word entirely to avoid possible ambiguities introduced later by additions to the command language.

Output: The "Output" commands have all been moved under the "Print" command except for those concerned with AUGMENT-sequential file conversion, which are found in the "Create" command. Since the Print commands are somewhat experimental, we have temporarily left in the old "Output" commands. Users are encouraged to use the new "Print" command, but to remember that the old "Output" commands are still available. There is also a new Type command which is essentially identical (except for the first word, of course) to the old Print command.

Set Content Pattern On and Off: These commands do not exist in AUGMENT. Just use the command "Set Content" to type your pattern, and then put it into effect with `viewspec i` or `viewspec k`.

Simulate: In display mode, the only device you can simulate is a Typewriter. "Set Mode Typewriter" gives you the same effect as the NLS 8.5 command "Simulate Ti". To return to display mode, use the command "Set Mode Display".

Start/Stop Record: These commands do not exist in AUGMENT. There are "Start" and "Stop" commands, but they refer to starting and stopping the work station printer. They are described later in this document.

Bugging in AUGMENT

The main difference is that "bugging" will not be called "bugging" any longer -- it will be called "marking". The prompt will be "M:", and the act of marking a statement will be indicated by <MARK> in the syntax.

On some Datamedia terminals, when you mark a character, the character will be highlighted. On others, and on the AUGMENT 1200 terminal, a reverse video rectangle will surround the character. When you mark invisible characters that have a formatting effect, such as spaces, return characters, and tabs, a special highlighted character will appear. When you mark a space, you will see a tilde (~); when you mark a <TAB>; you

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will see a right angle bracket (>); when you mark a return character, you will see a left angle bracket (<), and when you mark a window, you will see an "X".

Other changes between NLS 8.5 and AUGMENT

Most of the major changes between NLS 8.5 and AUGMENT are listed below. A complete list which included every noise word change would be useless, so only in special cases are specific noise word changes mentioned. In almost all cases, the wording of the commands has changed only slightly, and the action of the command is unchanged. In those cases, only the new syntax is presented -- the commands work the same way.

In the syntax, commands which require a leading space are not indicated as needing it. It is not shown in the syntax, since almost all are identical with what they were in NLS 8.5, and the indication of leading spaces would tend to clutter the syntax more than it would help.

Since this document is meant for people who have been using NLS 8.5 for some time, the representation of the syntax is more condensed than it would be in the textbook. When more than one alternative is available, the alternatives are surrounded by braces {} and separated by a slash "/". The braces may be nested. Optional parts of a command are surrounded by brackets [], and special characters such as <OK>, <OPT>, and so on, are surrounded by angle brackets <>.

For example, FSTRUCTURE, mentioned earlier in this document, has the following syntax:

```
FSTRUCTURE = [<OPT> (filtered) VIEWSPECS] {Statement /
Branch / Group / Plex}
```

The square brackets indicate that the enclosed material can be skipped -- that one can optionally type <OPT> followed by viewspecs. After this is done (or not done), one has the choice of typing "s", "b", "g", or "p" for Statement, Branch, Group, or Plex, respectively. The square brackets do NOT indicate that <OPT> itself is typed. If OPT is necessary, it will be indicated, as above.

The new FSTRUCTURE has not yet been implemented in all possible places. When a user tries to use the command in such

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a place (Transpose, for example), a "not yet implemented" message will appear in the noise words.

A new selector appears in some of the commands. There are some cases where you usually want a default, but would sometimes like to type in an alternative; only very rarely would you want to mark (bug) or address the information. Examples are in the Append Statement command and in the Delete Modifications commands. You would like to delete modifications to the current file, or to append the statements with nothing between them. The new selector will allow this, and will give the prompt "OK/T/[M/A]". OK indicates the default, T means the new item can be typed in, and [M/A] means you can type <OPT> first in order to mark or address an instance of the item.

What follows now is a command-by-command list of the differences.

Accept

Accept Connect no longer exists in AUGMENT. The shared screen capabilities can all be found in the Conference subsystem.

Append

The most important change here is the fact that when you are prompted for the text separating the appended statements and when you do not begin typing it, an <OK> is interpreted as <NULL>. To mark the text that will appear between the appended statements, you must first type <OPT>. This new choice occurs in other commands, where an <OK> generally means "the default", and an <OPT> is required to mark something other than the default.

There is a new command, Append All Statements (in) FSTRUCTURE which existed in the subsystem Raphi. The text joining the statements is entered as described in the last paragraph.

Archive

The Archive command is not available in AUGMENT.

Users can temporarily use the TENEX Archive and Interrogate commands. In the near future, a new in-

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egrated mail system will handle all archive and retrieval requests. Any document sent "recorded" will effectively be archived.

Break

The Break Statement command is the same in AUGMENT as in NLS 8.5 except for a few noise word changes.

In AUGMENT, the Break Window command replaces the NLS 8.5 Insert Edge command. The syntax for Break Window is:

```
Break Window {Vertically/Horizontally} <at>
{<MARK>/Center (of window) <MARK>} (displaying
in) <MARK> {<OK>/Reverse (color in new window)
<OK>}
```

The color reversal option works on the AUGMENT 1200 terminals, and reverses the background in the new window.

Clear

This new AUGMENT command allows the user to clear the status window. Its syntax is:

```
Clear (status window) <OK>
```

Check

The new AUGMENT Check Mail command allows you to check your ARPANET mailbox for new mail without leaving AUGMENT.

```
Check Mail (status) <OK>
```

The old NLS 8.5 Verify File command is now included as a Check command. The syntax of the new command is:

```
Check File (structure for internal consistency
for file {<OK> / CONTENT <OK>}
```

The Check command is universal.

Comment

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This is a new universal command, useful primarily in conjunction with the Conference subsystem. Once screens are shared via the Conference subsystem, other subsystems can be entered, and the comment command will allow people in the conference to continue to make comments. The syntax is:

Comment TYPEIN <OK>

At the end of the Comment (after the <OK> is typed) all of the typed information is lost.

Connect

There is no longer a Connect (to) {Tty/Display} command. Those capabilities have been moved to the Conference subsystem.

Copy

There are a few noise word changes, but for most of the common cases, the syntax in AUGMENT is identical with that in NLS 8.5. The universal change to FSTRUCTURE will be reflected here, and the Copy File command deals slightly differently with default version numbers. The new Copy File command insists that version numbers remain the same, unless "Allow" is typed after specifying the names. The syntax for the Copy File command is:

Copy File (named) CONTENT (to a new file to be named) CONTENT [Allow (version numbers to be different)] <OK>

The Copy Directory command is slightly easier to use, and now has the following syntax:

Copy Directory (of) {TYPEIN / <OK> (connected directory)} (to follow statement at) LOCATION LEVADJ DIROPT

DIROPT is the same as it was in NLS 8.5 except that you are not asked after each specification whether you are finished. An <OK> terminates the list of options. A typical command might be entered as follows:

Copy Directory (of) <OK> (connected direc-

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tory) (to follow statement at) <MARK> <OK>
Date (of) Read Protect <OK> <OK>

The Copy Sequential command has been changed to Create Sequential file. See Create.

Create

The Create File command is identical except for noise word changes. Also, the command has been enhanced to allow specifying any structure and viewspecs, not just the current view. ("Rest of file" is now used for current view.)

In addition, all of the AUGMENT-sequential file conversion commands have been gathered under the Create command. The syntax for these new Create commands follows:

```
Create {Assembler/Sequential} (file named)
[<OPT> (append to file)] CONTENT {Force (upper
case) [Viewspecs VIEWSPECS] <OK> / Viewspecs
VIEWSPECS [Force (upper case)] / <OK>}
```

```
Create Augment (structure from sequential file
named) CONTENT (to follow statement at) LOCA-
TION LEVADJ (using) {One (<RET> to end state-
ment) / Two (<RET>s to end statement) [Justi-
fied (delete extra <SP>s)] / Assembler} <OK>
```

Delete

As was the case with Copy, most of the Delete commands remain unchanged except for a few noise word changes and the changes involved in the universal conversion to FSTRUCTURE. Since markers have not yet been implemented in AUGMENT, Delete Marker and Delete All Markers are temporarily unavailable.

Detach

After the command word Detach, Job is now a command word rather than just a noise word.

Disconnect

The Disconnect Terminal command in NLS 8.5 no lon-

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ger exists within AUGMENT. This capability has been moved to the Conference subsystem.

Enlarge

The Enlarge Window command replaces the NLS 8.5 Move Edge command. The syntax for the Enlarge Window command is:

```
Enlarge (window) <MARK> (to) <MARK> <OK>
```

Execute

This command is identical with the NLS 8.5 command. It will change relatively soon, however.

Expunge

The Expunge command has added capabilities in AUGMENT. In NLS 8.5, you can only expunge the connected directory, while in AUGMENT, you can specify the Login, Connected, or any other directory. You can also type <OK> to indicate the usual case, which is the connected directory. The new syntax is:

```
Expunge (deleted files in) {Directory {<OK> /  
CONTENT} / Login (directory) / Connected (di-  
rectory)} <OK>
```

Force

The syntax of the new AUGMENT Force command has been changed to allow for greater flexibility. It works in two modes, neither of which is exactly the same as in NLS 8.5. The differences arise when you wish to use something other than the default force mode. A different mode can be specified after "Force" by using <OPT>, and this mode can be carried over to repeated forces by means of the <RC> (the repeat command key). If only one instance of a nonstandard forcing mode is required, that can be typed at the end of the command, before the final <OK>, without <OPT>. The two versions of the syntax are:

```
Force (case) [<OPT> CASEMODE (for)] STRUCTURE  
(at) LOCATION <OK>
```

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Force (case) STRUCTURE (at) LOCATION [CASEMODE]
<OK>

CASEMODE = {Upper / Lower / First (letter
upper)}

Freeze

You can now freeze an FSTRUCTURE rather than just a statement. The command to unfreeze a statement is now Thaw rather than Release. The syntax is now:

Freeze FSTRUCTURE (at) LOCATION (with view-
specs) VIEWSPECS <OK>

An "o" or "p" viewspec is now interpreted as applying to the window, rather than to the frozen statements, as was the case before, so you can now freeze a structure and display it as frozen with one command.

Goto

This command works as it did in NLS 8.5. In addition, if a subsystem is required which has not yet been loaded, you can type Goto <OPT> SUBSYSTEM-NAME <OK>, rather than use a loading command in the Programs subsystem.

Insert

Except for some noise word changes, this command remains much the same as it was in NLS 8.5.

Help

Some of the prompts in the Help command have changed to more accurately reflect the choices available. The action of the command has remained unchanged. At first, the Help information for AUGMENT may not be completely up-to-date. We are trying to convert it to reflect all the changes as quickly as possible.

Jump

Almost all of the changes in the Jump command are noise word changes. However, there are some actual

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command word changes, and at least one new capability. The syntax of the Jump commands that have changed is presented below:

```
Jump (to) End (of) {Branch / Plex / File} (at)
LOCATION <OK>
```

These commands are all available elsewhere, but their addition here should make things easier for beginners.

```
Jump (to) Return {<OK> / File <OK>}
```

```
Jump (to) < >Locator <OK>
```

This command has been added to reach the on-line locator file (a guide to online and printed AUGMENT documentation located in the file <userguides,locator>).

The following Jump commands will no longer be available. Their capabilities are available in other commands:

```
Jump (to) Item (Jump (to) Link does the same
thing, except for the viewspec prompt, which
can be added + the end of the link). If you
need the equivalent of a link with viewspecs
(for split screen applications), Jump (to) Ad-
dress will provide that function requiring an
extra <MARK>.
```

```
Jump (to) Name <MARK>
```

```
Jump (to) File <MARK>
```

Load

This command no longer exists. It has been replaced by the command Jump (to) File (named).

Logout

The syntax has been extended to allow one to logout a job other than the present one. An <OK> indicates the current job, and a job number can be typed in to indicate another job. The new syntax is:

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Logout Job {TYPEIN <OK> / <OK>}

Note that since the Load command is gone, Logout does not now require a leading space.

Mark

This command is temporarily unavailable in AUGMENT.

Move

Most of the Move commands have remained the same (except for the usual FSTRUCTURE and noise word changes). The behavior of the Move File command has been improved, and it now does the right things with modification files. The old "Move Edge" command has changed to "Enlarge Window ...".

Output

The Output commands that were associated with file conversion have been moved to the Create command. All of the others are now taken care of (together with many additions) in the Print command. As soon as the Print command has stabilized completely, the Output commands will disappear.

Playback

This command is no longer needed, since the Record command does not exist in AUGMENT.

Point

This universal command has been added to support the Conference subsystem. It allows you to mark a character on the shared display when a conference is in session. The character on the screen remains marked until that portion of the screen is refreshed. The syntax is:

Point (on shared display) MARK

Print

The commands for producing hard copy and files from which to make tapes for photocomposition have been changed more extensively from the user's point of

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view than any other part of AUGMENT. All of the former Output commands except those that amounted to file type conversion, and all of the capabilities of what was formerly the Lpoutput subsystem together with many other enhancements, have been moved into the Print command. In typewriter mode, a simplified version called the "Type" command exists, so that all of the machinery of the Print command is not needed just to list out a statement or two.

Each user will have established, via his or her user profile, all of his own printing defaults. One user may use a work station printer, another may wish always to print directly on the hard copy terminal, and a third may always wish to use a spooler associated with his or her group. Although a user may occasionally wish to print via another mechanism, the printing command assumes that, unless told otherwise, the defaults will be followed. Thus, the typical user will be able to type <OK> at almost every option (there are usually 3), and the "right" thing will happen.

The new Useroptions subsystem has not been completely written yet, so in some instances, the Print command may seem to be a little clumsy to use. The default device for printing, for example, is your work station printer, so if you wish to use the Print commands to print on your terminal, you will specifically need to name Terminal as the output device.

The user is queried about whether the output is to be passed through the Output Processor (the old Output (to) Printer/Terminal/... command) or not (the old Output Quickprint/Sequential/... command). Further, the user can now print just a portion of a file (an FSTRUCTURE) rather than the rest of the file, which was the old default.

Printing from a work station printer is now much more reliable than printing with the Lpoutput subsystem used to be, and users have the opportunity to start and stop printing at specified pages, delete printing requests, and to change the printing priorities.

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A complete description of all of the printing capabilities is beyond the scope of this document, but the syntax of some of the more common printing commands is presented below:

```
Print {FSTRUCTURE  VIEWSPECS/File  VIEWSPECS
/Rest  VIEWSPECS  / <OK>} (on device) {
Lineprinter / Terminal / Workstation (printer)
}<OK>
```

(specifications:) <OK>

When describing the structure, <OK> means the rest of the file. When one is queried for the device, <OK> means the default device. Thus, the typical user who wishes the equivalent of what is now done with the Output Quickprint command would simply type:

```
Print File <OK> <OK> Quickprint <OK>
```

The only difference is that the output may come out on the work station printer, if that is the default. The default formatting is through the Output Processor unless you specify Quickprint when prompted for specifications.

Process

The syntax of the command is the same; the behavior of the process in some circumstances has changed. See earlier in this document.

Rename

A new command with semantics identical with Move File. Its syntax is:

```
Rename (file named) CONTENT (to be named) CON-
TENT <OK>
```

Renumber

The Renumber Sids command is now the Reset Sids command.

Replace

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All of the capabilities of the NLS 8.5 Replace command exist in AUGMENT. In addition, all of the NLS 8.5 Substitute capabilities are now found in the AUGMENT Replace All command.

The syntax for the Replace All command is:

```
Replace All (occurrences, in) FSTRUCTURE (at)
LOCATION (of old) {Character / Link / Number /
Pattern / Text / Word / Visible / Invisible /
Directive / Phrase} CONTENT (by new STRING)
CONTENT [Status] [Also (of old STRING) CONTENT
(by new STRING) CONTENT] [Confirm (each in-
stance before replacing)] <OK>
```

The Also and Status parts can be repeated as many times as desired to cause multiple replacements.

The capability to confirm each instance before replacement will not be available as of the first release of AUGMENT, and thus one final confirm can be clipped off the end of the command.

Reset

The NLS 8.5 Reset command has been changed considerably, and now is quite well integrated with the Set and Show commands. In most cases, a parameter can be Set, Reset, and Shown. In all cases except for Reset Sids, the Reset command resets the particular value back to the default. The new Reset commands are listed below:

```
Reset Force (mode to default) <OK>
```

```
Reset Link (default directory for file) {<OK> /
CONTENT} <OK>
```

```
Reset Terminal (mode to default) <OK>
```

```
Reset Name (delimiters in) FSTRUCTURE CONTENT
<OK>
```

```
Reset Protection (mode for file) {<OK> / CON-
TENT} (protection.type:) {Augment / Exec} <OK>
```

```
Reset Sids (in file) <OK>
```

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Reset Status (window to default position) <OK>

Reset Temporary (status for modifications for file) {<OK> / CONTENT} <OK>

Reset Viewspecs <OK>

Reverse

The new AUGMENT reverse command has two uses: It can reverse the color value of a window (black background to white background, or vice-versa), and it can be used to invert the order of the branches in a plex or group. The syntax for both uses is:

Reverse {Plex / Group} (at) LOCATION <OK>

Reverse Window (color value in window at) <MARK> <OK>

Set

The new Set command allows one to set most of the options which can be Shown or Reset. The syntax of most of these commands can be figured out using the question mark. There are very few new options; the wording is slightly different in places, and this often means just the noise words.

Content patterns are now just set; to turn them on and off, simply use the i, j, and k viewspecs.

Setting protection is the most changed of the Set commands. The syntax of all the protection setting options follows:

Set Protection (mode for file) {<OK> / CONTENT <OK>}

(protection type:) Augment {On <OK> / Off <OK> / Accesslist CONTENT}

Set Protection (mode for file) {<OK> / CONTENT <OK>}

(protection type:) Exec

{Code (in octal) CONTENT /

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{Permit / Restrict}

{Append / Execute / List / Read / Write}

(for) {Group / Self / Universe}

(more?) {Status / ANSWER}}

In setting AUGMENT protection, the Accesslist option allows a user to type in the list of idents, and the command will make sure that a valid AccessList is set up, and that protection is turned on. The Exec protection commands allow a user to set the octal code, or to loop, and specify every feature of the protection (s)he wants set.

Every user is assumed to have a workstation printer. To tell AUGMENT that for the remainder of this particular session that you have a different device, you can use the Set Print command. Its syntax is:

```
Set Print (default device for session to)
{Workstation (printer) / Lineprinter / Terminal} OK
```

Show

In most cases, the AUGMENT Show command shows the status of values which can be Set and Reset. There are a few other things which can be shown, and their syntax is presented below:

```
Show Status (file) {<OK> / CONTENT <OK>}
```

This is the old Show File Status command.

```
Show Content (pattern currently in force) <OK>
```

```
Show Return (ring) {<OK> / File <OK>}
```

```
Show Modification (status for file) {<OK> / CONTENT <OK>}
```

```
Show Disk (space status for) {File {<OK> / CONTENT <OK>} / Directory {<OK> / CONTENT <OK>} / Connected (directory) / Login (directory)} <OK>
```

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Show Directory (of) {<OK> / CONTENT <OK>}
DIROPT

Show Version (of current AUGMENT system) <OK>

This command is useful for identifying the exact version of AUGMENT you are using. If you have trouble with something, and send in a report, it would be useful if you would include the information obtained from the Show Version command.

Show Changes (to system) <OK>

This command is used to see the most recent AUGMENT system message. Typically, these messages will be used to announce new features or changes in the AUGMENT system.

Sort

The Sort command remains essentially unchanged. Complicated sorting tasks can still be accomplished using the Sort subsystem, however.

Simulate

This NLS 8.5 command is now available as the AUGMENT Set Terminal command.

Start

This command, and "Stop", are used to turn on and off the work station printer. The syntax is:

Start Workstation (printer) [<OPT> (spooling mode)] <OK>

Spooling mode is one of the new available features of the printing commands. When the printer is started in spooling mode, it continues to look in the directory for printing files all the time that the user is logged in, and as soon as one appears in the directory, it is printed. This is a useful feature if many users want to print on a single printer connected to someone else's work station.

Stop

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This command, and "Start", are used to turn on and off the work station printer. The syntax is:

```
Stop Workstation (printer) {Immediately / End-  
of-file} (use START command to restart work  
station printer) <OK>
```

End-of-file means after the currently printing file has finished printing. Immediately means after the end of the current (TENEX) page, so it may not mean absolutely immediately.

Substitute

The NLS 8.5 "Substitute" is now "Replace All" in AUGMENT.

Quit

This command is similar to the NLS 8.5 command. It may change relatively soon, however. The Quit Nls and Quit To SUBSYSTEM commands will no longer be useful when the new scheme is introduced for moving around within subsystems. For now, one can always Quit Nls or Quit To SUBSYSTEM by doing extra Quit's.

Thaw

This is the NLS 8.5 Release command. The syntax is:

```
Thaw STRUCTURE (at) LOCATION <OK>
```

```
Thaw All (frozen statements) <OK>
```

Transpose

The Transpose command is identical with the NLS 8.5 Transpose command, except for the possibility of transposing an FSTRUCTURE. Because of the new Type command, the Transpose command is now second-level (requires a leading space) in typewriter mode AUGMENT.

Trim

The Trim command is extended in much the same way

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as the Expunge command has been -- one can trim other directories than the connected one. The syntax for the extended command is now:

```
Trim (files in) {Directory (named) {<OK> / CONTENT} / Connected (directory) / Login (directory)} (to keep number of versions) CONTENT <OK>
```

Type

This is equivalent to the old TNLS Print command.

Undelete

In addition to being able to undelete files, users will now be able to undelete the modifications to their files. The command syntax will be:

```
Undelete {File (named) CONTENT <OK> / Modifications (to file) {<OK> / CONTENT <OK>} (really?) <OK>}
```

Update

The syntax of the Update command has changed, and a new capability has been added -- the capability to update files other than the current file. The syntax is straightforward, but new:

```
Update (file) {<OK> / New (version) / Old (version) / Renamed CONTENT <OK> / Compact (new version) / Named CONTENT (to be)
```

```
{New (version) / Old (version) / Renamed CONTENT / Compact (new version)}} <OK>
```

Verify

This command is now available as Check File (structure for internal consistency).