

Debug Custom Displays

**L53218
AG**

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Revision 06– June 11, 1998

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Acronyms

DDB	Display Database
LCN.....	Local Control Network
NaN.....	Not a Number
NCF	Network Configuration File
NG	Network Gateway
PE	Picture Editor

Parameters

OP	Output
PV	Process Variable
SP	Setpoint

References

Publication Title	Publication Number	Binder Title	Binder Number
<i>Picture Editor Reference Manual</i>	SW09-550	Implementation/Engineering Operations-2	TPS 3032-2
<i>Actors Manual</i>	SW09-555	Implementation/Engineering Operations-2	TPS 3032-2

Introduction

Module Overview

About this module

This course module provides insights into troubleshooting custom display problems, including those that do not have specific error messages. The custom display Print Command is presented as an aid to troubleshooting various error conditions.

Objectives

Given custom displays containing problems, identify and correct the problems.

Sample test items

This course module's Criterion Test includes the following items:

Correct the errors in at least three of the custom displays contained on your cartridge disk AGB1. List the directory descriptors to find where the displays with errors are stored:

LS \$Fn -D -FD

Debugging Custom Displays

Troubleshooting Guide

Symptoms and actions

Look through the symptoms of common custom display problems listed in Tables 1 and 2 :

- Table 1—Subpictures
- Table 2—Values, Targets, and Conditions

Table 1 Subpicture-Related Problems

Symptom	Probable Cause and Action
When added to display, <i>subpicture does not appear</i> in edit region, or does not appear at the selected coordinates.	Origin on subpicture incorrectly placed. Action: SET ORIGIN
After adding subpicture to the main picture, unable to modify the subpicture with the ADD CONDITION or ADD BEHAVIOR to subpicture.	Subpicture was built without adding the Inherit feature to the object you are attempting to change. Action: ADD INHERIT to subpicture before adding to display.
Unable to ADD CONDITION or ADD INHERIT to subpicture source code.	Original subpicture was built without the Inherit feature. The final subpicture was created using Add Subpicture, then saved to the original filename. Action: Rebuild the subpicture.
When added to display, <i>old version of subpicture appears</i> instead of new version`.	Display contains at least one old version of the subpicture and therefore does not read in the new subpicture source code. Action: Use RE SUB X X Result: Replaces all occurrences of the old version of subpicture X in the display with the new version of subpicture X.. or Action: Rename the new version of the subpicture.
Cannot locate new subpicture Y when doing REPLACE SUB X Y (SUB NOT FOUND).	Sub Y is not in same directory as pathname. Action: Use RE SUB X NET>DIR>Y
Unable to <i>compile</i> subpicture	Subpicture contains generic references, such as &A.PV or &A.
The <i>variant</i> in the display blinks every four seconds.	A variant may overlay a subpicture. Action: Move the variant to expose the subpicture, SEL VAR; MOV. Then delete the subpicture.
When added to display, variant <i>leaves black hole</i> on display.	The “bad value” condition for variant is wider than subpicture.

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Troubleshooting Guide, Continued

Symptoms and actions, continued

Table 1 Subpicture-Related Problems, continued

Symptom	Probable Cause and Action
The subpictures in a variant appear in an <i>inappropriate order, or the wrong subpicture</i> appears.	<p>There are several conditions being tested in the variant. The first true condition encountered will have the THEN statement executed.</p> <p>Action: Change the order of the logic in the variant if necessary.</p>

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Troubleshooting Guide, Continued

Symptoms and actions, continued

Table 2 Target, Value, and Condition Related Problems

Symptom	Probable Cause and Action
Display shows @ symbols rather than Values.	You may have forgotten to initialize the DDB variables to a "startup" value. Action: Use the DEFINE INITIAL to initialize the DDB variables.
Unable to use the SP, OP, or AUTO, MAN, NORM keys when using a Custom Change Zone.	Keys are not activated. Action: Add USER_CZ actor to target that calls up custom change zone.
Part or all of Target action turns red when you attempt to enter the action.	Spelling error (example: point name.parameter), syntax, or ^ character.
Message: LOCAL NAME TYPE EXPECTED	Suggests User DDB declare file not loaded. Action: Load User or Equipment List DDB file before modifying display.
When the display is called up, the Target action varies.	Targets overlap. Action: Separate the targets or delete one target.
Condition does not work.	Spelling errors. Action: Check point.parameter for spelling errors (example: misspelling PV states, using the letter O instead of zero). To avoid this problem, use a test such as: IF EXTERNAL (POINT.PV) = POINT.PVSTATE(1) Then SET RED
Cannot see condition on invisible Target.	Only solid and box targets can have conditions added to them.
Two or more objects have the same Condition, but you really wanted the Condition on only one of the objects.	When you copy an object that has conditional behavior, you also copy the condition. Action: Select the condition, then enter M to modify it. When the port appears, press the [CLR-ENT] key to capture the condition in a buffer. Delete the condition, then add it to only one object using the [INS LINE] key to place the condition in the port.

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Troubleshooting Guide, Continued

Error messages Table 3 describes common Picture Editor compiler error messages. Appendix A of this course module contains the *complete* list of possible Picture Editor compiler error messages.

Table 3 Common Picture Editor Error Messages

Error Message	Cause	Action
ABSTRACT OVERFLOW	Object file has reached maximum limit: R400 -150 blocks R500 - 250 blocks	Do one of the following: <ul style="list-style-type: none">• Remove something from the display.• Reduce the number of subpictures within the display.• Work with the Collection Set:<ul style="list-style-type: none">– reduce collection rate, or– make more than one Collection Group, but no more than four.
COMPILE ERROR	Invalid database reference	If nothing is blinking, do the following: <ul style="list-style-type: none">• Check code in DEFINE INITIAL, FINAL, HELP, ASSOC, PAGE FWD, PAGE BACK, DISP FWD, and DISP BACK.• Try the VERIFY command.
COLLECTION SET OVERFLOW	Too many database references within display or overlay (512 max.).	Reduce the number of references.
ILLEGAL VARIABLE	A point is referenced that does not exist in the system, or before compiling, you forgot to load the User or Equipment List DDB file.	Load user DDB file (LOAD filename). Load Equipment List DDB file (LDQ filename).

Error symbols Table 4 lists the custom display runtime error symbols for values:

Table 4 Runtime Error Symbols

Symbol	Description
@	Configuration error: <ul style="list-style-type: none">• Wrong ID for parameter (parameter does not exist).• DDB value was not initialized.• References a point that has been deleted, or deleted and then re-added.
!	Unknown to system: <ul style="list-style-type: none">• Point is not loaded into the data owner.• References a point that has been deleted, or deleted and then re-added.
*	Format error.
?	Communication error across LCN—value is not accessible.
-----	Value error—bad value (NaN).

Picture Editor PRINT Command

Description

The Picture Editor PRINT command prints descriptions of all display objects or just those selected by the user. You can print to a specified printer or to a named file. The Picture Editor automatically assigns the .DX suffix to the print file.

Default pathname

Table 5 describes variations of the Print command pathname.

Table 5 Print Command Pathnames

Pathname	Description
PR \$Pn	Prints to the named printer.
PR NET>dir>filename	Prints to the named file.
PR NET>dir	Display name is used for filename.
PR filename	Default media and directory.
PR >dir	Default media and filename.

Command options

These options can be used with the print command:

- Comment (COM)
 - Debug (DEBUG)—same as PRINT, before R400
 - Select (SEL)
 - Symbols (SYM)
 - Append (APP)
-

Print options

These display objects can be printed using the Select command option:

- | | | | |
|--------------------|-------------------|--------------------|-----------------|
| • Bar (BAR) | • Line (L) | • Subpicture (SUB) | • Value (VAL) |
| • Condition (COND) | • Solid (SOL) | • Target (TAR) | • Variant (VAR) |
| • Comment (COM) | • Special Targets | • Text (T) | |
-

Continued on next page

Picture Editor PRINT Command, Continued

Print command Table 6 describes variations of the Picture Editor PRINT command

Table 6 Variations of Picture Editor Print command

Command	Description
PR NET>pathname COM	Prints the comment for the entire display (created using Define Comment).
PR NET>pathname SYM	Prints the Collection Set data (symbols), including: <ul style="list-style-type: none">• variable name and type,• collection rate and group ID,• DDB type and index number.
PR NET>pathname SEL	Calls up Print Option Menu (see Figure 1) from which the types of objects can be selected for printout. The actual display objects must have been previously selected (blinking white).
PR NET>pathname SEL zzzz	Prints only the preselected (blinking white) display objects of the specified type: zzzz = BAR SUB COND TAR COM TEXT LINE VAL SOL VAR
PR NET>pathname APP (nnn)	Appends printout to existing file. optional nnn = SEL SEL zzzz COM SYM DEBUG
PR NET>pathname DEBUG	Prints complete description of objects in the picture. Same as print option before R400.

Continued on next page

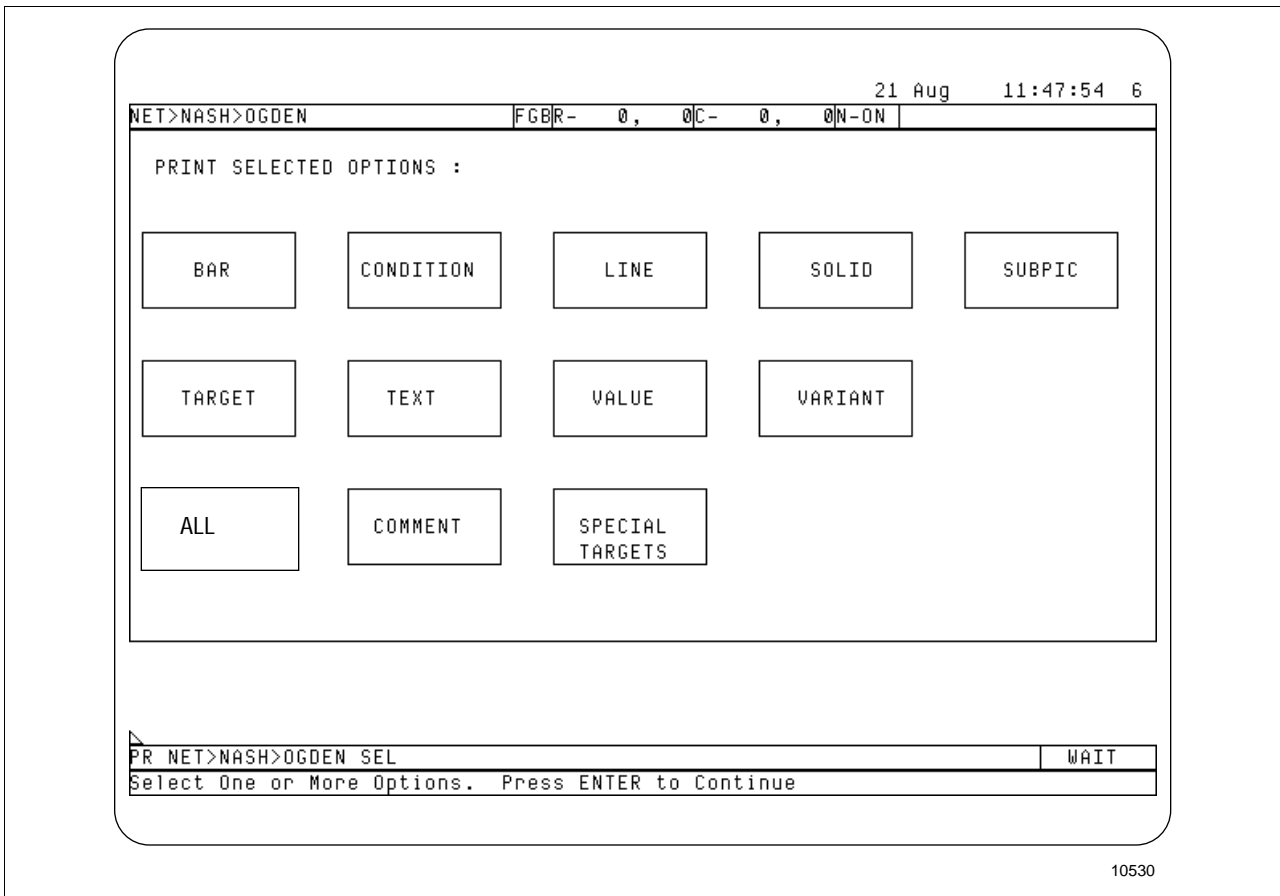
Picture Editor PRINT Command, Continued

Print options menu

Figure 1 is the Print Options Menu from which you can select the objects you want printed, including comments and special targets:

- Comments—Comments defined using the DEFINE COMMENT command (apply to displays, overlays, and subpictures).
- Special Targets—Actions defined using the DEFINE command, including Initial, Final, Assoc, Page Fwd, Page Back, Disp Fwd, and Disp Back.

Figure 1 Print Options Menu



Picture Editor Multiple Print Command

Description

On Release 430 systems and later, a Picture Editor Multiple Print (MP) command is available to output the descriptions for a list of schematics to separate files. Output is not to a printer.

First, you create a text file (.EL, edited list) that lists the pathnames of the schematics you want printed; then, from the Picture Editor execute the Multiple Print command, naming the pathname of the text file in the command.

After the Multiple Print command is executed, each schematic print file (.DX) is generated in the same directory as its respective schematic source file.

An Error Report file (.ER), with the same file name and in the same directory as the .EL file, that summarizes the results of the Multiple Print operation is produced.

You may press the [ESC] key to go to the Command Processor, then use the Print (PR) command to view the .ER and .DX files or use the DO command with the PR command to send the files to a printer.

Multiple Print command format

The format of the Picture Editor Multiple Print command is shown below.

MP [pathname]

[pathname] = Full or partial pathname to the .EL schematic list text file.

- If a full pathname is *not* specified, the default pathname is used.
- If a full pathname is specified, the default

pathname

is changed to the specified pathname.

Examples:

MP NET>PICT>SLIST

MP SLIST

Abort command

To abort the Multiple Print command
hold down [CTL], and
press [BREAK]

The operation aborts after processing the current schematic source file.

The [CANCEL] key halts other Picture Editor operations; however the Multiple Print command is a batch operation and is halted by [CTL] [BREAK].

Continued on next page

Picture Editor Multiple Print Command, Continued

Print options

There are several print options available for the Multiple Print command. Add the print option after the schematic source file name in the schematic list text file (.EL). The following example includes the SYM print option:

```
NET>PICT>SCHEM1 SYM
```

Table 7 describes the Multiple Print options.

Table 7 Picture Editor Multiple Print Options

Multiple Print Option	Description
[pathname] COM	Prints the comment for the entire display. (Comments are created using the Define Comment command.)
[pathname] SYM	Prints the Collection Set data (symbols), including <ul style="list-style-type: none">variable name and type,collection rate and group ID,DDB type and index number.
[pathname] APP	Appends printout to existing file.
[pathname] DEBUG	Prints complete description of objects in the picture. Same as print option before R400.

ATTENTION

ATTENTION—The Multiple Print command overwrites existing schematic print files (.DX) that have the same pathname as those in the schematic list text file, unless you specify the Append option.

Schematic list text file

The schematic list file (.EL) contains pathnames to schematic source files, and may include comments, if desired. The following rules apply:

- Each comment line must begin with a left curly brace ({}).
- If a partial pathname is specified, it is used in conjunction with the default pathname.
- Specification of a full pathname reinitializes the default pathname.

Example:

```
{The following two files execute using the
{Picture Editor default pathname.
SCHEM1
SCHEM2
$F2>PICT>SCHEM3
NET>DISP>SCHEM4
{The following file executes as NET>DISP>SCHEM5.DS
SCHEM5
```

Continued on next page

Picture Editor Multiple Print Command, Continued

Error file

If an error occurs during execution of the Multiple Print command, a print error is placed in the .ER file, and processing of the schematic list file continues. The .ER file is generated with the same name as the schematic list file.

Example:

SCHEM1	Success!
SCHEM2	Print Operation Failed
\$F2>PICT>SCHEM3	File does not exist
NET>DISP>SCHEM4	Read Operation Failed
SCHEM5	Success!

Lab Exercise

PE Print Command

Introduction

In this exercise, you will use the Picture Editor print command to see what the various print options provide.

Instructions

Perform the following Picture Editor print commands using any of the custom displays on your cartridge disk, DEMO>KILN for example. Look at each resulting printout.

Step	Action												
1	Select the entire display or several objects on the display, then enter command: PRINT \$Pn Result: A listing of all objects in the display is printed to named printer.												
2	Select the entire display or several objects on the display, then enter command: PRINT \$Pn SEL Result: Print Options Menu appears.												
3	Select one or more options, then press [ENTER]. Result: A description of selected objects is printed to named printer.												
4	Select the entire display or several targets, then enter command: PRINT \$Pn SEL TAR Result: A description of the selected targets in the picture is printed												
5	Select the entire display or several objects on the display, then enter command: PRINT DEMO SEL Result: Prints to text file DEMO.DX.												
6	Enter command: (NOTE: Will print over prior .DX file.) PRINT DEMO SYMBOL Result: Prints the following variable data to file DEMO.DX: <table><tr><td>Variable Number</td><td>Collection Rate</td><td>Target Type,</td></tr><tr><td>Name, Type</td><td>Group ID</td><td>Target Subtype</td></tr><tr><td>Subtype</td><td>DDB Location</td><td></td></tr><tr><td>Reference Count</td><td>DDB Reference</td><td></td></tr></table>	Variable Number	Collection Rate	Target Type,	Name, Type	Group ID	Target Subtype	Subtype	DDB Location		Reference Count	DDB Reference	
Variable Number	Collection Rate	Target Type,											
Name, Type	Group ID	Target Subtype											
Subtype	DDB Location												
Reference Count	DDB Reference												

PE Multiple Print Command

Introduction

In this exercise, you will use the Picture Editor Multiple Print command to see how easily you can document a batch of schematics with a single command.

Instructions

Create a text file that lists the schematic source files to be printed.

Step	Action
1	Insert AGB1 in the left disk drive and AGB2 in the right disk drive.
2	<p>Create a text file named SCHEMS.EL in the WORK directory on your AGB1 disk.</p> <p>List the following schematic source files in the text file with the SYM print option specified:</p> <pre>TOPMAP SYM SYNE>BLINK SYM DUMMY SYM \$Fn>SYS>PEEK SYM (n is the number of your AGB2 disk drive) SOFTKEYS SYM</pre> <p>RESULT: The SCHEMS.EL file exists.</p>
3	<p>From the Picture Editor, execute the following Multiple Print command.</p> <pre>MP \$Fn>WORK>SCHEMS</pre> <p>(n is the number of your AGB1 disk drive):</p> <p>RESULT: The MP command reads the .EL file, then attempts to read each schematic into the Picture Editor and generates its .DX file. Each .DX file contains the schematic's Collection Set (SYMBOL) information. A SCHEMS.ER file is created in the WORK directory summarizing the results of the operation.</p>
4	<p>View the SCHEMS.ER file in your WORK directory.</p> <p>RESULT: An error is indicated because TOPMAP.DS does not exist in the WORK directory and DUMMY.DS does not exist in the SYNE directory.</p>
5	<p>View the .DX file for one of the schematics. The .DX files are in the same directory as the .DS files.</p> <p>RESULT: The collection set parameters are contained in the file.</p>

Using Printout to Troubleshoot

Introduction

In this exercise, you will do the following:

- select and print portions of a custom display to a text file,
- use `DEBUG` and `SYMBOLS` printout to troubleshoot errors.

Before you begin

Before you begin, do the following:

1. Copy the displays from the **DEBUG** directory to the **WORK** directory on your **AGB1** disk.
2. Before accessing the Picture Editor, set the pathname in the Command Processor to: `SP $Fn>WORK`

(This technique ensures that the correct pathname is present when you escape from the PE to do some work in the Command Processor.)

Print display

Follow the procedure below to print the display named BLEND to a file on your cartridge disk.

Step	Action
1	Read display BLEND into the PE from directory WORK. Result: The source for BLEND appears on the PE display.
2	Enter this command: PRINT BLEND Result: A text file named BLEND.DX is written to directory WORK.
3	To view the file, press [ESC], then enter this command: PRINT BLEND.DX Use [PAGE FWD] and [PAGE BACK] to scroll through the screens.
4	To view the file using the Text Editor (TE), enter this command: ED BLEND.DX Result: The file is displayed. (The first line identifies the pathname for the display text file.)
5	Look through the printout and locate the following: <div style="display: flex; justify-content: space-between;"> <div> <p>__ Comment</p> <p>__ Subpicture HVALVE</p> <p>__ Text __</p> <p>__ Value</p> <p>__ Target</p> </div> <div> <p>__ Bar</p> <p>__ Variant</p> <p>Conditional</p> <p>__ Initial</p> <p>__ Total Number of Variables</p> </div> </div>
6	Return to the PE and print just the targets of display BLEND: PRINT BLEND SEL TAR

Continued on next page

Using Printout to Troubleshoot, Continued

Slick Trick

If you forget to select before printing, adding, copying, moving, or scaling, just use the [INS CHAR] key, type SEL;, then press [ENTER]. This allows you to recover without losing the command.

Try it:

Step	Action
1	Read display BLEND into the Picture Editor.
2	Enter this command: PRINT BLEND SEL TAR Result: Error message appears SELECT OBJECT BEFORE PRINTING.
3	Press the [INS CHAR] key, then type SEL ;
4	Press [ENTER] Result: Message appears ENTER SELECT COORDINATES.
5	Select desired coordinates, then press [ENTER]. Result: Message appears PRINTING TO A FILE.

Continued on next page

Using Printout to Troubleshoot, Continued

NOTE

NOTE—As you resolve display errors in the remainder of this exercise, describe the corrections in the space provided at the bottom of each page.

Error 1

Locate the first error in the display BLEND:

Step	Action
1	Call up display BLEND with the [SCHEM] key. Result: An error message appears: INVALID DATA TYPE.
2	Try recompiling the display. When the display compiles successfully, call it up again.

Error 2

Locate the second error in display BLEND:

Step	Action
1	Call up display BLEND with the [SCHEM] key.
2	Select the outlet valve. Why can't you call up the change zone?
3	When you discover a solution, fix the problem, then check with your course manager to discuss other possible solutions.

Corrections

Continued on next page

Using Printout to Troubleshoot, Continued

Error 3

Check out display BLEND1 to make sure that it indicates the following to the operator:

- when the display is called up, the valve and pipes should match the PV display (closed or open), and
- when the valve is closed, the stem should indicate closed, and so should the outlet side of the pipe.

Locate the error in display BLEND1:

Step	Action
1	Call up display BLEND1 with the [SCHEM] key.
2	Open and close the outlet valve. Observe the update blink on the outlet valve. Also, the valve should be hollow red when closed and solid green when open.
3	Go to the PE and print the display to file BLEND1A.
4	Locate the problem using the printout.
5	Correct the problem, compile the display, and verify its operation.

Error 4

Locate the compile error in display BLEND2:

Step	Action
1	Read BLEND2 into the PE and attempt to compile it. Result: Object is flashing and then error message POINT OR PARAMETER NOT FOUND appears.
2	Enter the Modify command. Result: The object with the error appears. If this does not display the missing point or parameter, press [CANCEL].
3	Use the SYMBOLS print option to assist you in locating the error: PRINT BLEND2A DEBUG SYM Hint: All points referenced should be found on your 4402 data sheet.
4	What is the bad value? Correct the problem and compile the display.

Corrections

Finding Objects Off the Drawing Area

Introduction

Custom displays that have one or more objects off the drawing area will not compile. Methods for finding or correcting the problem are

- Use MOVE (left to right) to locate item,
(top to bottom),
(bottom to top), then
(right to left).

(NOTE: Press [CANCEL] between Moves until object is located.)

- Use display printout (PRINT command). Look for negative coordinates on objects.
- Use DELETE. You can use the Delete command because the object is already selected (although you may not be able to see it, because it is off the drawing surface). If you use this method, you will never know what the object was.

Errors 5 & 6

Locate the errors in display BLEND3A:

Step	Action
1	Read BLEND3A into the PE and attempt to compile it. Result: The message "OBJECT(S) OFF DRAWING SURFACE" appears. The offending objects are selected and flashing, although you cannot see them if they are entirely off the drawing surface.
2	Find and remove the offending objects, then recompile.
3	Call up the display and see how it looks.
4	Correct the text object "TANK 3" to eliminate all black spaces and black background .

Corrections

Continued on next page

Finding Objects Off the Drawing Area, Continued

Error 7

Locate the error in display BLEND3C:

Step	Action
1	Read BLEND3C into the PE and attempt to compile it.
2	Use these methods to find the objects that are off the drawing surface: <ul style="list-style-type: none">• MOVE,• ADD BEH REV (this should expose any unwanted space bar characters), and• PRINT filename SEL (look for negative X/Y coordinates).
3	Find and remove the offending objects, then recompile.

Corrections

Different Versions of Sub in Display

Introduction

The following exercise demonstrates the hazards of updating subpictures, then adding them to a display by using the Delete and Add commands instead of the Replace command.

The first time a subpicture is added to a display, the subpicture source becomes part of the display source. Any references to the subpicture cause the display to check its own source and use the version that it has. The display does not go “outside” to get a copy of the subpicture unless it does not exist in its own source code.

The Replace command causes the display to get a new copy of the subpicture source.

Error 8

Perform the following procedure to experiment with modifying subpictures:

Step	Action
1	Read subpicture C_VALVE into the PE.
2	Modify and save the subpicture: <ul style="list-style-type: none">• Make the top of the valve a Solid.• Change the color to Full Red.• Add a generic value to display the point name above the valve.
3	Read subpicture O_VALVE into the PE.
4	Modify and save the subpicture: <ul style="list-style-type: none">• Change the color to Half Intensity Green.• Add a generic value to display the point name above the valve.
5	Read display CBLEND into the PE.
6	Observe what takes place when you <i>add</i> C_VALVE as a subpicture on the inlet pipe. Results:_____
7	Now delete the variant on the outlet pipe, then add it again: If DVL331.PV = OPEN then sub O_VALVE else sub C_VALVE Results: The variant appears to be using the modified versions of the subpictures.
8	Compile the display, then call it up using the [SCHEM] key.
9	Operate the valve using the change zone targets. Result: O_VALVE is the updated version, but C_VALVE is not. If you have not determined why you got this result, ask your course manager for assistance.

Continued on next page

Different Versions of Sub in Display, Continued

Error 8, continued

Perform the following procedure to experiment with replacing subpictures:

Step	Action
1	Read display OCBLEND into the PE.
2	Use the REPLACE SUBPICTURE command to replace subpictures O_VALVE and C_VALVE with the modified subpictures. At the prompt, enter point name DVL331.
3	Compile the display, then call it up using the [SCHEM] key. Result: The display contains the updated versions of the subpictures.
4	Read display OCBLEND into the PE again, then remove your cartridge AGB1.
5	Add subpicture C_VALVE anywhere to the picture. At the prompt, enter point name DVL331. Result: The subpicture is added from the display's own source code; it does not need to go get the subpicture.
6	Now add subpicture O_VALVE anywhere to the picture. Result: The subpicture is added from the display's own source code; it does not need to go get the subpicture.

Corrections

Display Entity Name Without Network Gateway PN

Introduction

A Network Gateway (NG) node on each LCN provides an internetwork access mechanism. Each network is assigned a network identifier in the NG NCF configuration.

The display BLENDNG1 was built to access LI24952 on network N1.

Error 9

Perform the following procedure to locate an error related to internetwork access:

Step	Action
1	<p>Call up display BLENDNG1 using the [SCHEM] key.</p> <p>Result:</p> <ul style="list-style-type: none">• A runtime error message appears INVALID DATA TYPE.• No trend data appears.• No trend ID appears
2	<p>Select the outlet valve.</p> <p>Result: A network identifier is displayed as a prefix to the point name in the change zone.</p> <p>The appearance of the network identifier indicates that the builder of the display executed the Picture Editor System ID command:</p> <p style="text-align: center;">SYS_ID N1</p> <p>(refer to the <i>PE Reference Manual</i> for more information on the System ID command)</p>
3	<p>Now see if you can locate the cause of the INVALID IDENTIFIER message in this display.</p>

Lab Solutions

Errors

The following errors were present in the displays used in this exercise:

BLEND

Error 1 Points have been deleted and rebuilt after BLEND compiled.

Error 2 The CHG_ZONE overlay must be located in a directory specified in the Area search path catalog. The change zone overlay is in NET>&DSY. Copy this to your work directory:

CP NET>&DSY>CHG_ZONE.DO =

BLEND1

Error 3 Double target, double variant.

BLEND2

Error 4 Entity error in subpicture in variant.

BLEND3A

Error 5 Text objects off the drawing surface.

Error 6 Extra space characters and the text object needs to be in priority FGB.

BLEND3C

Error 7 Objects off the drawing surface.

CBLEND, OCBLEND

Error 8 Changed subs were added instead of Replaced.

BLENDNG1

Error 9 Incorrect System ID syntax

More Troubleshooting

Introduction

There are many more custom displays with error conditions on your cartridge disk AGB1.

For more practice debugging custom displays, spend some time working with the problems on AGB1.

Instructions

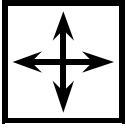
List the directory descriptors on AGB1 to find in which directories the displays with “bugs” are stored:

```
LS $Fn -D -FD
```

Each of the following directories contains a display with a “bug.” Solve as many of the bugs as you can, depending on the time you have available.

ARRW
BUGS
DDB1
DDB2
ERRS
ILLV
INVD
OFFD
OVLY
RUNT
SUB1
SUBS

Directions



DIRECTIONS—This is the end of the study material for this module. Discuss questions concerning the study material or the lab activities with a colleague or a course manager

If you are satisfied that you have achieved the objectives of this module, continue with the next section, the Student Proficiency Evaluation.

Student Proficiency Evaluation

Criterion Test

Instructions

Correct the errors in the custom displays listed below:

Directory	Display	Symptom
DDB1	DDBTEST	Copy DDBTEST.DO from directory DDB1 to directory WORK. Call up the display DDBTEST with the SCHEM key. The values display @@@@ and when the target is touched, the error message "Display Data Base Error" appears Hint: Look in directory DDB1 for any additional files you may need.
ILV1	GRID	When display is compiled, the entire display flashes and this error message appears: ILLEGAL VARIABLE Hint: Look in directory ILV1 for any additional files you may need.
GEN	GENERAL1	RE S GENSUB1 GENSUB1 does not work.
KILN	KILN	RE S SUBTREND SUBTREND produces this error message: SUBPICTURE DATA TYPE MISMATCH
AMOD	BAD_C_IF	Copy BAD_C_IF.DO from directory AMOD to directory WORK. Call up the display BAD_C_IF with the SCHEM key. Select the target BOOLEAN EXPRESSION . Then select the target ARITHMETIC under Value Types. Now select the target ARITHMETIC EXPRESSION . Notice that the MOD operation has a gap in the oval.

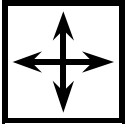
Self-Evaluation

Solutions

The cause and fix for each of display is described below.

Display	Cause of Error	Fix
DDBTEST	User DDB variables not initialized.	Set user DDB variables to initial value using Define Init command.
GRID	DDB declare file does not define DT_INDEX.	Modify .DF file to include declaration of DT_INDEX.
GENERAL1	Within GENERAL1, the subpicture is named GENSUB.	RE S GENSUB GENSUB1
KILN	Data type ghost.	Run Verify on SUBTREND, then RE SUB SUBTREND SUBTREND
BAD_C_IF	Unknown	Replace the subpicture S_BOOLAR.

Directions



DIRECTIONS—This is the end of this module.

Use your course map to

- Get your course manager to sign off this module.
- Choose your next eligible module.

If you have a question

- Ask your course manager.
-

Appendix A

Picture Editor Compiler Error Messages

1. Abstract from Newer Version
 Attempted to use a schematic built or translated to newer release.
 2. After you have read the message, press CANCEL to continue
 3. After you have read the message, press ENTER to continue.
 4. All EQ files will be deleted. Press ENTER to continue/CANCEL to abort
 5. Array Type Expected
 6. Bad Character for Select String
 Attempted to use unacceptable character inside SELECT "string."
 7. Blind_Rec Type Expected
 A blind record is an internal record often used with trends.
 8. Boolean Type Expected
 9. Can't Roll Off Drawing Surface
 10. Cannot Compile Subpicture
 Has an &name in the schematic.
 11. Cannot Retranslate Picture
 Schematic has already been translated.
 12. Collection Group Overflow. Use SET COLLECTION to Change Group IDs
 13. Comma Expected
 Possibly a semicolon has been placed where a comma should be or a comma has been omitted.
 Example: S_BOOL(BOOL01;ON)
 14. Command Not Implemented
 15. Compile Error
 Try verify command to see if the problem is with the symbol table, then recompile.
 If you still get the error probably the problem is in a subpicture.
 16. Compile Error: Exceeded 511 targets (max # of targets)
 17. Consecutive Operands Illegal
-

Continued on next page

Picture Editor Compiler Error Messages, Continued

18. Custom Systems MSF File Error.
MSF is a small internal subsystem (multisectioned file). Error in reading a .QO file with EQLISTs.
 19. Custom Systems MSF Utilities Not Loaded.
Runtime backplane software not available—EQLIST-related.
 20. Date Time Type Expected
 21. Date Type Expected
 22. Duplicate Equipment List already loaded.
 23. Duplicate subpicture name already exists in picture
The command RE SUB A B would give this error if B already exists in schematic.
 24. Duration Type Expected
 25. ELSE Expected
 26. End of Line Encountered
 27. Enter Bar Information
 28. Enter Bar Locations
 29. Enter Collection Properties
 30. Enter Comment Text
 31. Enter Condition Information
 32. Enter Copy Coordinates
 33. Enter Move Coordinates
 34. Enter New Value Type or press ENTER to Default to Current Value Type
 35. Enter Prompt Questions
 36. Enter Scale Bounding Box
 37. Enter Scale Factor Information
 38. Enter Select Coordinates
-

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 39. Enter Solid Coordinates
 - 40. Enter Subpicture Coordinates
 - 41. Enter Subpicture Information
 - 42. Enter Target Coordinates
 - 43. Enter Target Specifications
 - 44. Enter Text
 - 45. Enter The Roll Coordinate
 - 46. Enter the Line Coordinates
 - 47. Enter Value Coordinates
 - 48. Enter Value Format
 - 49. Enter Value Information
 - 50. Enter Value Type
 - 51. Enter Variant Coordinates
 - 52. Enter Variant Information
 - 53. Entity_ID Type Expected
 - 54. Enumeration Type Expected
If in a target, most common cause: forgot to do a get enumeration.
 - 55. Error in Parse of Expression
 - 56. Exceeded maximum Equipment Lists loaded into the Picture Editor.
Eight max.
 - 57. Expression Expected
 - 58. Extra Characters on Line
 - 59. Factor Not a Number
 - 60. File Exists. Press ENTER to Overwrite,CANCEL to Abort Write
-

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 61. File Not Found
You can press the [ESC] key and list the files in the directory, then press [CTL] [HELP] to return to the Picture Editor.
- 62. IF Expected
- 63. Illegal Add Operation
Add with no operand or add with a bad option.
- 64. Illegal Bar Description
- 65. Illegal Behavior
- 66. Illegal Coords on Command Line
Coordinates cannot be negative. Example: SEL -10 -10 1000 1000
- 67. Illegal Copy Operation
You must have a “from” and a “to” select points.
- 68. Illegal Define Operation
- 69. Illegal Delete Operation
- 70. Illegal Entry
Usually caused by a typo or a wrong command.
Example: E S SUB1 SUB1 should be RE S SUB1 SUB2
- 71. Illegal File Name
COM with Path that omitted filename. Example: NET>PICS.
- 72. Illegal Format For Expression
- 73. Illegal Modify Operation
- 74. Illegal Move Operation
- 75. Illegal Option
The character(s) following the command name are not legal for that command.
- 76. Illegal Page Number
- 77. Illegal Palette Number
Legal Palette numbers are 0 – 16.
- 78. Illegal Pathname
Name too large or doesn’t follow Pathname conventions.

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 79. Illegal Print Option
 - 80. Illegal Prompt Question
 - 81. Illegal Record in Abstract
 - 82. Illegal REPLACE Operation
 You must specify an old subpicture (SUB1) and a new subpicture (SUB2).
 Example: RE S SUB1 SUB2
 - 83. Illegal Scale Factor Entered
 - 84. Illegal Scale Operation
 - 85. Illegal Select Operation
 - 86. Illegal Set Operation
 - 87. Illegal Subpicture Name
 - 88. Illegal Target Action
 - 89. Illegal Target Shape
 - 90. Illegal Type
 - 91. Illegal Type for Index
 - 92. Illegal Use of Wild Card
 - 93. Illegal Variable
 This error can result from several causes:
 - 1. A syntax problem: IF INT01 >> INT02 THEN SET RED
 - 2. A user DDB file was not loaded before compiling.
 - 3. In a subpicture, the type of a generic value was changed (&TAG.parameter) but other occurrences of the former type still exist.
 - 94. Illegal Verb
 Example: SP PICT (SP is not a PE command. S(space)P is required)
 - 95. IN Expected
 - 96. Incompatible Operand Types
-

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 97. Incorrect Actor Usage
 - 98. Incorrect Use of Vertices
 - 99. Index form $A * X + B$ expected (A and B constant integers, X variable)
When referencing an array in a parameterized subpicture, a mathematical expression of the form $A * X + B$ may be used as the index. A and B must be constant integers and X must be a variable. A value expression such as `&PNT.FLOW(1 * &I + 2)` is allowed, while a value expression such as `&PNT.FLOW(1 * &I + INT01)` is not allowed.
 - 100. Integer Type Expected
If building a target, forgot to use the G_INT actor.
 - 101. INVALID KEY : cannot delete page one data. Press <ENTER> to continue
This applies to R400 and later where targets, conditions, and variants have more than one page.
 - 102. Invalid Boolean Expression
 - 103. Invalid character : nested comments are not allowed
 - 104. Invalid Date Time Format
 - 105. Invalid Grid Mode
 - 106. Invalid Identifier
 - 107. Invalid Label
 - 108. Invalid Limb
 - 109. Invalid Logical Factor
 - 110. Invalid Network Identifier
 - 111. Invalid Network Mode
 - 112. Invalid Priority Operation
 - 113. Invalid Statement
 - 114. Invalid Text Length
 - 115. Invalid Text Mode
-

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 116. Keylock Must be Engineer
- 117. Load Error: Exceeded maximum number of user DDBs (500 max.)
- 118. Local Name Type Expected
- 119. Max Sub Parameters Exceeded
Max. is 16 formal parameters and 16 user-visible parameters.
- 120. Maximum Number of Variant Limbs (90) Exceeded
You have created a variant with too many limbs (or branches).
- 121. Missing Closing Comment Parenthesis
There are two main reasons for this error inside of conditions, targets, and variants:
 - 1. If you omit the right brace (}) from a comment.
 - 2. If you try to continue a comment across a page break.
- 122. Missing Closing Parenthesis
- 123. Missing Closing Quote
- 124. Missing Ending Quote
- 125. Missing Page Number
- 126. Missing Palette Number
- 127. Missing Subpicture Parameter
- 128. Multiply Defined Label
- 129. Must Deselect Object(s) Before Adding New ones
You already had an object selected.
- 130. Must Enter Network Identifier
- 131. Must Translate Before Reading
- 132. Must Unprotect File Before Printing
- 133. Network ID not allowed here
- 134. New subpicture name too long - overflows variant text port
Pre-R400, if you replaced a subpicture that had a short name with a subpicture that had a longer name, you could exceed the available space in the port.

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 135. No Equipment Lists are currently loaded.
 - 136. No More Coordinates Allowed
 - 137. No Symbols Currently in Table
 - 138. Non Visible Parameter Error
 - 139. Not Enough Memory
 - 140. Object(s) Are not Scalable
Subpictures, text, and targets are not selectable.
 - 141. Object(s) Invalid for FFLs
Free format logs can have values, variants, text, and subpictures.
 - 142. Object(s) Off Drawing Surface
Object(s) are off the screen to the left or down. Fortunately, when this occurs the compiler selects this object(s) so that it can be moved back into the viewing area.
 - 143. Only 8 Actors Can be Nested
 - 144. Operand Expected
 - 145. Parameter Must be Entered
 - 146. Parameter Out of Range
 - 147. Parameter_ID Type Expected
 - 148. Picture Abstract Overflow
The schematic is too large.
 - 149. Picture Modified. Press ENTER to Exit, CANCEL to Abort Exit.
 - 150. Picture Modified. Press ENTER to Read, CANCEL to Abort Read
 - 151. Point or Parameter Not Found
 - 152. Pointer Type Expected
 - 153. Port Overflow - Max Size Exceeded
 - 154. Printer Error
 - 155. Printer ID Expected
-

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 156. Printing To A File
- 157. Reading Source File
- 158. Real Type Expected
If in a target, most common cause: forgot to do a get real.
- 159. Requested Abstract Corrupted
- 160. Select Before Adding Behavior
- 161. Select Before Adding Condition
- 162. Select Before Adding Inherit
- 163. Select Before Adding Priority
- 164. Select Before Adding Textsize
- 165. Select New Origin
- 166. Select Object Before Copying
- 167. Select Object Before Deleting
- 168. Select Object Before Modifying
- 169. Select Object Before Moving
- 170. Select Object Before Scaling
- 171. Select Object before Printing
- 172. Select One or More Options. Press ENTER to Continue
- 173. Semicolon Expected
- 174. String Type Expected
If in a target, most common cause: forgot to do a get string.
- 175. Subpicture Data Type Mismatch
The data type of a variable in a subpicture is different than in the main schematic.
Possible causes:
 - 1. An incorrect variable type was given for a generic reference in a subpicture (&TAG.PARAMETER).
 - 2. A change was made to the type of a DDB variable in a subpicture and the REPLACE SUB command was used. The solution is to first delete the old subpicture then add the new subpicture.
- 176. Subpicture Not Found

Continued on next page

Picture Editor Compiler Error Messages, Continued

- 177. Subpicture Text Size Incompatible with Current Text Mode
 - 178. Symbol Table Size Exceeded
 - 179. Syntax Error Detected
 - 180. System ID Command In Progress
 - 181. Text String Exceeds 80 Chars
 - 182. Textsize Invalid for These Objects
 - 183. THEN Expected
 - 184. Time Type Expected
 - 185. TO Expected
 - 186. To Delete page use <ENTER> or <CANCEL> to abort
 - 187. To view use <PAGE> or <CTL><PAGE> keys. Pressing <CANCEL> clears display
 - 188. Too Many Constants in Express
The max. is six. See *Picture Editor Reference Manual*, Appendix C.
 - 189. Too Many Symbols Used
 - 190. Translation in Progress
 - 191. Undefined Label
 - 192. Unknown Type Expected
 - 193. Updating DDB Information
Refers to DDB variables. If you have a small file, you won't see this message.
 - 194. Variable ID Type Expected
To the Picture Editor, a variable ID type is a point.parameter.
 - 195. Variable too long
 - 196. Verification in Progress
 - 197. Visible variable too long for formal parameter list
Max. is 32 characters.
 - 198. Writing Object File
This indicates a successful compile.
 - 199. Writing Source File
When you compile the Picture Editor writes the source file, unless it encounters a fatal compile error such as objects off the drawing surface.
-

Appendix B

Picture Editor Runtime Error Messages

These are some of the most frequently seen messages.

Message	Meaning/Corrective Action
Abstract VER Mismatch	The schematic software version is not compatible with the equipment list software version.
Access Level Error	The Universal Station must be at a higher level of key access to permit change to the selected parameter, or to perform the selected function.
Arithmetic Overflow	An actor attempted to perform an arithmetic operation that resulted in a number too large to store. This can also be caused by dividing by zero.
Bad Value	An invalid entry was input.
Boolean Type Expected	An actor requires a Boolean value. This error is often seen when using an actor like R_BOOL, RS_LOC, or RS_SYS.
Cannot Find Point	Tag name entered does not exist.
Cannot Load EQ Obj	The specified equipment list cannot be loaded because of a file error.
Data Access Error	Parameter does not exist for selected point.
Data Not Available	Data does not exist for the given point and time (history).
Data Entry Time Out	This message appears when no input is received into an input port within two minutes.
Date Expected	An actor requires a date value. This error is often seen when using an actor like R_DATE, RS_LOC, or RS_SYS.
Date or Time Expected	The requested time base is incorrect.
DDB Error	The US memory limit of 1000 words for user-defined global DDB variables has been exceeded.
Device Reset	The module or box where the point resides is in RESET; no entry is allowed.
Display Database Error	A display database variable has not been initialized.
Display Not Configured	A key or target was selected to call up a nonexistent display.
Duration Expected	An actor requires a duration value. This error is often seen when using the actor R_DUR.
End of Port Encountered	This message appears if you enter an empty port.
Entity ID Error	The internal entity number either does not exist or points to incorrect data. The probable cause is that the entity or parameter has been deleted.

Continued on next page

Picture Editor Runtime Error Messages, Continued

Entity Not Found	Tag name entered does not exist.
EQ_LIST Time Out	During the processing of the EQ_LIST actor, time out has occurred.
EQ Obj File Corrupted	The specified equipment list contains bad data.
EQ Obj File Not Found	The specified equipment list object file is not found in the search paths specified in the area database path names catalog.
EQ Obj Not Used in Abst	The specified equipment list in an EQ_LIST actor was not loaded in the schematic at compile time.
EQ Obj Time Stmp Mismatch	An equipment list object file (.QO) other than the one referenced in the LOADEQ command is found at display callup. Check .QO files in directories of Pathname Catalog.
Illegal Value	An invalid entry was input.
Init Error	The selected parameter cannot be changed because the point is in initialization mode.
Initialization	Selected parameter cannot be changed with point in current mode.
Integer Type Expected	An actor requires an integer value. This error is often seen when using an actor like R_INT, RS_LOC, or RS_SYS.
Invalid	An invalid entry was input.
Invalid Data Type	<p>The data type of the parameter does not match the actor that is using it. This can happen for the following reasons:</p> <ul style="list-style-type: none"> • A point that the schematic references has been deleted. • A point has been deleted and loaded back without recompiling the schematic that references the point. • UNKNOWN was used for the data type of a generic variable (&A.PV), but the actual type does match the actor that is using it. • An invalid index is used when referencing an element of an array.
Invalid Entity Name	The EI_ENT actor checks that the string name is a valid entity name.
Invalid Entry	Data entered was not valid.
Invalid Identifier	A reference was made to an illegal identifier, such as \$PRSTS- -.
Invalid Mode	Selected parameter cannot be changed with point in current mode.
Inv Mode Attr	Selected parameter cannot be changed with point in current mode.attribute

Continued on next page

Picture Editor Runtime Error Messages, Continued

Item Errors	Some part of the data is missing or incorrect; for example, if you reference an enumeration that does not exist or a member of the enumeration does not exist.
Lmt or Range Err	An attempt was made to change the value of a clamped parameter beyond the range limit.
Pnt Status Err	The module or box where the point resides has failed; no entry is allowed.
Printer Not Configured	The print request could not be honored because the requested printer is not configured.
Prior EQ_LIST executing	Prior EQ_LIST actor is still processing and not yet finished.
Prior Function Not Completed	A previous function or activity must complete before another can be started.
PV Source Invalid	Selected parameter cannot be changed with point in current PV source.
Read Only Par	The selected parameter is for viewing only and cannot be changed.
Real Type Expected	An actor requires a real value. This error is often seen when using an actor like R_REAL, RS_LOC, or RS_SYS.
Red Tag	All output entries are disallowed because the point is "Red-Tagged."
Region Related Error	The Update actor was used in Define Initial action.
Search Incomplet	An attempt was made to retrieve information that is not available, such as \$PRSTS99.
Start Date is After Stop	The requested time base is incorrect.
Start Time is After Stop	The requested time base is incorrect.
Subscript Range	An array index was used outside the bounds of an array.
Syntax Error	The wrong kind of value has been entered; for example, if the input requires POINT.PARAMETER, and you enter only a point name.
Time Expected	An actor requires a time value. This error is often seen when using an actor like R_TIME, RS_LOC, or RS_SYS.
Unit Instance Not Exist	Specified unit instance is not found in the equipment list object file.
Unit Not Configured	Entered ID does not exist or is not assigned to the station's Area.

LAST PAGE

