

# 47

## BATCH PLOT UTILITY AND EXPRESS TOOLS

### Chapter Objectives

After completing this chapter you should:

1. be able to use the Batch Plot Utility to select and plot several drawings unattended;
2. be able to specify which layers and what drawing areas to plot with the batch utility;
3. be able to install the Express Tools from the AutoCAD 2000 CD-ROM, load the Express menus, and invoke the Express toolbars;
4. be able to use the Express Text commands;
5. be able to use the Express Layer commands;
6. be able to use the Express Standard toolbar commands;
7. be able to use the Express Block commands;
8. be able to use miscellaneous Express commands from the pull-down menus and the command line.

## CONCEPTS

AutoCAD 2000 is shipped with many useful bonus tools and a batch plotting feature. The Batch Plot Utility is installed automatically (if the *Typical* or *Full* installation is selected). The Express Tools are installed only if you choose the *Full* option when you first install AutoCAD or use the Setup utility at a later time and select the Express Tools for installation.

The Batch Plot Utility is very useful in an office or laboratory where many drawings must be printed or plotted. This utility allows you to specify multiple drawings to be printed or plotted unattended. For example, a set of drawings can be set up to be printed at night so they are ready for you when you return in the morning.

Express Tools include several utility commands that have a specialized or streamlined usefulness. These commands were not fully quality tested in time to make it in the documented AutoCAD 2000 command set. However, many very powerful and useful features are available, including layer utilities and a Layer Manager, text utilities, modify commands, draw commands, and miscellaneous tools.

## BATCH PLOT UTILITY

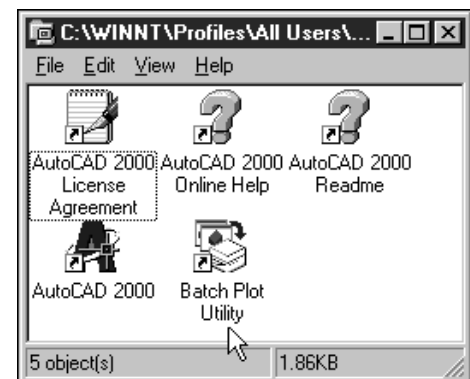
AutoCAD 2000's Batch Plot Utility is useful in offices or laboratories where many prints or plots are made because a set of drawings can be assigned for plotting as a "batch" without human intervention. For other applications, such as when a number of plots are required as a complete project set, the entire set of drawings can be saved to a list to simplify plotting the same set again at a later time. Other specifications about the drawings to be plotted can be saved, such as which layers should be included in the plot, drawing areas to plot, and the print/plot devices to use. A plot test can be used as a "dry run" to locate any potential problems before running the batch. If errors occur during an unattended plot run, an error log is kept so problems can be tracked.

The Batch Plot Utility requires AutoCAD for operation. Invoking the Batch Plot Utility in turn starts its own dedicated AutoCAD session used just for plotting.

You can start the Batch Plot Utility by three methods:

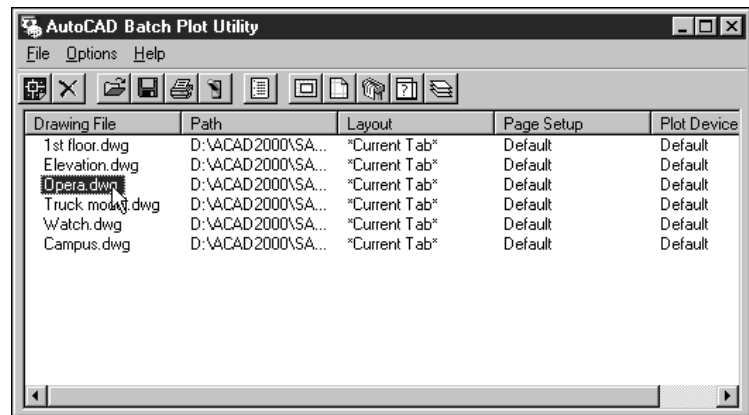
1. Use the Windows Start Menu, choose Programs, then locate and select Batch Plot Utility in the AutoCAD 2000 program group.
2. Click the *Batch Plot Utility* shortcut icon in the AutoCAD 2000 program group (Fig. 47-1).
3. Use Windows Explorer to locate the BATCHPLT.EXE file in the ACAD2000\SUPPORT\BATCHPLT folder.

Figure 47-1



Once the Batch Plot Utility is started (with its own AutoCAD session), the *AutoCAD Batch Plot Utility* dialog box appears (Fig. 47-2). Two pull-down menus in this dialog box (*File* and *Options*) allow you to specify which drawings you want to plot and with what parameters. The choices in each of the pull-down menus are explained next.

Figure 47-2



### File Menu

With this menu you manage the list of drawings (or “batch” of drawings) you want to plot. Drawings selected for plotting appear in the list displayed in the central area of the *AutoCAD Batch Plot Utility* dialog box (see Figure 47-2).

#### Add Drawing...



Use this option to select drawings to include in the list. The *Add Drawing File* dialog box appears (not shown) for you to locate and select the desired drawing(s).

#### Remove



Use this option to remove selected drawings from the list. First highlight the desired drawing name(s) in the list, and then select *Remove*.

#### New List...

Use this menu item to clear the current list. This action is necessary in preparation for creating a new list or selecting a saved list for plotting.

#### Open List...



Use this button to select a list of drawings (previously saved) to include in the list of drawings to plot.

#### Save List...



When a group of drawings has been selected for plotting, you can save the list for future use with this option. The file is saved as an ASCII file with a .BP3 file extension. The file also records the options you select for plotting each drawing.

#### Append List...

This option appends (adds) a previously saved list (.BP3 file contents) to the current list of drawings to plot. Using this method, several “sets” of drawings can be plotted in batch.

#### Plot



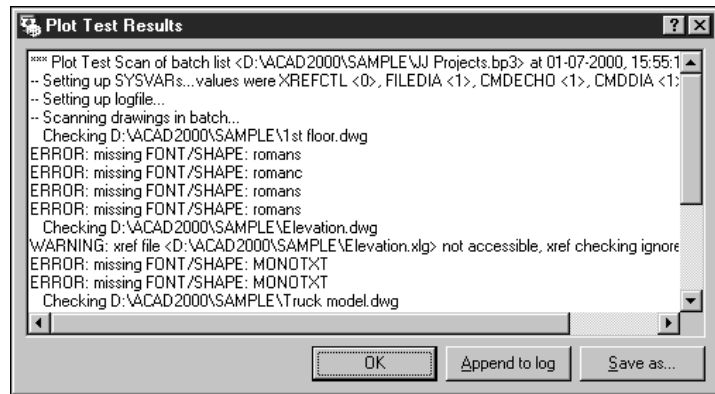
When you are ready to make the plots, select the *Plot* button. As AutoCAD progresses through the plot batch, the current status for each drawing is indicated by a check mark placed just before the drawing name (if the drawing is plotted correctly) or an “X” mark (if the drawing is not plotted). Before plotting, select the options you want for each drawing using the options buttons or *Options* pull-down menu.

### Plot Test



Selecting the *Plot Test* option causes AutoCAD to make a “dry run” of all the drawings listed for batch plotting. In this test, each drawing is checked to ensure all component parts are located (Xrefs, linetypes, fonts, etc.) and to ensure that the selected settings are operable. Warning messages appear if a problem (or potential problem) exists. For example, if an attached Xref, raster file, font, etc., is missing, AutoCAD reports it. A sample *Plot Test Results* dialog box is displayed in Figure 47-3.

Figure 47-3



AutoCAD also creates a log file for each drawing in the batch for the plot test. These log files are automatically assigned a name beginning with the drawing name, followed by a set of numbers and a .LOG file extension (such as ELEVATION\_1\_1\_3805.LOG). Since each drawing is opened in AutoCAD for batch plotting and for plot testing, the drawing log file gives the time the drawing was opened and other activity that occurs such as resolving Xrefs. The sample log is shown below.

```
[ AutoCAD - Fri Jan 07 15:55:10 2000 ] -----
Opening an AutoCAD 2000 format file.
Resolve Xref "1st floor plan": 1st floor plan.dwg
Resolve Xref "1st floor architectural": 1st floor architectural.dwg
Resolve Xref "1st floor electrical": 1st floor electrical.dwg
Resolve Xref "1st floor lighting": 1st floor lighting.dwg
Regenerating layout.
Regenerating model.
[ AutoCAD - Fri Jan 07 15:55:16 2000 ] -----
AutoCAD menu utilities loaded.
AutoCAD Express Tools Menu loaded.
Command:
```

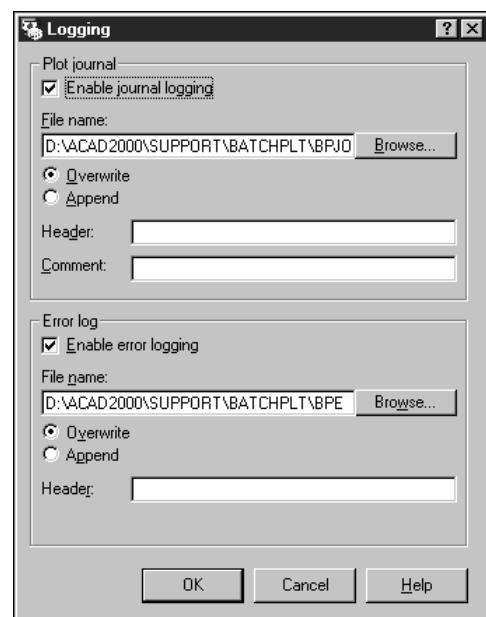
In Figure 47-3, a common warning is displayed. The message “WARNING: xref file <path/filename.xlg> not accessible, xref checking ignored” means that when *Plot Test* attempted to check for missing Xrefs in the drawing, it could not create an XLG file since *XREFCTL* was set to 0 in the drawing file. If the drawing does not contain Xrefs, this message does not indicate a problem.

### Logging...



To locate problems that may have occurred during an unattended batch plot, journal log file and error log files could be checked. For example, if you set up a batch of drawings to plot at night and an error occurred while you were out, the log files would record if the drawings plotted correctly or not. Two types of logs can be created while plotting: plot journals and error logs. First, you must select *Enable journal logging* and *Enable error logging* in the *Logging* dialog box (Fig. 47-4) before running the batch to plot.

Figure 47-4



### Enable journal logging

The plot journal is saved in the current folder (of the BATCHPLT.EXE file) under the name BPIOURNAL.LOG. This log keeps a list of all drawings that plot correctly during the batch plot session. The list gives information about each plot such as the drawing location, selected tabs, page setup, plot device, and time for each plot. An example plot journal is shown below.

```
1st floor.dwg, D:\ACAD2000\SAMPLE\, Model Tab, Default, HP LaserJet 4 Plus, 00:00:01
Elevation.dwg, D:\ACAD2000\SAMPLE\, *Current Tab*, Default, Default, 00:00:01
```

### Enable error logging

When *Enable error logging* is checked in the *Logging* dialog box, a log is created listing the drawings that did not plot during the batch plot session. An example plot journal is shown below.

```
ERROR: Failed to plot drawing: D:\ACAD2000\SAMPLE\Truck model.dwg
ERROR: Failed to plot drawing: D:\ACAD2000\SAMPLE\Watch.dwg
ERROR: Failed to plot drawing: D:\ACAD2000\SAMPLE\Campus.dwg
```

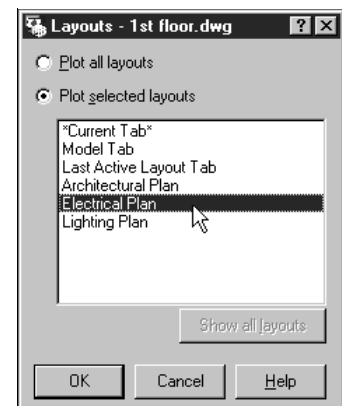
## Options Menu

Your selections from this group of options determines how each drawing is plotted during the batch plot session. To specify options for a particular drawing, first select the drawing from the list in the *AutoCAD Batch Plot* dialog box (see Figure 47-2), then select the desired option(s) described below. Remember, an entire set of options can be set for each drawing in the batch.

### Layouts



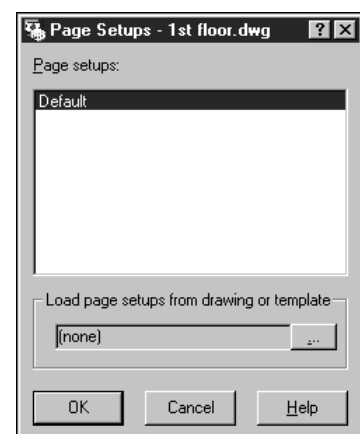
The *Layouts* option produces the *Layouts* dialog box (Fig. 47-5). Here you select the layouts contained in the drawing that you want to plot. The *Show all layouts* button produces a list of the named layouts contained in the drawing. Multiple layouts can be selected by holding down the Shift key (to specify a range) or Ctrl key (to select individual names) when you pick the layout names.

**Figure 47-5**

### Page Setups



This option produces the *Page Setups* dialog box shown in Figure 47-6 where you specify page setups to use during the batch plot session. You can select from the page setups contained in the drawing or load other page setups from other drawings by selecting the browse button in the lower-right corner.

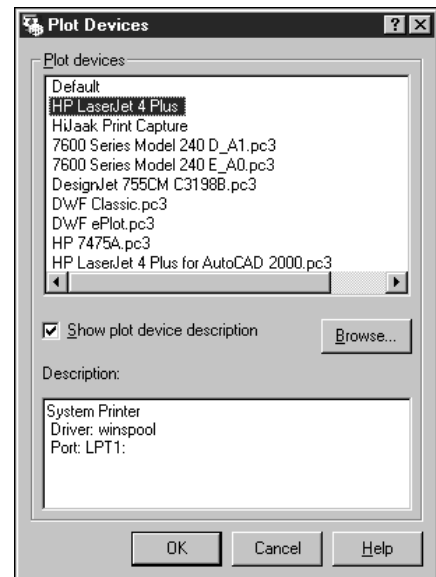
**Figure 47-6**

### Plot Devices



This feature is especially powerful because you can specify that different drawings in the batch plot session be plotted with different devices. First, highlight the desired drawing from the *AutoCAD Batch Plot Utility* dialog box list (see Figure 47-2), then use the *Plot Devices* option to produce the *Plot Devices* dialog box (Fig. 47-7). All AutoCAD-configured devices for your system are available to choose from.

Figure 47-7



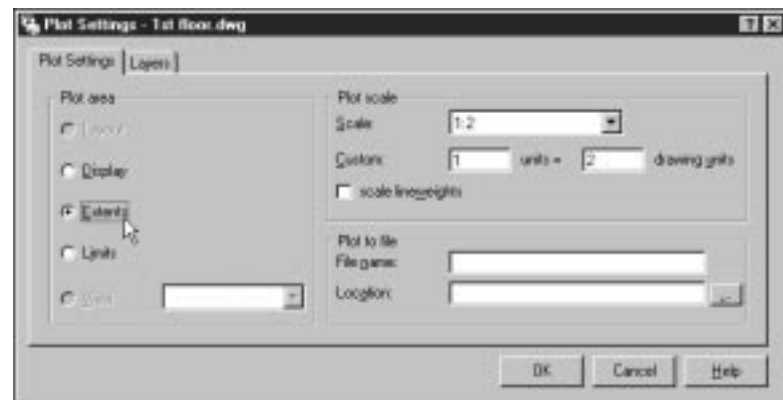
### Plot Settings

The *Plot Settings* tab (Fig. 47-8) of the



*Plot Settings* dialog box allows you to specify what area of the selected drawing you want to appear in the plot. You can also specify the plot scale for the selected drawing. Selecting *Plot to file* does not create a paper plot but produces a .PLT file.

Figure 47-8



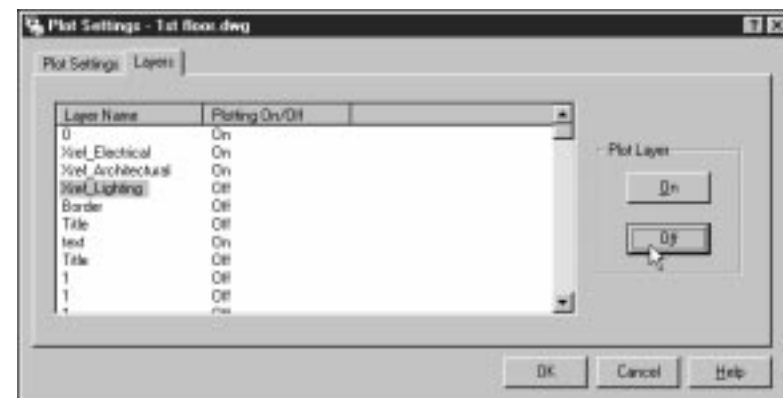
### Layers

The *Layers* option also produces the *Plot*



*Settings* dialog box, but opens the *Layers* tab. (This tab is not available when several drawings are highlighted from the list in the *AutoCAD Batch Plot Utility* dialog box.) This tab allows you to indicate which layers from the selected drawing should be included in the plot (Fig. 47-9). The selected drawing's layer settings in the *Layer Properties Manager Plot* column are read and displayed as *On* or *Off* in the *Plotting On/Off* column in this dialog box.

Figure 47-9



### Plot Stamping

Plot stamping, which was a feature in the AutoCAD Release 14's Extended Batch Plot Utility, is not available in the AutoCAD 2000 Batch Plot Utility.



## EXPRESS TOOLS

### Installing the Express Tools from the CD-ROM

To install the Express Tools when you install AutoCAD for the first time:

1. Insert the AutoCAD 2000 CD-ROM.
2. The Windows Setup utility should start automatically. If not, use Windows Explorer to find the Setup.exe file on the CD-ROM. Double-click on Setup.exe.
3. Proceed through the dialog boxes to accept the license agreement, enter the serial number and CD key, enter your personal information, and select the destination location.
4. In the *Setup Type* dialog box, select *Full* (Fig. 47-10).

Figure 47-10



To install the Express Tools after AutoCAD is installed on your system:

1. Insert the AutoCAD 2000 CD-ROM.
2. Use Windows Explorer to find the Setup.exe file on the CD-ROM. Double-click on Setup.exe.
3. In the *Setup Choices* dialog box (Fig. 47-11), select *Add*.
4. In the *Custom Components* dialog box (Fig. 47-12), select *Express Tools*.

Figure 47-11

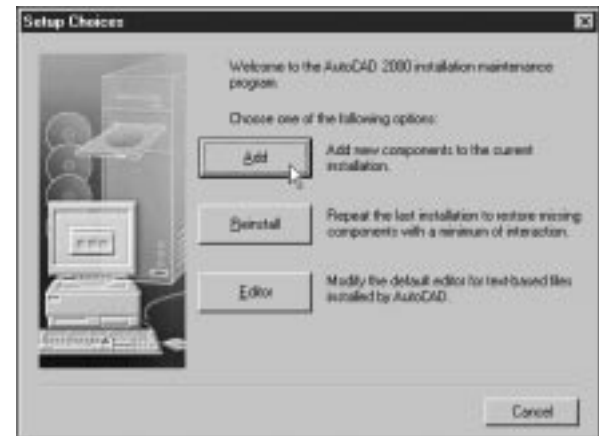


Figure 47-12



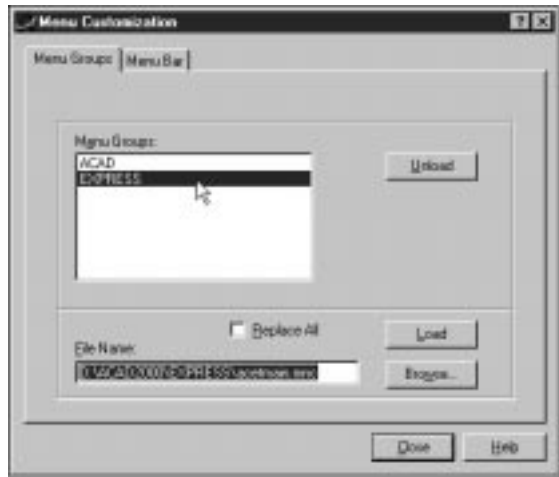
### Installing the Express Menu and Toolbars

You may have to install the EXPRESS menu files if you installed the Express Tools after you installed AutoCAD. If the Express Tools were installed when you first installed AutoCAD, you should not have to perform this step. The Express Tools menu is located in the `ACAD2000\Express` folder.

**To Load the Express Tools Menu**

To load the Express Tools menu, use the *Menuload* command (which is used to load a “partial menu”). *Menuload* invokes the *Menu Customization* dialog box (Fig. 47-13). In the *Menu Groups* tab, select the *Browse...* button to locate ACETMAIN.MNU or .MNC. The *Load* button loads the menu and “overlays” it on the AutoCAD standard menu. Use the *Menu Bar* tab to ensure the *Express* pull-down menu is installed.

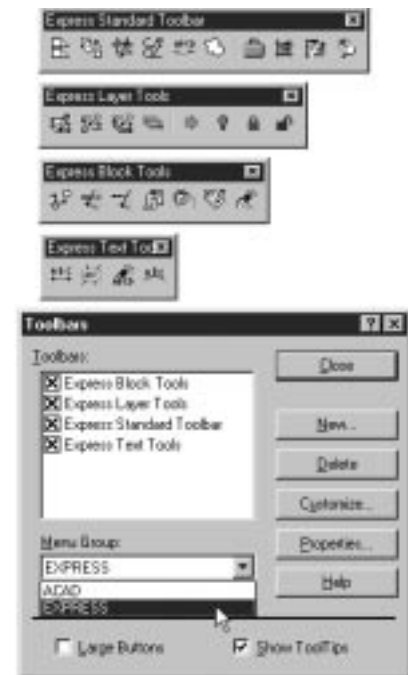
Figure 47-13



**To Load the Express Tools Toolbars**

To bring the *Express Menu* toolbars onto the screen use the *Toolbar* command to invoke the *Toolbars* dialog box (Fig. 47-14). At the bottom of the box (in the *Menu Group* area), select *EXPRESS*, then check each of the toolbars you want bring to the screen. Four toolbars are available: *Express Standard Toolbar*, *Express Text Tools*, *Express Block Tools*, and *Express Layer Tools*.

Figure 47-14



**Express Layer Tools Commands**

Several useful layer utilities are available in this set. The productivity you can gain from these express commands is well worth the trouble of loading these menus and toolbars. These commands operate as an extension to the standard layer commands, allowing you to accomplish in one command what might otherwise take two or three commands or what might require multiple object or dialog box selections.

**LMAN**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Layer Manager...</i>	<b>LMAN</b>	...	...	...	...

*Lman* is short for *Layer Manager*. *Layer Manager* allows you to save, restore, and edit layer settings. With many drawings you may have certain combinations of layers that are frozen, thawed, on, or off for particular operations. For example, you may require a certain combination of layers to be *On* for making a plot, while a different set of layers may be *On* for working with construction lines (*Xlines*, *Rays*) or for creating dimensions and text. Instead of using the *Layer* command each time you make a plot and each time you create and edit *Xlines*, dimensions, and text, you can *Save* these settings to be *Restored* at any later time.



*Lman* produces the *Layer Manager: Save and Restore Layer Settings* dialog box (Fig. 47-15). The central area lists the *Saved Layer states* (empty when you first begin). The options operate as described here.

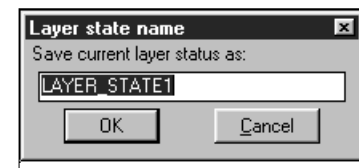
Figure 47-15



### Save...

Using *Save...* invokes the *Layer State Name* dialog box (Fig. 47-16). Here you can assign a name to the current layer settings. Normally, you would want to specify the desired *On*, *Off*, *Freeze*, *Thaw* state for each layer before using this option. However, once a layer state is created, you can use *Edit...* to change the *On*, *Off*, *Freeze*, *Thaw* state of each layer. The layer states are saved in the drawing file, so you can *Restore* the layer states whenever needed. Spaces and other characters are allowed in the name.

Figure 47-16



### Restore

Highlight a name from the list, then use this option to restore the selected *Saved Layer state*. AutoCAD automatically sets the *On*, *Off*, *Freeze*, *Thaw* settings to those saved under the assigned name.

### Edit...

This option allows you to change the layer settings for any named state. First, select the desired name from the list, then press *Edit...*. The *Layer* tab of the *Layer Properties Manager* dialog box (not shown) appears for you to make the desired changes.

### Delete

This button deletes a highlighted *saved layer state* from the list.

### Import...

You can import previously saved layer states from a file. Layer states are saved (with *Export...*) with a *.LAY* file extension. Importing works well when you have several drawings with the same layer names and functions (as when similar drawings are created from the same template drawing). Layer states can be saved in one drawing, then *Exported* to a file and *Imported* to the other drawings.

### Export...

Once you have created the desired layer states, you can save them to a file (with a *.LAY* extension). The layer states can be imported into other drawings with *Import...*

### Options...

Selecting this button produces the *Layer Manager: Restore Options* dialog box (not shown). A new feature in AutoCAD 2000, this dialog box gives additional power for using and restoring layer states. Normally, when a layer state is restored, all the properties of the layers (when the layer state was created) are restored. However, with this dialog box you can specify which properties of the layers are to be restored when the layer state you select is made current. For example, you may have a layer state set specifically

for displaying objects in different lineweights, but want to view the drawing with all lines having the same lineweight. Simply restore the desired layer state leaving *Lineweight status* unchecked. The *Options* feature is also especially helpful for creating new layer states similar to existing layer states by restoring the layer state you want to “clone” but without restoring the properties you want to change.

**LAYMCH**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Layer Match</i>	<b>LAYMCH</b>	...	...	...	...

*Laymch* allows you to change the layer of selected objects to the layer of the selected destination object. This command performs the same function as the *Matchprop* command (see Chapter 12), but only with respect to layers (*Matchprop* can change other properties such as color, linetype, or linetype scale).

Using *Laymch* produces the following prompt:

```
Command: laymch
Select objects to be changed:
Select objects: PICK
Select objects: PICK
Select objects: Enter
2 found.
Select object on destination layer or [Type-it]: PICK
2 objects changed to layer 0.
Command:
```

You can use the *Type-it* option to enter the name of the destination layer:

```
Select object on destination layer or [Type-it]: t
Enter layer name: text
2 objects changed to layer text.
```

**LAYCUR**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Change to Current Layer</i>	<b>LAYCUR</b>	...	...	...	...

*Laycur* changes the layer of selected objects to the current layer. The following prompt is issued:

```
Command: laycur
Select objects to be changed to the current layer:
Select objects: PICK
Select objects: PICK
Select objects: Enter
2 found.
2 objects changed to layer TEXT (the current layer).
Command:
```

**LAYISO**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Layers&gt; Layer Isolate</b>	<b>LAYISO</b>	...	...	...	...

Use this express command if you want to turn *Off all layers except* the layer(s) of the selected object(s). Several layers can be selected to be “isolated.” If more than one layer is isolated, the last one selected becomes the current layer. The following prompt is used:

Command: **layiso**  
 Select object(s) on the layer(s) to be isolated:  
 Select objects: **PICK**  
 Select objects: **PICK**  
 Select objects: **Enter**  
 2 layers have been isolated. Layer TEXT is current.  
 Command:

**LAYFRZ**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Layers&gt; Layer Freeze</b>	<b>LAYFRZ</b>	...	...	...	...

This utility *Freezes* the layer(s) of the selected object(s). More than one object (layer) can be selected for *Freezing* with this command, but you select only one object at a time, then the prompt repeats. You cannot *Freeze* the current layer. AutoCAD gives the following prompt:

Command: **layfrz**  
 Select an object on the layer to be frozen or [Options/Undo]: **PICK**  
 Layer TEXT has been frozen.  
 Select an object on the layer to be frozen or [Options/Undo]: **PICK**  
 Layer GEOMETRY has been frozen.  
 Select an object on the layer to be frozen or [Options/Undo]: **Enter**  
 Command:

You can use *Undo* to undo the last layer (object) selected. Type *O* for *Options*, which issues the following prompt:

Select an object on the layer to be frozen or [Options/Undo]: **o**  
 Enter an option [Entity level nesting/No nesting]<Block level nesting>:

With the *No Nesting* option, only layers in the current drawing (not Xref layers or nested Block layers) are *Frozen*. *Entity level nesting* and *Block level nesting* automatically *Freeze Xrefs* or *Blocks* down to the level of the selected object (*Block* or *Xref*).

**LAYTHW**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Thaw All Layers</i>	<b>LAYTHW</b>	...	...	...	...

Use this command to *Thaw* all layers in the drawing. Layers that are *Frozen* and *Off* are only *Thawed* by this command so they still remain invisible until turned *On*:

Command: *laythw*

All layers have been thawed.

Command:

**LAYOFF**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Layer Off</i>	<b>LAYOFF</b>	...	...	...	...

*Layoff* is used to turn *Off* the layer(s) of the selected object(s). Multiple objects can be selected (one at a time) to turn off their layers. The *Options* are the same as those for *Layfrz*:

Command: *layoff*

Select an object on the layer to be frozen or [Options/Undo]: **PICK**

Layer ASESMP } 1-WALL has been turned off.

Select an object on the layer to be frozen or [Options/Undo]: **Enter**

Command:

**LAYON**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Turn All Layers On</i>	<b>LAYON</b>	...	...	...	...

This command is a quick way to turn all layers on. Layers that are *Frozen* are not affected; only layers that are *Off* can be turned *On* with this command:

Command: *layon*

Warning: layer 0 is frozen. Will not display until thawed.

All layers have been turned on.

Command:

**LAYLCK**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Layer Lock</i>	<b>LAYLCK</b>	...	...	...	...

*Laylck* locks the layers of selected objects. There are no options for this command. If objects are selected that are part of an *Xref* or *Block*, the layer that was current when the *Xref* or *Block* was *Attached* or *Inserted* is locked.

Command: *laylck*

Select an object on the layer to be locked: **PICK**

Layer TEXT has been locked.

**LAYULK**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Layer Unlock</i>	<b>LAYULK</b>	...	...	...	...

*Layulk* has the opposite function of *Laylck*; that is, it unlocks the layers of selected objects. If the selected objects are part of an *Xref* or *Block*, the layer that was current when the *Xref* or *Block* was *Attached* or *Inserted* is unlocked. There are no options for this command.

Command: *layulk*

Select an object on the layer to be unlocked: **PICK**

Layer TEXT has been unlocked.

Command:

**LAYMRG**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Layers&gt; Layer Merge</i>	<b>LAYMRG</b>	...	...	...	...

*Laymrg* combines selected layers with any other layer. Objects on the layers to merge are moved to the target layer, then the merged layer names are deleted. For example, merging layers LAYER1 and LAYER2 to layer 0 would move the related objects to layer 0 and delete layers LAYER1 and LAYER2.

Command: *laymrg*

Select object on layer to merge or [Type-it/Undo]: **PICK**

Selected layers: Layer2

Select object on layer to merge or [Type-it/Undo] <done>: **PICK**

Selected layers: Layer1,Layer2

Select object on layer to merge or [Type-it/Undo] <done>: **Enter**

Select object on target layer or [Type-it]: **PICK**

\*\*\*\*\* WARNING \*\*\*\*\*

You are about to permanently merge the following layers into layer 0:

Layer1  
Layer2

Do you wish to continue? [Yes/No] <No>: **y**  
 Merging layer Layer1 into layer 0.  
 Merging layer Layer2 into layer 0.  
 All entities which were on layer Layer1 have been moved to layer 0.  
 All entities which were on layer Layer2 have been moved to layer 0.  
 Deleting layer "Layer1".  
 Deleting layer "Layer2".  
 2 layers deleted.  
 Command:

**LAYDEL**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Layers&gt; Layer Delete</b>	<b>LAYDEL</b>	...	...	...	...

*Laydel* deletes all objects on a selected layer, then deletes the layer (name). For example, selecting an object on LAYER1 would cause *Laydel* to delete LAYER1 and all objects residing on that layer.

Command: **laydel**  
 Select object on layer to delete or [Type-it/Undo]: **PICK**  
 Selected layers: Layer1  
 Select object on layer to delete or [Type-it/Undo] <done>: **Enter**  
 \*\*\*\*\* WARNING \*\*\*\*\*  
 You are about to permanently delete layer Layer1 from this drawing.  
 Do you wish to continue? [Yes/No] <No>: **y**  
 Deleting layer "Layer1".  
 1 layer deleted.  
 Command:

**Express Text Tools Commands**

Several outstanding text utilities are included in this set. For applications that insert and manipulate text, these commands are truly a express. Some of the functions of these commands can be accomplished otherwise only by writing custom AutoLISP routines, not by using standard AutoCAD commands.



**ARCTEXT**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Text</i> > <i>Arc Aligned Text</i>	<i>ARCTEXT</i>	...	...	...	...

There is no other easy method to use in AutoCAD to create text along an arc. The built-in AutoCAD commands allow creation of a line of text only along a straight line. With this command, you can “attach” text to an existing Arc (Fig. 47-17). You can use the same command to edit existing *ArcAlignedText* objects, as noted by the prompt:

Command: *arctext*

Select an Arc or an *ArcAlignedText*: PICK (existing *Arc* or existing *ArcAlignedText*)

After selecting an arc to use for text alignment or selecting an existing *ArcAlignedText* object, AutoCAD produces the *ArcAlignedText Workshop* dialog box (Fig. 47-18). Here you can control the typical text features (style, font, height, width factor, etc.) as well as many special features.

The following options are available in the *ArcAlignedText Workshop* dialog box.

**Reverse Text**

This option reverses the text so it reads backwards.

**Alignment**

*Left*, *Right*, *Fit*, and *Center* methods can be used. If *Fit* is not selected, you can specify the *Offset from left* and *Offset from right*.

**Position**

The text can be created on the *Convex* or *Concave* side of the arc. You can also set a value for *Offset from arc*.

**Outward from the center/Inward to the center**

This controls which direction the “top” of the letters point. Using Figure 47-17 as an example, if *Inward to the center* were selected, the top of the letters would point downward resulting in upside-down text.

**Typeface**

*Bold*, *Italic*, and *Underline* can be selected.

**Other Options**

Other typical text options are available, such as text *Height*, *Width factor*, *Style*, and font file.

Existing *ArcAlignedText* objects can be modified with grips but keep the concentric orientation with the aligned arc.

Figure 47-17



Figure 47-18



**TEXTFIT**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express</i> <i>Text</i> > <i>Text Fit</i>	<b>TEXTFIT</b>	...	...	...	...

*Textfit* fits text between two specified points. Using this command gives the same results as using the *Fit* option of text alignment; however, this Express command acts on existing text:

Command: *textfit*  
 Select Text to stretch or shrink: **PICK**  
 Specify endpoint or [Start point]: **PICK**  
 Command:

Using the default option you need to **PICK** only the new ending point and the line of text is changed using the existing start point but specifying a new endpoint. You can also change the start point and endpoint, as shown below:

Command: *textfit*  
 Select Text to stretch or shrink: **PICK**  
 Specify endpoint or [Start point]: *s*  
 Specify new starting point: **PICK**  
 ending point: **PICK**  
 Command:

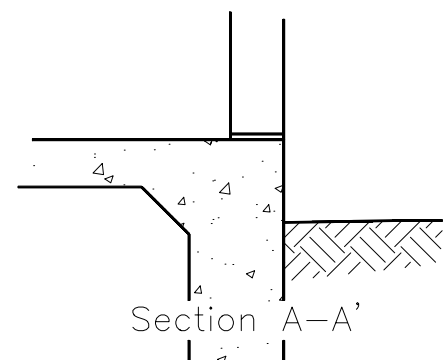
**TEXTMASK**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express</i> <i>Text</i> > <i>Text Mask</i>	<b>TEXTMASK</b>	...	...	...	...

When text and other objects are drawn “on top of” each other (so they occupy the same space), you can use *Textmask* to make the text appear “in front of” other objects by “masking” the other objects. For example, using *Textmask* creates text that masks other drawing objects as shown in Figure 47-19. Use the following command syntax:

Command: *textmask*  
 Initializing...  
 Current settings: Offset factor = 0.3500, Mask type = Wipeout  
 Select text objects to mask or [Masktype/Offset]: **PICK**  
 1 found  
 Current settings: Offset factor = 0.3500, Mask type = Wipeout  
 Select text objects to mask or [Masktype/Offset]: **Enter**  
 Masking text with a Wipeout Wipeout created.  
 1 text items have been masked with a Wipeout.  
 Command:

**Figure 47-19**



*Offset* factor is the distance around the text for the imaginary box that is used for “masking” (trimming) the objects behind the text.

Select text objects to mask or [Masktype/Offset]: **o**  
 Mask offset currently set to 0.3500  
 Enter offset factor relative to text height <0.3500>: (value)

The *Masktype* option allows for three types of masking. A *Wipeout* obscures the background objects completely. A *3dface* mask does not mask the background objects until a *Hide* is performed. The *Solid* option allows you to select a solid color from the standard *Color* dialog box to use for obscuring the background objects.

Select text objects to mask or [Masktype/Offset]: **m**  
 Mask type currently set to Wipeout  
 Specify entity type to use for mask [Wipeout/3dface/Solid] <Wipeout>: (option)

**TEXTUNMASK**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Text</i> > <i>Unmask Text</i>	<b>TEXTUNMASK</b>	...	...	...	...

Use *Textunmask* to remove the mask (wipeout, 3dface, or solid color) from text that a *Textmask* was previously applied to.

Command: *textunmask*  
 Select text or MText object from which mask is to be removed.  
 Select objects: **PICK**  
 Select objects: **Enter**  
 Removed mask from one text object.  
 Command:

**TXTEXP**

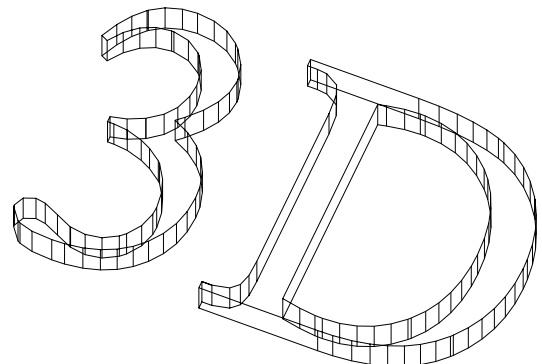


Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Text</i> > <i>Explode Text</i>	<b>TXTEXP</b>	...	...	...	...

*Textexp* explodes text. The resulting objects are *Plines*. As you probably know, a line or paragraph of text is one object; therefore, without this command you cannot explode text. Exploded text is helpful if you need to alter or manipulate the individual text characters. For example, to convert text into 3D solids, use *Textexp*, convert each letter to a *Region*, then *Extrude* the text (Fig. 47-20):

Command: *txtexp*  
 Select text to be EXPLODED:  
 Select objects: **PICK**  
 Select objects: **Enter**  
 1 found.  
 1 text object(s) have been exploded to lines.  
 The line objects have been placed on layer 0.  
 Command:

**Figure 47-20**



**RTEXT**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Text&gt;</b> <b>Remote Text</b>	<b>RTEXT</b>	...	...	...	...

*Rtext* is a streamlined method for importing external text. The text to import can be from an external file or can be created “on the fly” using the *Diesel* option. The *File* option produces the *Select File* dialog box for you to select a .TXT file for importation. The text is drawn in AutoCAD based on the current settings for *Style*, *Height*, and *Rotation*.

```
Command: rtext
Initializing...
Current settings: Style=Standard Height=0.5000 Rotation=0
Enter an option [Style/Height/Rotation/File/Diesel] <File>:
```

When the text is imported into AutoCAD, it is listed as an *Rtext* object and cannot be edited unless exploded. Using *Explode* on *Rtext* converts the text to an *Mtext* object.

**TXT2MTXT**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Text&gt;</b> <b>Convert Text to Mtext</b>	<b>TXT2MTXT</b>	...	...	...	...

Use this *Express* tool to convert text (created with the *Text* or *Dtext* command) to an *Mtext* object.

```
Command: txt2mtxt
Select text objects, or [Options]<Options>:
Select objects: PICK
Select objects: Enter
1 Text objects removed, 1 MText object added.
Command:
```

**Express Standard Tools Commands**

The Standard Express toolbar contains a number of commands useful principally for modifying objects. A few commands are included for drawing and for other utilities. If you use pull-down menus, these commands are spread through the *Modify*, *Draw*, and *Tools* sections of the *Express* pull-down menu.

**MSTRETCH**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Modify&gt;</b> <b>Multiple Entity Stretch</b>	<b>MSTRETCH</b>	...	...	...	...

The typical *Stretch* command requires that you select objects to stretch with one *Crossing Window* or *Window Polygon*. Any objects that are not within the selection window must be stretched with another use of the command. In contrast, *Mstretch* allows you to create multiple selection windows before stretching the objects:

Command: *mstretch*  
 Define crossing windows or crossing polygons...  
 Options: Crossing Polygon or Crossing first point  
 Specify an option [CP/C] <Crossing first point>: **PICK**  
 Specify other corner: **PICK**  
 Options: Crossing Polygon, Crossing first point or Undo  
 Specify an option [CP/C/Undo] <Crossing first point>: **PICK**  
 Specify other corner: **PICK**  
 Options: Crossing Polygon, Crossing first point or Undo  
 Specify an option [CP/C/Undo] <Crossing first point>: **Enter**  
 Done defining windows for stretch...  
 Specify an option [Remove objects] <Base point>: **PICK**  
 Second base point: **PICK**  
 Command:

You can use either a crossing window (*C* option) or a crossing polygon (*CP* option) to select the object(s) to stretch.

**MOCORO**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Modify&gt;</b> <b>Move Copy Rotate</b>	<b>MOCORO</b>	...	...	...	...

*Mocoro* allows you to perform a *Move*, *Copy*, *Rotate*, or *Scale*, or any combination of these operations in one command. This utility is especially useful for those who set *GRIPS* to 0 (off), but occasionally need these capabilities without using Grips:

Command: *mocoro*  
 Select objects: **PICK**  
 Select objects: **Enter**  
 Base point: **PICK**  
 [Move/Copy/Rotate/Scale/Base /Undo]<eXit>: *m*  
 Second point of displacement: **PICK**  
 [Move/Copy/Rotate/Scale/Base /Undo]<eXit>: *r*  
 Second point or rotation angle: **PICK**  
 [Move/Copy/Rotate/Scale/Baset/Undo]<eXit>: *c*  
 Second point of displacement/Undo]<eXit>: **PICK**  
 Second point of displacement/Undo]<eXit>: **Enter**  
 [Move/Copy/Rotate/Scale/Base /Undo]<eXit>: **Enter**  
 Command:

**EXTRIM**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Modify&gt;</i> <i>Cookie Cutter Trim</i>	<b>EXTRIM</b>	...	...	...	...

*Extrim* allows you to use an existing *Circle*, closed *Pline*, *Arc*, *Line*, *Ellipse*, *Image*, or text as a “trimming edge.” Even though the normal *Trim* command allows closed *Plines*, this utility automates the process by prompting only for “Side to Trim” and automatically trims all objects outside or inside the closed boundary that cross the trimming edge object. In other words, *Extrim* allows you to trim like using a “cookie cutter” when closed objects are used as trimming edges.

Command: *extrim*

Pick a POLYLINE, LINE, CIRCLE, ARC, ELLIPSE, IMAGE or TEXT for cutting edge..

Select objects: **PICK**

Command:

Pick the side to trim on: **PICK**

Command:

**MPEDIT**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Modify&gt;</i> <i>Multiple Pedit</i>	<b>MPEDIT</b>	...	...	...	...

*Mpedit* is similar to *Pedit* with the additional capability to select multiple *Plines* for editing. All selected *Plines* are updated as a group. For example, you can change the *Width* of all *Plines* in a drawing globally with this feature rather than having to change one *Pline* at a time:

Command: *mpedit*

Select objects: **PICK**

Select objects: **PICK**

Select objects: **PICK**

Select objects: **PICK**

Select objects: **Enter**

Convert Lines and Arcs to polylines? <Yes>: **Enter**

Enter an option [Open/Close/Width/Fit/Spline/Decurve/Ltype gen/eXit] <X>:

Although you may select only *Plines*, you will still get the “Convert Lines and Arcs to polylines? <Yes>:” prompt. All typical *Pedit* options are available (note the last prompt line).



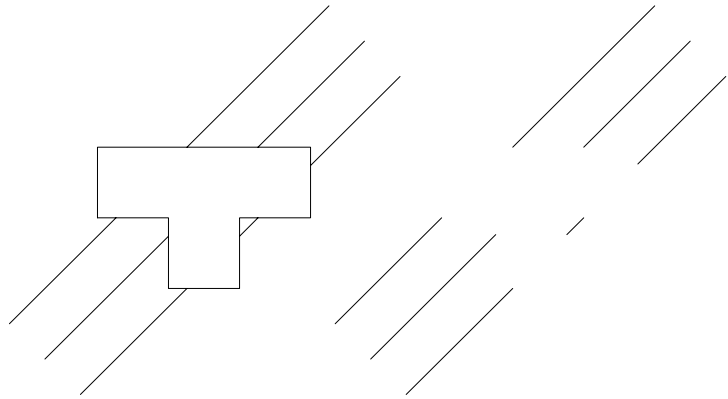
**WIPEOUT**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Draw&gt; Wipeout</i>	<b>WIPEOUT</b>	...	...	...	...

*Wipeout* creates an opaque object that is used to “hide” other objects. The *Wipeout* object is created from an existing closed *Pline*. All objects behind the *Wipeout* become “invisible.” For example, assume a *Pline* shape was created so as to cross other objects. You could use *Wipeout* to make the shape appear to be “on top of” the other objects (Fig. 47-21, left):

Command: *wipeout*  
 Select first point or [Frame/New from Polyline] <New>: **Enter**  
 Select a polyline: **PICK**  
 Erase polyline? [Yes/No] <No>: **Enter**  
 Wipeout created.  
 Command:

Figure 47-21



You can use the “Select first point” option to create a *Pline* wipeout on the fly. You can create an “invisible” *Wipeout* by selecting the *Erase Polyline* option when you create the *Wipeout*, then use the *Frame Off* option to make the *Wipeout* object disappear (Fig. 47-21, right). A *Wipeout* is an AutoCAD object. The *List* command reports the object as a *Wipeout* object.

Use this command to draw a revision cloud on the current layer. Revision clouds are the customary method of indicating an area of an architectural drawing that contains a revision to the original design. Revision clouds are created on a separate layer so they can be controlled for plotting.

**REVLOUD**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Draw&gt; Revision Cloud</i>	<b>REVLOUD</b>	...	...	...	...

*Revcloud* is an automated routine that simplifies drawing revision clouds. All you have to do is pick a point and move the cursor in a counter-clockwise (circular) direction and bring the cursor around to the start point to complete the cloud (see Figure 47-22, on the next page). The cloud automatically closes and the command ends:

Command: *revcloud*  
 Arc length = 0.5000, Arc style = Normal  
 Specify cloud starting point or [eXit/Options] <eXit>:  
 Guide crosshairs along cloud path... (move cursor in a counter-clockwise direction)  
 Cloud finished.  
 Command:

Typing *O* for *Options* produces the *Revcloud Options* dialog box (Fig. 47-23). Here you can select the *Arc Style* (*Normal* or *Calligraphy*) and specify the *Arc Chord Length* value.

Figure 47-22

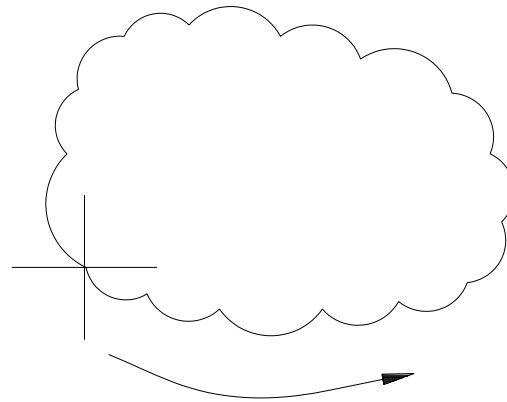


Figure 47-23



**PACK**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; Pack'n Go...</i>	<b>PACK</b>	...	...	...	...

The *Pack* command is useful for preparing drawings to be sent to clients, vendors, colleagues, etc. *Pack* ensures that the drawing and all its dependencies (related files) such as Xrefs, images, and fonts are “packed” and ready to go.

*Pack* produces the *Pack & Go* dialog box (Fig. 47-24). Here you can use the *List View* or *Tree View* options (upper-left corner) to display the list of files. The *Tree View* option displays a hierarchical structure to the parent drawing and attached *Xrefs*, *Images*, selected *Fonts*, etc. (see Figure 47-24).

Use the *Report* button in the *Pack & Go* dialog box to produce a written description of the dependencies (Fig. 47-25). The report can be printed and sent as hard copy along with the files you send to your clients.

Figure 47-24

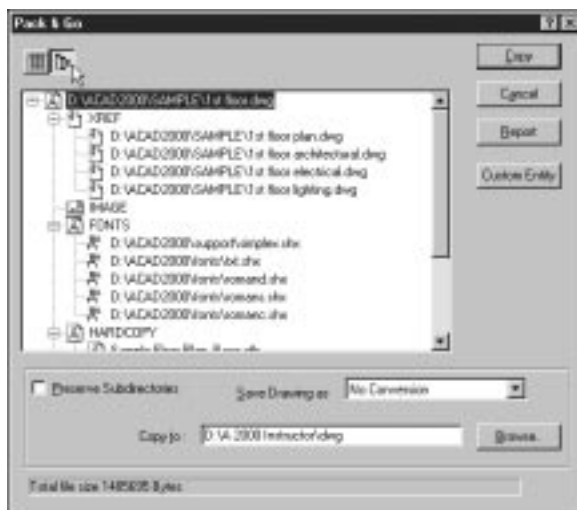
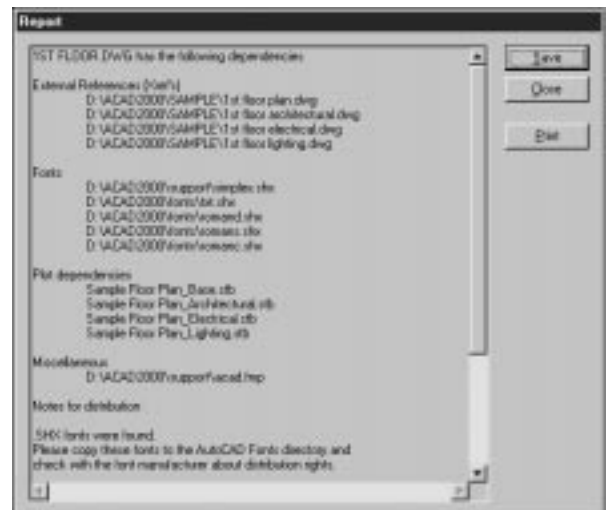


Figure 47-25



**SUPERHATCH**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Draw&gt; Super Hatch...</i>	<b>SUPERHATCH</b>	...	...	...	...

The *Superhatch* command allows you to hatch an enclosed area, similar to the *Hatch* command. However, with *Superhatch* you can select an image (.TIF, .TGA, .BMP, etc.), *Block*, *Xref*, or *Wipeout* object to use as the hatch pattern. Using the *Superhatch* command produces the *SuperHatch* dialog box (Fig. 47-26).

**Figure 47-26** —



After you select the appropriate choice to use as a hatch pattern object (*Image*, *Block*, *Xref*, or *Wipeout*), another dialog box appears for you to select the desired file or object, followed by a series of prompts. For example, after selecting an image file as the hatch pattern object, the following prompts appear:

```

Command: superhatch
Insertion point <0,0>: PICK
Base image size: Width: 1.000000, Height: 0.920792, Inches
Specify scale factor <1>: Enter or (value)
Command:
Is the placement of this IMAGE acceptable? [Yes/No] <Yes>: Enter
Selecting visible objects for boundary detection...Done.
Specify an option [Advanced options] <Internal point>: PICK
Specify an option [Advanced options] <Internal point>: Enter
Preparing hatch objects for display...
Done.
Use TFRAMES to toggle object frames on and off.
Command:
    
```

Typically you would prefer that the hatch object is smaller than the internal area you select for hatching. In that case, the hatch object is replicated similar to any other hatch pattern.

**TFRAMES**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
...	<b>TFRAMES...</b>	...	...	...	

*Tframes* is short for “toggle frames.” Type this command or use the button shown to toggle a “frame” or outline of the hatched area (hatched with *Superhatch*) on or off. Keep in mind that the object(s) used to define the hatch boundary may obscure the *Superhatch* frame, so when *Tframes* is toggled on, it may appear as if there are two outlines.

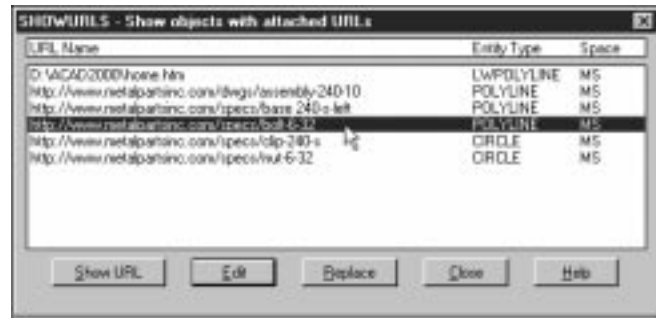
**SHOWURLS**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; Show URLs...</i>	<b>SHOWURLS</b>	...	...	...	...

**Figure 47-27**

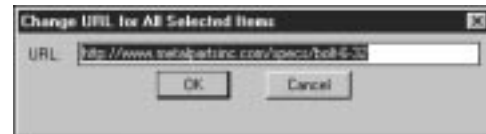
The *Showurls* utility is helpful for displaying and editing URL links (created with the *Hyperlink* or *Attachurl* command) in the current drawing. *Showurls* produces the *SHOWURLS* dialog box that lists all the URLs in the drawing (Fig. 47-27).



You can easily locate an object with an attached URL by selecting the *Show URL* button. AutoCAD dismisses the dialog box temporarily and highlights the drawing object, then displays the dialog box again automatically after a second or two.

Use the *Edit* option to produce the dialog box shown in Figure 47-28. Here you can edit the contents of any selected URL. Use this option to change URLs one at a time.

**Figure 47-28**



Selecting the *Replace* option produces the *Replace URL Text* dialog box where you specify a text string to *Find What* and *Replace What*. This option globally searches and replaces specified text strings contained in URLs in the drawing. This is helpful when a series of URLs in a drawing reference a web site that has undergone a name change.

**Express Block Tools Commands**

Although many of these commands were included with the AutoCAD Release 14 Bonus Tools, this set was not grouped in one toolbar or menu, rather these commands were spread among several menus and toolbars. In AutoCAD 2000, these commands are grouped in the *Express Block Tools* toolbar and in the *Blocks* cascading menu (under the *Express* pull-down menu).

**XLIST**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Blocks&gt; List Xref/Block Entities</i>	<b>XLIST</b>	...	...	...	...

**Figure 47-29**

The *Xlist* command displays properties of objects that are nested in *Xrefs* or *Blocks*. This is helpful since the *List* command reports information about only the top level object (*Xref* or *Block*), not information on nested objects. Using *Xlist* produces the following prompt:



Command: *xlist*

Select nested xref or block object to list: **PICK**

After selecting an object within an *Xref* or *Block*, *Xlist* produces the *Xref/Block Nested Object List* dialog box (Fig. 47-29). This dialog box lists properties of the selected *Block* or *Xref*.

## **NCOPY**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Blocks&gt;</i> <i>Copy Nested Entities</i>	<b>NCOPY</b>	...	...	...	...

*Ncopy* allows you to copy objects that are nested within *Xrefs* or *Blocks*. With built-in AutoCAD commands this is possible to do for *Xrefs* (using *Xbind*), but the process is more complex than *Ncopy*. *Ncopy* allows you to select any object within an *Xref* or *Block* to use for copying. *Ncopy* operates similarly to the *Copy* command:

Command: *ncopy*

Select nested objects to copy: **PICK**

Select nested objects to copy: **Enter**

Select objects: Specify base point or displacement, or [Multiple]: **PICK**

Specify second point of displacement or <use first point as displacement>: **Enter**

Command:

## **BTRIM**



Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Blocks&gt;</i> <i>Trim to Block Entities</i>	<b>BTRIM</b>	...	...	...	...

*Btrim* allows you to trim objects using nested *Block* or *Xref* objects as cutting edges. The command is simple to use since it operates identically to the *Trim* command. If you select an object within a clipped *Xref*, the entire object (outside the clipping boundary) is highlighted.

Command: *btrim*

Select cutting edges: **PICK**

Select cutting edges: **Enter**

Select objects:

Select object to trim or [Project/Edge/Undo]: **PICK**

Select object to trim or [Project/Edge/Undo]: **Enter**

Command:

*Btrim* has the same options as *Trim* (see *PROJECTMODE* and *EDGEMODE*, Chapter 9).

**BEXTEND**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Blocks&gt; Extend to Block Entities</i>	<b>BEXTEND</b>	...	...	...	...

*Bextend* allows you to extend objects using nested *Block* or *Xref* objects as boundary edges. This utility (like the *Btrim* utility) is similar to the built-in AutoCAD counterpart but with the added capability of extending objects to *Block* and *Xref* objects. *Bextend* operates identically to the *Extend* command:

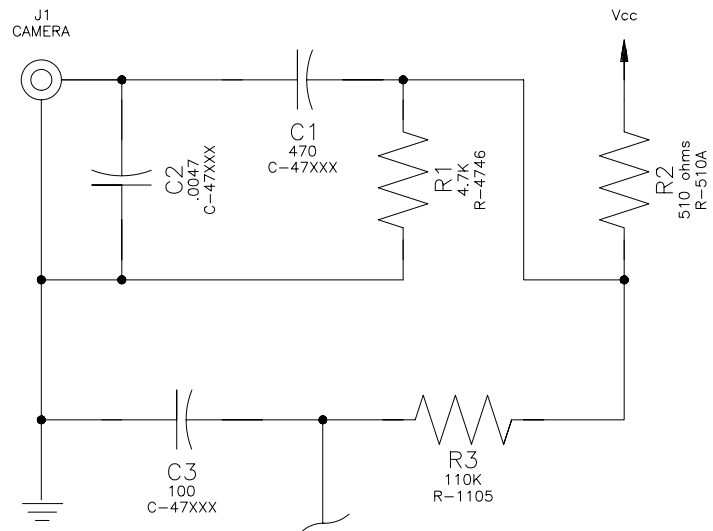
Command: **bextend**  
 Select edges for extend: **PICK**  
 Select edges for extend: **Enter**  
 Select objects:  
 Select object to extend or [Project/Edge/Undo]: **PICK**  
 Select object to extend or [Project/Edge/Undo]: **Enter**  
 Command:

**GATTE**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Blocks&gt; Global Attribute Edit</i>	<b>GATTE</b>	...	...	...	...

*Gatte* makes global changes to attribute values. *Gatte* allows you to make changes to all insertions of the same *Block* in a drawing with one operation. For example, assume you wanted to change the PART\_NO attribute for all insertions of the CAP (capacitor) block in the schematic shown in Figure 47-30. Use *Gatte* and follow the command prompt below to change all PART\_NO attribute values to "C-47XXX:"

Command: **gatte**  
 Select block or attribute [Block name]: **PICK**  
 Block: CAP Attribute tag: CAPACITOR\_NO  
 Enter new text: **c-47xxx**  
 Number of inserts in drawing = 3 Process all of them? [Yes/No] <Yes>: **Enter**  
 Please wait...  
 3 attributes changed.  
 Command:

**Figure 47-30**

The attribute values for all insertions of the *Block* are updated (three *Blocks* on left, Figure 47-30).



**BURST**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Blocks&gt; Explode Attributes to text</i>	<b>BURST</b>	...	...	...	...

Use *Burst* with attributed text (text combined with a *Block*) like you would use *Explode* with an unattributed *Block*. *Burst* actually explodes text attributes but converts the attributes to *Text* objects. Normally, if you select attributes to *Explode*, the *Block* is exploded and the text is changed back to text, indicating the original attribute definitions—that is, tags, values, and prompts. (See Chapter 22, *Block Attributes*.) Using *Burst* may cause the newly created *Text* objects to be misaligned from their previous orientation.

Command: *burst*  
 Select objects: **PICK**  
 Select objects: **Enter**  
 Command:

**CLIPIT**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Blocks&gt; Extended Clip</i>	<b>CLIPIT</b>	...	...	...	...

AutoCAD has the unique feature of clipping *Xrefed* drawings by specifying a polygonal or rectangular *Pline* (no arc segments) as the clipping boundary. *Clipit* extends that capability by allowing you to use an existing *Circle*, *Arc*, *Pline*, *Ellipse*, or text as a clipping edge for an *Xref*, *Block*, or *Wipeout* (see *Wipeout*):

Command: *clipit*  
 Pick a POLYLINE, CIRCLE, ARC, ELLIPSE, or TEXT object for clipping edge...  
 Select objects: **PICK**  
 Command:  
 Pick an IMAGE, a WIPEOUT, or an XREF/BLOCK to clip...  
 Select objects: **PICK**  
 Command:  
 Enter maximum allowable error distance for resolution of arc segments <0.0200>: **Enter** or (value)  
 Command:

## Additional Express Tools Commands

Commands in this section are included in the *Express* pull-down menus (under *Dimension*, *Selection Tools*, *Modify*, or *Tools*), but are not included in any of the *Express* toolbars.

### QLATTACH

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Dimension&gt; Leader Tools&gt; Attach Leader to...</i>	<b>QLATTACH</b>	...	...	...	...

Use *Qlattach* to attach an existing leader to an annotation (*Mtext*, *Block*, or *Tolerance* objects). *Qleader* automatically changes the endpoint of the leader and/or moves the annotation to align and attach to the top of the top line of text. If the annotation object is later moved, the leader stays attached.

Command: *qlattach*  
 Select Leader: **PICK**  
 Select Annotation: **PICK**  
 Command:

### QLDETACHSET

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools Dimension&gt; Leader Tools&gt; Detach Leaders from Annotation</i>	<b>QLDETACHSET</b>	...	...	...	...

The *Qldetachset* command can be used to “break” the connection between a leader and the related text. When *Qldetachset* is used, the leader and related text become independent objects and can be modified separately. In addition, the leader line no longer contains a “hook” (short horizontal segment) aligned with the text object. *Qldetachset* operates for text/leader combinations created with the *Leader*, *Qleader*, or *Qlattach* commands.

### QLATTACHSET

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools Dimension&gt; Leader Tools&gt; Global Attach Leader to Annotation</i>	<b>QLATTACHSET</b>	...	...	...	...

This command is intended to attach previously created leaders to existing *Mtext*, *Tolerance*, or *Block* objects. *Qldetachset* is similar to the *Qlattach* command, with the exception that multiple annotation or leader objects can be selected in response to the “Select objects:” prompt.

**DIMEX**

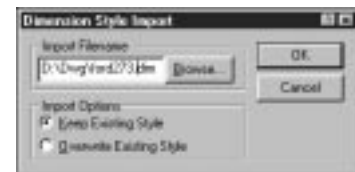
Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Dimension&gt; Dimstyle Export...</b>	<b>DIMEX</b>	...	...	...	...

This is a very useful utility for exporting dimension styles from the current drawing to a file for importation into another drawing with *Dimim* (dimension import). *Dimex* produces the *Dimension Style Export* dialog box (Fig. 47-31). Select a dimension style to export, then select **OK**. The dimension style is saved to a file with a .DIM file extension.

**Figure 47-31****DIMIM**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Dimension&gt; Dimstyle Import...</b>	<b>DIMIM</b>	...	...	...	...

Use *Dimim* to import previously exported dimension styles (see *Dimex*). *Dimim* invokes the *Dimension Style Import* dialog box (Fig. 47-32). Use **Browse...** to locate the desired \*.DIM file.

**Figure 47-32****GETSEL**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Selection Tools&gt; Get Selection Set</b>	<b>GETSEL</b>	...	...	...	...

*Getsel* allows you to PICK specific objects by object type or by layer and use them as the current selection set. You can select the desired layer (or all layers) or the desired object type (or all object types). This utility is a fast alternative to using the *Filter* command to locate and find specific object types. *Getsel* issues the following prompt:

```
Command: getsel
Select an object on the Source layer <*>: PICK
Select an object of the Type you want <*>: PICK
Collecting all LWPOLYLINE objects on layer GEOMETRY...
7 objects have been placed in the active selection set.
Command:
```

**EXF**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Selection tools&gt; Exclude Fence</i>	<b>EXF</b>	...	...	...	...

The *EXF* command allows you to use the *Fence* selection method to pick objects that are not to be included in the desired selection set. All other items (not selected with the *Fence*) automatically become highlighted as the selection set. *EXF* can be used before issuing a command, but it is also transparent so it can be used during another command. (Normally, if you wanted to select objects before issuing a command, only the pickbox, window, and crossing window options would be available.)

**EXP**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Selection tools&gt; Exclude Previous</i>	<b>EXP</b>	...	...	...	...

The *EXP* command automatically selects all objects on *Thawed* and *Unlocked* layers except the previous selection set. As with the *Previous* option, no actual selection is required on your part. *EXP* can be used before issuing a command, but it is also transparent.

**EXW**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Selection tools&gt; Exclude Window</i>	<b>EXW</b>	...	...	...	...

Use the *EXW* command to create a selection window around the objects you want to exclude from the selection set. All other items (not selected with the *EXW* window) automatically become highlighted as the selection set. As with the other *Express Selection Tools*, *EXW* is transparent.

**EXCW**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Selection tools&gt; Exclude Crossing Window</i>	<b>EXCW</b>	...	...	...	...

*EXCW* is similar to *EXW*, except a crossing window is used to pick objects that are not to be included in the desired selection set. All other items (not selected with the crossing window) automatically become highlighted as the selection set. *EXCW* can be used before issuing a command, but it is also transparent so it can be used during another command.

**EXWP**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Selection tools&gt; Exclude Window Polygon</b>	<b>EXWP</b>	...	...	...	...

Use the *EXWP* command to create a window polygon around the objects you want to exclude from the selection set. All other items (not selected with the window polygon) automatically become highlighted as the selection set. In some cases, A *Window Polygon* is preferred over a *Window* because the polygon can have any number of sides and any orientation, whereas a *Window* can only be rectangular. *EXWP* can be used before or during another command, similar to the other *Express Selection Tools*.

**EXCP**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Selection tools&gt; Exclude Crossing Polygon</b>	<b>EXCP</b>	...	...	...	...

This command allows you to select objects to exclude from the selection set using the *Crossing Polygon* selection method. The *EXCP* crossing polygon is similar to the *EXWP* window polygon, except in this case all objects within and crossing the polygon become excluded from the selection set. All other items (not selected with the crossing polygon) automatically become highlighted as the selection set. *EXCP* is a transparent command.

**PLJOIN**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<b>Express Modify&gt; Polyline Join</b>	<b>PLJOIN</b>	...	...	...	...

You can use *Pljoin* to join two or more polylines when the line endpoints do not meet exactly. *Pljoin* prompts you for a selection set (of polylines) and a fuzz distance.

```
Command: plinejoin
Select objects: PICK
Select objects: Enter
Join Type = Both (Fillet and Add)
Enter fuzz distance or [Jointype] <0.0000>: (value)
Processing pline data... Done.
Command:
```

At the “fuzz distance” prompt, enter a value large enough to fill the gap between the selected *Plines*. The *Jointype* option allows you to specify if you want to connect the *Plines* by either inserting a new segment (*Add*) or by trimming or extending the two segments to their common or extended intersection point, similar to filleting with a radius of 0 (*Fillet*). You can instead use the *PLJOINMODE* variable to set the *Jointype*.

**FULLSCREEN**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; Full Screen AutoCAD</i>	<b>FULLSCREEN</b>	...	...	...	...

*Fullscreen* re-sizes the AutoCAD window to fill the maximum amount of screen area by hiding the Windows title bar and the AutoCAD pull-down menu bar. *Fullscreen* also hides the Status bar. In full screen mode, you can click at the top of the window to make the pull-down menu bar appear but you cannot make the Status bar appear. Use *Fullscreen* again to return the AutoCAD display to the previous setting (normal screen mode).

**MKLTYPE**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; Make Linetype</i>	<b>MKLTYPE</b>	...	...	...	...

This new linetype maker allows you to create linetypes in two ways. First, you can create linetypes from an existing pattern of lines and polylines and easily turn them into a linetype without going through the typical linetype definition steps. For example, assume you have a series of line segments that you wish to use as your linetype “template.” Use the *Mklttype* command, follow the prompts shown below to select the existing line segments, and AutoCAD automatically creates and loads the new linetype.

Command: *mklttype*

(The *Select File* dialog box appears. Enter the desired name for an .LIN file to store the new linetype.)

Enter linetype name: **longdashes**

Enter linetype description: **Enter**

Specify starting point for line definition: **PICK** (first point to define segment length)

Specify ending point for line definition: **PICK** (second point)

Select objects: **PICK**

Select objects: **PICK**

Select objects: **PICK**

Select objects: **Enter**

Linetype “LONGDASHES” created and loaded.

Command:

Secondly, you can use *Mklttype* to define the linetype using the typical linetype definition method. You can even include shape or text objects to create a complex linetype, as shown in the following series of prompts.

Command: *mklttype*

Enter linetype name: **fence**

Enter linetype description: **a,1.5,-0.25,[“x”,standard,s=0.2,r=0.0,x=0.05,y=-0.1],-0.4,1.5**

Specify starting point for line definition: **PICK** (first point to define segment length)

Specify ending point for line definition: **PICK** (second point)

Select objects: **PICK** (to define object type)

Select objects: **Enter**

Linetype “FENCE” created and loaded.

Command:

Refer to Chapter 44, “Creating Custom Linetypes,” for information on linetype definitions.

**MKSHAPE**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; Make Shape</i>	<b>MKSHAPE</b>	...	...		

Use this new command to create shape files “on the fly” without having to go through the typical steps of shape definition. First, create some geometry composed of AutoCAD objects to use as the “template” shape. Next, use the *Mkshape* command and follow the prompts shown below to create the new shape file.

Command: *mkshape*

(The *Select File* dialog box appears. Enter the desired name for an .SHX file to store the new shape.)

Enter the name of the shape: **square**

Enter resolution <128>: **Enter** or (value)

Specify insertion base point: **PICK**

Select objects: **PICK**

Select objects: **PICK**

Select objects: **PICK**

Select objects: **PICK**

Select objects: **Enter**

Determining geometry extents...Done.

Building coord lists...Done.

Formating coords...|Done.

Writing new shape...Done.

Compiling shape/font description file

Compilation successful. Output file D:\A 2000 Instructor\Dwg\Ch47\newshapes.shx

contains 135 bytes.

Shape “SQUARE” created.

Use the SHAPE command to place shapes in your drawing.

Command:

**REDIR**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; Path Substitution</i>	<b>REDIR</b>	...	...		

The new *Redir* command allows you to substitute any or all hard coded path names for *Xrefs*, styles, shapes and images. *Redir* operates like a search and replace, so you can specify a new path, substitute a portion of a path, or even remove path references entirely. Use the “?” option to list the current paths.

Command: *redir*

Current REDIRMODE: Styles,Xrefs,Images,Rtext

Find and replace directory names

Enter old directory (use “\*” for all), or ? <options>: ?

Enter file references to list <\*>: **Enter**



```

Current REDIRMODE: Styles,Xrefs,Images,Rtext
TYPE      NAME      FILE
-----
STYLE     STANDARD  TXT
STYLE     30-FLOR|STANDARD  TXT
STYLE     30-FLOR|ROMANS   ROMANS
STYLE     30-FLOR|COMPLEX  COMPLEX
STYLE     30-FLOR|SIMPLEX  SIMPLEX
STYLE     30-FACIL|STANDARD  TXT
STYLE     30-FACIL|ROMANS   ROMANS
STYLE     30-FACIL|COMPLEX  COMPLEX
STYLE     30-FACIL|SIMPLEX  SIMPLEX

XREF      30-FACIL  D:\Dwg\30-facil.dwg
XREF      30-FLOR   D:\Dwg\30-flor.dwg

```

Enter old directory (use '\*' for all), or ? <options>:

To use *Redir* to substitute a new path, follow the example prompt below.

```

Command: redir
Current REDIRMODE: Styles,Xrefs,Images,Rtext
Find and replace directory names
Enter old directory (use '*' for all), or ? <options>: D:\Dwg
Replace "D:\DWG" with: Q:\Dwg\Xrefs
Searching for old dir: D:\DWG
in order to replace it with: Q:\DWG\XREFS
XREF      30-FLOR  D:\Dwg\30-flor.dwg -> Q:\DWG\XREFS\30-FLOR.DWG
XREF      30-FACIL D:\Dwg\30-facil.dwg -> Q:\DWG\XREFS\30-FACIL.DWG
0 style/shape records modified.
0 image references modified.
2 xrefs modified.
0 rtext objects modified.
Changes to some externally referenced objects may be temporary.
Command:

```

Enter the *Ridmode* command or use the *Options* in the *Redir* command to produce the *REDIRMODE* dialog box (Fig. 47-33). Here you select which objects you want to be affected by the *Redir* search and replace you specify.

Figure 47-33



**XDATA**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; Xdata Attachment</i>	<b>XDATA</b>	...	...	...	...

Extended entity data is additional information that can be attached to any AutoCAD object. Extended entity data provides an internal level of information “attached” to each individual object. This AutoCAD feature is extremely powerful for customization applications.

*Xdata* is an Express utility to simplify attaching extended entity data to an object. Use *Xdata* to produce the following prompt:

```
Command: xdata
Select object: PICK
Enter application name: (name)
(NAME) new application.
3Real/DIR/DISP/DIST/Hand/Int/LAyer/LONG/Pos/Real/SCale/STr/<eXit>: (option)
New xdata appended.
Command:
```

The prompt displays the areas of information that can be attached to an object: *3 Real numbers, 3D world space direction, 3D world space displacement, Distance, Database handle, 16-bit integer, Layer, 32-bit long integer, 3D world space position, Real number, Scale factor, and ASCII string.*

**XDLIST**

Pull-down Menu	COMMAND (TYPE)	ALIAS (TYPE)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Express Tools&gt; List Entity Xdata</i>	<b>XDLIST</b>	...	...	...	...

*Xdlist* lists extended entity data attached to a nested object. An example is listed below:

```
Command: xdlist
Select object: PICK
Enter application name <*>: (name)
* Registered Application Name: (NAME)
* Code 1002, Starting or ending brace: {
* Code 1000, ASCII string:
* Code 1003, Layer name: 0
* Code 1042, Scale factor: 0.5000
* Code 1000, ASCII string: sample object
* Code 1002, Starting or ending brace: }
Object has 16347 bytes of Xdata space available.
```

## Additional Express Tools Commands, Command Line Entry Only

Commands in this section are not included in the Express toolbars or *Express* pull-down menus. All of these commands must be typed.

### **BLOCK?**

This utility lists coordinate and other information about objects composing a *Block* definition as shown in the following example:

```
Command: block?
Block name/<Return to select>: PICK
Enter an entity type/<Return for all>: Enter
Press ESC to exit or any key to continue.

((0 . "BLOCK") (2 . "TBLOCK2") (70 . 2) (10 0.0 0.0 0.0) (-2 . <Entity name:
2b90668>))

((-1 . <Entity name: 2b90668>) (0 . "LWPOLYLINE") (5 . "65") (100 .
"AcDbEntity") (67 . 0) (8 . "0") (100 . "AcDbPolyline") (90 . 4) (70 . 0) (43 .
0.02) (38 . 0.0) (39 . 0.0) (10 -4.0 0.0) (40 . 0.02) (41 . 0.02) (42 . 0.0)
(10 -4.0 0.0) (40 . 0.02) (41 . 0.02) (42 . 0.0) (10 -4.0 1.625) (40 . 0.02)
(41 . 0.02) (42 . 0.0) (10 0.0 1.625) (40 . 0.02) (41 . 0.02) (42 . 0.0) (210
0.0 0.0 1.0))

((-1 . <Entity name: 2b90698>) (0 . "LINE") (5 . "6B") (100 . "AcDbEntity") (67
. 0) (8 . "0") (100 . "AcDbLine") (10 -4.0 0.375 0.0) (11 0.0 0.375 0.0) (210
0.0 0.0 1.0))
```

### **BCOUNT**

The *Bcount* Express command counts and lists the number of *Block* insertions in each drawing or selection set. You can count all *Blocks* in a drawing or specify a selection window. The following example is the *Bcount* results for the example schematic drawing used in Chapter 22:

```
Command: count
Press enter to select all or...
Select objects: Enter

Counting block insertions...Block Count
-----
CAP ..... 3
RES ..... 3

Command:
```

### **SSX**

*SSX* is a powerful utility that allows you to find objects of similar type (*Circle*, *Arc*, *Line*, etc.) for the selection set by selecting only one object. You can also specify a certain criteria. This feature is simpler than using *Filter* but can be almost as powerful. Enter *SSX* at the command prompt to initialize the routine, then enter "(SSX)" at any "Select objects:" prompt to use it. For example, you can select all similar objects ("Flatfile" block in this case) by selecting only one:

```
Command: move
Select objects: (ssx)
Select object/<None>: PICK
Filter: ((0 . "INSERT") (2 . "FLATFILE") (8 . "FURNITURE") (210 0.0 0.0 1.0))
>>Block name/Color/Entity/Flag/LAyer/LType/Pick/Style/Thickness/Vector: Enter
10 found. 10 found
Select objects: Enter
Base point or displacement: PICK
Second point of displacement: PICK
Command:
```

## ***EXPRESSTOOLS***

You can use the *Expresstools* command to make the AutoCAD *Express Tools* available in the current profile if they are not yet available. *Expresstools* places the Express directory on the search path, and loads and places the *Express* menu on the pull-down menu bar. The *Express Tools* must first be installed for this command to operate (see “Installing the Express Tools from the CD-ROM” earlier this chapter).

Once the *Expresstools* command is used, the *Express Tools* libraries load when AutoCAD is started. This increases the load time for AutoCAD but reduces the delay when you use one of the tools for the first time.

## ***EXPRESSMENU***

*Expressmenu* loads the AutoCAD *Express* pull-down menu specifically. If the *Express Tool* commands are available on the command line but the *Express* pull-down menu is not displayed, use the *Expressmenu* command to display the menu.