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Get the Most out of the Express Tools

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GD43-1 With AutoCAD R14, Autodesk introduced a set of tools then named the Bonus Tools. These tools were groomed, developed, and loved by users. When the tools were offered for sale, the name changed to Express Tools. Even more tools were offered and some of the most popular were even incorporated into the AutoCAD product itself. We will take a look at the current state of the Express Tools. We'll look at several, see how they work, and examine uses for them. We will also discuss where some of the older tools have gone and answer several other questions about these tools.

About the Speaker:

Steven is a Building Solutions application specialist with IMAGINiT Technologies in Portland, Oregon. Steven provides technical expertise in support of AutoCAD, Autodesk Architectural Desktop, Autodesk Building Systems, and Revit Building software solutions. Prior to joining IMAGINiT Technologies, he was the CAD manager at a 120-person architectural firm, while also producing projects and assisting in the creation of construction documents. These experiences and his 25 years of architectural drafting, including 15 years of CAD drafting, help Steven bring a "working professional" attitude to the table. Graduating from Central Community College, Hastings, Nebraska, with an Associate of Applied Science degree in Architectural Drafting, Steven is also certified with Autodesk as an Autodesk Architectural Desktop Certified Expert and as an Autodesk Certified Instructor.

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Introduction and History of the Express Tools

With AutoCAD Release 14, Autodesk included a set of tools named the Bonus Tools. These tools grew out of tools developed by various users and programmers. They offered ways of working in AutoCAD that were not available to the average user. These tools became invaluable to users. They allowed the user to freeze layers by picking objects, walk thru layers and see the contents of those layers, translate the layers of one drawing to the layer system of another drawing, hide objects located below other objects, simplify the process of extracting and entering attribute data, and the list goes on and on.

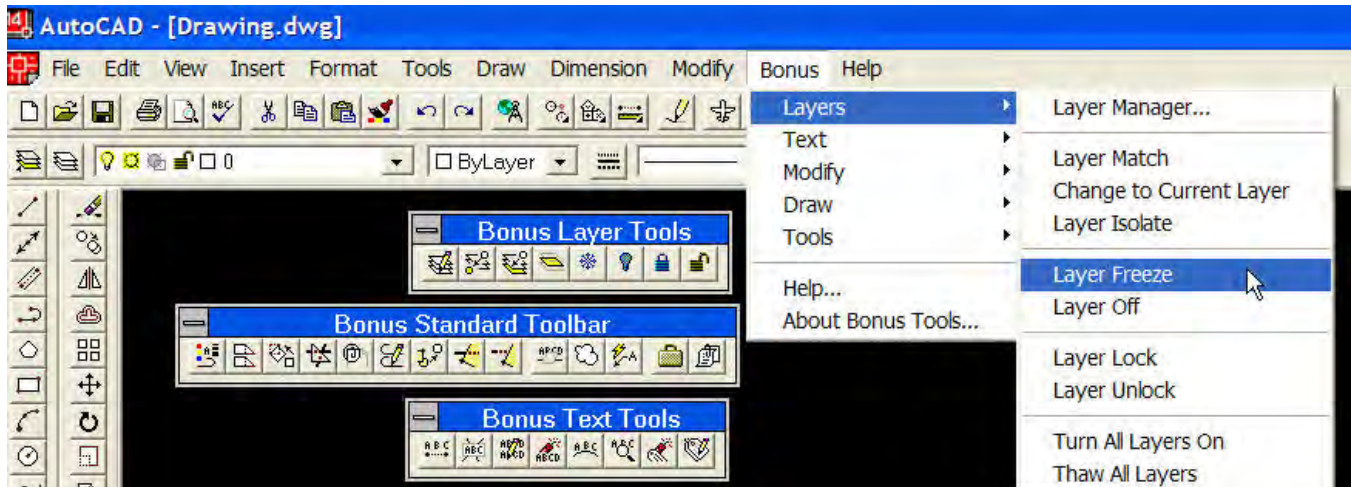


Figure 1: Bonus Tools in AutoCAD R14

Updated versions of the Bonus Tools were made available as the Express Tools for AutoCAD R14 by means of the VIP program. The VIP program later became the Subscription program.

With the Release of AutoCAD 2000, a subset of the Express Tools was included. But a full set could be purchased from Autodesk. They were also available to VIP/Subscription members. Price was under \$200 and was well worth it. During this time, nine updates were released to the Express Tools with new tools being added, older tools being incorporated into the core of AutoCAD and improvements being made to the favorites. There were also nuggets in the lisp code of these tools that were put to use by several programmers.

AutoCAD 2000i and 2002 were not supported to run the Express Tools, but the Knowledge Base on the Autodesk website contains information on how to migrate the 2000 tools to 2000i/2002. You could also use the Express Tools in the vertical products, such as Architectural Desktop, Land Desktop, etc.

When AutoCAD 2004 was released, it included the Express Tools on the install CD. You had to install the Express Tools after you had installed your product and if you had multiple products, you usually wanted to install the Express Tools last, as it found the products you installed and offered to install for each of those products.

AutoCAD 2005 contained the same installation technique as 2004, although the content of the tools was slightly different as some more tools were incorporated in the core product.

AutoCAD 2006 and 2006 Verticals

The 2006 products brought a different way of installing the Express Tools. While they were included on the CD with the product, they are not a separate install. On one of the dialog boxes presented during installation, you can select the check box to install the Express Tools, see Figure 2.

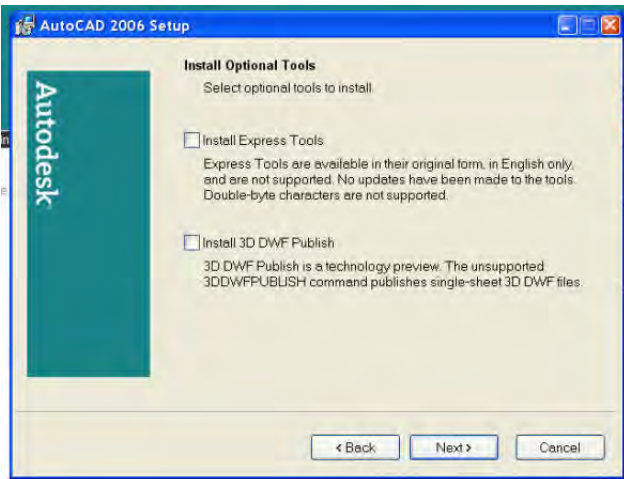


Figure 2: Typical AutoCAD 2006 Install

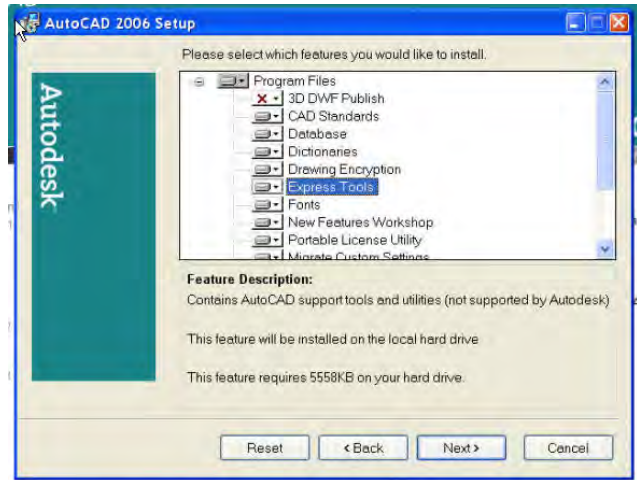


Figure 3: Custom AutoCAD 2006 Install

It is possible to do a Custom install and select the Express Tools as shown in Figure 3. If you have already installed the product, you can go to your Control Panel, select Add or Remove Programs, AutoCAD 2006 (or your vertical product), and select Change. In the resulting dialog, select Add or Remove features. You will be greeted by a dialog similar to the dialog illustrated in Figure 3.

On the vertical side, there are issues with installing the Express Tools with Autodesk Architectural Desktop (ADT) and Autodesk Building Systems (ABS). The following is a list of known issues that you might encounter when you use Express Tools within ADT 2006 or ABS 2006:

- Wipeout objects are placed at wrong elevation. If you set a new UCS current that has the Z coordinate set other than 0, wipeout objects placed in the drawing will still be placed at 0 elevation (World). To work around the problem, you must move the wipeout to the correct elevation.
- Change Space command crashes when ADT Objects are selected. Using Change Space command on ADT objects will often lead to the unexpected termination of your session.
- Change Space command breaks AEC Dimension associativity. Using the Change Space command on an AEC Dimension in model space will not bring the AEC Dimension into paper space correctly and the AEC Dimension becomes disassociated from the ADT objects. This will result in a defect marker being displayed.
- Change Space command can cause ARX errors. Do not use the Change Space command to bring tags placed in xrefs through paperspace into model space as this action will result in ARX errors and the tags association to the object will be lost.
- Arc Aligned Text and Hardware Acceleration crash. You may experience a crash if you copy MTEXT and paste it into the Arc Aligned Text dialog while you have Hardware Acceleration enabled.

How to get them to show up

The Express Tools menu pulldown and toolbars should show up when you start AutoCAD. But as we know, sometimes things don't work out that way. There are two commands that you can use to see the Express Tools.

The first is the EXPRESSTOOLS command. This command loads the AutoCAD Express Tools libraries, places the Express directory on the search path, loads and places the Express menu on the menu bar. You can use this command to make the AutoCAD Express Tools available in the current profile if they are not yet available. Once the EXPRESSTOOLS command is used, the AutoCAD Express Tools libraries are loaded when AutoCAD is launched. This increases the load time for AutoCAD but reduces the delay when you use one of the tools for the first time.

Another command available is the EXPRESSMENU command. The EXPRESSMENU command loads the AutoCAD Express Tools menu and displays the Express menu on the menu bar. When using the EXPRESSMENU command, "Perform a full rebuild of the Express Tools menu before loading it? : Enter Yes or No" is displayed on the command line. Make sure that you have 23 or fewer menu items before you run the EXPRESSMENU command. AutoCAD only displays up to 24 menu items. If the AutoCAD Express Tools menu cannot be found, you can use the EXPRESSTOOLS command to activate the tools.

What happened to some of the older favorite tools?

As the AutoCAD product matures and new releases come out, we see the number of tools in the Express Tools fall. This is due to the fact that many of the tools are so useful; they are added to the core of the AutoCAD product. Some of the tools that have been incorporated into the base product are: WIPEOUT, ATTOUT, ATTSYNC, BATTMAN, CLOSEALL, FULLPATH, GATTE, LAYTRANS, MPEDIT, PACK (Replaced by eTransmit), PLJOIN, PSBSCALE, PSTSCALE, and others.

What happened to LAYUNISO?

One of the most asked questions on the Express Tools discussion group is "What happened to the LAYUNISO command?" The LAYUNISO command undid what the LAYISO command did. That is, the LAYISO command would isolate the layer(s) of the object(s) selected. In other words, if I have a complicated or busy drawing and I want to do some things with some objects, I could temporarily reduce the amount of information displayed on the screen by running the LAYISO command, selecting the objects that resided on the layers I wanted to work with. Then when I was done and wanted to return the drawing to its original state, I would run the LAYUNISO command. This author was very fond of this method of working. But since the LAYUNISO command is not on the pulldown menu or a toolbar, the common answer is to use the Layer Previous command. This does in fact work, but if you had done anything with the layers between LAYISO and the Layer Previous command, that work is also undone. So the other response given is to create a button for the LAYUNISO command or to merely type the command on the command line. A shortcut could be created also.

Another issue with using the LAYISO command without the LAYUNISO command is that the LAYISO command creates a Layer Manager setting. This is the Express Tools Layer Manager, not the Layer dialog. This setting, ACET-LAYISO, has been known in the past to interfere with the operation of the REFEDIT command. But this author has not experienced this in the 2005 or 2006 products. This setting could be removed using the Express Tools Layer Manager.

Layer Manager, Layer Settings, Layer States, Layer Snapshots?

These four terms tend to get confused and with the advent of Layer Snapshots in ADT and ABS, the confusion is easy to see. So what are these four terms?

The Layer Manager, Express Tools version, was introduced in the original Bonus Tools and is still present in 2006. It allows the user to save the current state of layers to a Layer Setting, which could be named. Then this setting could be restored at any time. It also could be exported to an external file and imported to another drawing file. This was very useful for managing layers for phasing, floor levels, and other uses.

Layer States were introduced in AutoCAD 2000 and are part of the core product. These are accessed in the Layer Dialog and work similar to the Layer Settings in the Express Tools Layer Manager. At one time there was lisp code floating around that allowed you to convert between Layer Settings and Layer States. Layer States also can be exported and imported.

Layer Snapshots were introduced in ADT 2004 and are still present in ADT 2005 and 2006. These are again very similar to the Layer Settings and Layer States. See what I mean about the confusion? Layer Snapshots can be assigned to Model Space Views when working in the Drawing Management module in ADT.

Review of Current Express Tools

So we have discussed the history, how to install, where have they gone, etc. So, just what are these tools and how can they help us? Let's take a look.

How do you access the Express Tools? Three major ways:

- Pulldown Menus
- Command Line
- Toolbars

The Pulldown Menus are created by the install or the EXPRESSTOOLS command. The Express menu pulldown is usually placed near the end of the menus. Your location may vary. There are eleven cascade menus for each of the categories of tools. There may be one or more cascade menus for each of the categories. The help system for the Express tools is very good. Take a few moments sometime to review the help file and also the Express Tools FAQ. The Web Links cascade has links to the Express Tools website, the Express Tools discussion group and the Autodesk Products and Support website.

On the Command Line, you can type the command name of the Express Tool you want to use. Note that there are several tools that do not appear on the pulldown menu and toolbars. In a later section, we will see the names of the Express Tools and what the command name is.

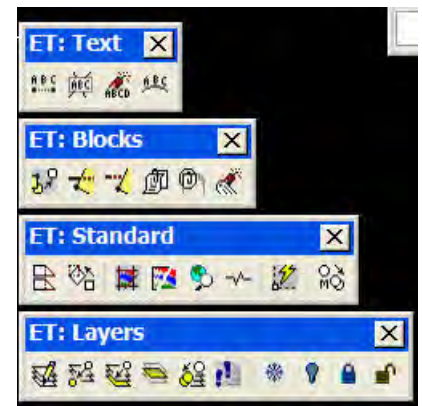
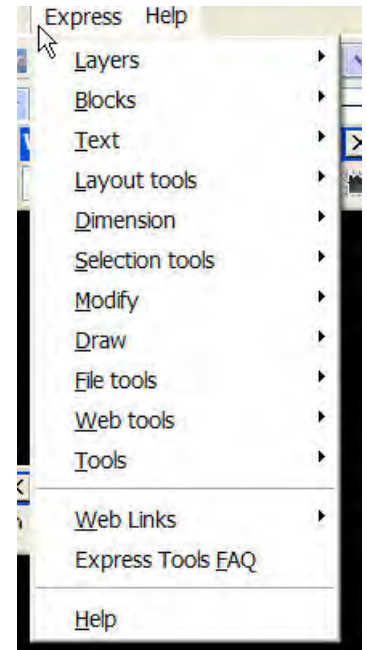
The Toolbars are a very handy way to start and use the commonly used Express Tools. There are four toolbars: Blocks, Layers, Standard and Text. The figure to the right illustrates these toolbars. This author has found it very helpful to have at least the Layers toolbar up at all times. I am sure some of these buttons would have the paint wore off of them if that were possible! Each of these buttons has a tooltip to briefly explain the purpose of the tool. There are four Toolbars that come with the Express Tools. The buttons that are on the toolbars are as follows and as illustrated to the right:

Text Toolbar: Text Fit, Text Mask, Explode Text, Arc-Aligned Text

Blocks Toolbar: Copy Nested Objects, Trim to Nested Objects, Extend to Nested Objects, List Xref/Block Properties, Extended Clip, Explode Attributes to Text.

Standard Toolbar: Multiple Object Stretch, Move/Copy/Rotate, Super Hatch, Toggle Frames, Show URLs, Beak-line Symbol, Fast Select, Multiple Copy

Layers Toolbar: Layer Manager, Layer Match, Change to Current Layer, Layer Isolate, Copy Objects to New Layer, Layer Walk, Layer Freeze, Layer Off, Layer Lock, Layer Unlock



Now let's look at the tools themselves!

In the following pages you will find a description of the Express Tools as provided with the 2006 family of AutoCAD products. You will find the tools listed in the order that they appear on the pulldown menu and grouped by the cascade they are found under. The first column will give you the name of the tool, the second column will list the command name you can input at the command line. Finally the last column will describe what the tool actually does.

Layers		
Copy objects to new layer	COPYTOLAYER	Copies selected object(s) to a layer.
Layer Manager	LMAN	Manages layer settings by allowing you to save and restore layer configurations into layer states. Layer states can be modified, restored, or renamed during an AutoCAD session. Layer states are saved in the drawing, but they can also be exported to or imported from a LAY file.
Change to Current Layer	LAYCUR	Sets the current layer to the layer of the selected object.
Layer Delete	LAYDEL	Deletes the layer(s) and the objects on that layer(s).
Layer Freeze	LAYFRZ	Freezes the selected layer(s), Three levels <ul style="list-style-type: none"> o Entity level nesting: Freeze the layer of the entity, even if it is a block or xref o Block level nesting: Freeze the layer of the object, if nested the block layer is frozen o No nesting: If block or xref is selected, layer of insert is frozen
Isolate Layer	LAYISO	Isolates the selected layer(s) by turning off all other layers.
Layer Lock	LAYLCK	Locks the selected layer(s).
Layer Match	LAYMCH	Changes the layer(s) of selected object(s) to match the layer of a selected destination object.
Layer Merge	LAYMRG	Moves all objects on the first layer selected onto the second layer selected. The first layer will be purged from the drawing. Useful for removing layers that can not be purged.
Layer Off	LAYOFF	Turns off the selected layer(s).
Turn all layers on	LAYON	Turns on all layers.
Thaw all layers	LAYTHW	Thaws all layers.
Layer unlock	LAYULK	Unlocks the layer of a selected object.
Isolate layer to current viewport	LAYVPI	Isolates the selected layer(s) to the current viewport. Layers are frozen in all viewports except the current one. Includes an option to control whether the operation affects all layouts or only the current one.
Layer viewport mode	LAYVPMODE	Controls whether the layer utilities (LAYISO, LAYFRZ and LAYOFF) use VPFreeze or the standard layer Freeze or Off when used in a floating paper space viewport.
Layer Walk	LAYWALK	Dynamically displays objects on selected layers.

Blocks		
Import Attribute Information	ATTIN	Imports block attribute values from an external, tab-delimited ASCII file.
Export Attribute Information	ATTOUT	Exports block attribute values to an external file in tab-delimited ASCII format.
Scale block	BSCALE	Scales a block insert from its insertion point.
Replace block with Another Block	BLOCKREPLACE	Allows you to globally replace all inserts of one block with another block.
Convert block to Xref	BLOCKTOXREF	Replaces all instances of a standard block with an xref. Unbinds xrefs that are bound.
Explode Attributes to Text	BURST	Explodes blocks, converting attribute values to text objects.
Copy Nested Entities	NCOPY	Copies objects nested in an xref or a block.
List Xref/Block Entities	XLIST	Lists the type, block name, layer name, color and linetype of a nested object in a block or an xref.
Scale Block PS	PSBSCALE	Sets or updates the scale of block objects relative to paper space.

Text		
Arc Aligned Text	ARCTEXT	Places text along an arc. Dialog box to specify options.
Paper Space Text Scale	PSTSCALE	Paper space text scaling utility.
Remote Text Edit	RTEDIT	Allows you to edit existing remote text (Rtext) objects.
Remote Text	RTEXT	Creates reactive text. Reactive text objects are displayed the same way normal Text or Mtext objects are displayed, but the source for the text is either an external text file or the value of a DIESEL expression.
Change Text Case	TCASE	Changes the case of selected text, mtext, attributes and dimension text.
Enclose Text With Object	TCIRCLE	Places a circle, a slot, or a rectangle around each selected text or mtext object.
Automatic Text Numbering	TCOUNT	Adds sequential numbering to text objects. The numbering can appear as a prefix, suffix or replacement text.
Text Fit	TEXTFIT	Stretches or shrinks text objects by selecting new start and/or end points.
Text Mask	TEXTMASK	Places a mask object behind selected text or mtext. The rectangular mask is offset from the text by a specified value.
Unmask Text	TEXTUNMASK	Removes mask from text that has been masked with the TEXTMASK command.

Text Continued

Justify Text	TJUST	Changes a text object's justification without changing its position. Works with text, mtext, and attribute definition objects.
Orient Text	TORIENT	Aligns text, mtext and block attribute objects to new orientation.
Text Scale	TSCALE	Scales text, mtext, attributes and attribute definitions.
Convert Text To Mtext	TXT2MTXT	Converts one or more lines of text to mtext.
Explode Text	TXTEXP	Explodes Text or Mtext into geometry that can be assigned a thickness or an elevation.

Layout Tools

Align Space MS/PS	ALIGNSPACE	Adjusts a viewport's zoom factor and panning position based on the alignment points specified in model space and paper space.
Change Space MS/PS	CHSPACE	Seamlessly moves objects from one space to the other while maintaining the appearance of the original objects.
Merge Layouts	LAYOUTMERGE	Combines specified layouts into the current layout.
Viewport Scale	VPSCALE	Displays a clear translation of the scale of the current or selected viewport.
Synchronize Viewports	VPSYNC	Synchronizes one or more viewports with a master viewport. All synchronized viewports will take on the zoom factor of the master viewport.

Dimension

Dimstyle Export	DIMEX	Exports named dimension styles and their settings to an external file.
Dimstyle Import	DIMIM	Imports named dimension styles from a DIM file into the current drawing.
Reset Dim Text Value	DIMREASSOC	Restores a measurement value to overridden or modified dimension text.
Attach Leader To Annotation	QLATTACH	Attaches leader line to mtext, tolerance, or block reference object.
Global Attach Leader To Annotation	QLATTACHSET	Globally attaches leaders line to mtext, tolerance, or block reference objects. This command is intended primarily for leaders created by R13.
Detach Leader Lines	QLDETACHSET	Detaches leader line from mtext, tolerance, or block reference object.

Selection Tools		
Fast Select	FASTSELECT	Creates a selection set of objects that touch the selected object.
Get Selection Set	GETSEL	Creates a temporary selection set of objects.

Modify		
Extended Clip	CLIPIT	Clips xrefs or images with lines and curves. Allows curved clipping; isolates specified portions of blocks, xref drawings, images, and Wipeouts, by clipping or removing the display of all other objects with a polyline, circle, arc, ellipse, text, mtext, or attribute definition. With CLIPIT you can use ARCS, CIRCLES, or POLYLINES to define clipping boundaries for BLOCKS, XREFS, IMAGES, and WIPEOUTS. Draw arcs, circles, and/or polylines to define area(s) to be clipped.
Multiple Copy	COPYM	Copies multiple objects with Repeat, Array, Divide and Measure options.
Extended Offset	EXOFFSET	This enhanced version of the OFFSET command offers several advantages over the standard command, including layer control, undo, and a multiple option.
Move Copy Rotate	MOCORO	Moves, copies, rotates, and scales object(s) with a single command.
Multiple Entity Stretch	MSTRETCH	Allows multiple crossing windows and/or crossing polygons to be specified for a single stretch operation.
Convert Shape To Block	SHP2BLK	Creates a new block definition based on the appearance of a shape object.

Draw		
Breakline Symbol	BREAKLINE	Creates a polyline and inserts the breakline symbol.
Super Hatch	SUPERHATCH	SUPERHATCH works like the hatch command, but it allows you to use an image, block, xref, or WIPEOUT object as a hatch pattern.

File Tools		
Close All Drawings	CLOSEALL	Close all open drawings, asking whether to save changes if the drawing has been modified since the last Save. This command does not work in SDI mode, which does not support the zero document state.
Image Edit	IMAGEEDIT	Launches the image-editing program (for example, Paintbrush) for the selected image.
Move BAK Files	MOVEBAK	Changes the destination directory for BAK files.
Quick Exit	QQUIT	Close all open drawings and exit.
Path Substitution	REDIR	Redefines hard-coded paths in xrefs, images, shapes, styles, and rtext.
Update Drawing Properties Data	PROPULATE	Update, list or clear Drawing Properties data.
Revert	REVERT	Closes and re-opens the current drawing.
Convert PLT to DWG	PLT2DWG	Imports HPGL files into the current drawing session. All colors are retained. PLT2DWG does not support Draftpro DXL and Draftpro EXL which are listed as options 6 and 7 in the Supported Models section under the Hewlett-Packard (HP-GL) ADI 4.2 - by Autodesk, Inc. device driver. Also, the default system printer and the HPGL/2 printer are not supported.
Redir Mode	REDIRMODE	Sets options for the REDIR command by specifying which object types the command should act on.
Save All Drawings	SAVEALL	Saves all open drawings.

Web Tools		
Change URLs	CHURLS	Provides a method to change a previously placed URL (Uniform Resource Locator) address.
Find and Replace URLs	REPURLS	Finds and replaces previously placed URL (Universal Resource Locator) addresses with a new address.
Show URLs	SHOWURLS	Displays all embedded URLs (Universal Resource Locator) contained in a drawing. Allows URLs to be edited.

Tools		
Command Alias Editor	ALIASEDIT	Allows you to create, modify, and delete AutoCAD command aliases on-the-fly.
Plan View	EXPLAN	An extended version of the PLAN command.
Full Screen AutoCAD	FULLSCREEN	Resizes the drawing screen to a maximum area. Hides the title bar and the menu bar in the AutoCAD window.
Make Linetype	MKLTYPE	Creates a linetype based on selected objects.
Make Shape	MKSHAPE	Creates a shape definition based on selected objects.
Real Time UCS	RTUCS	Rotate the UCS dynamically with your pointing device.
System Variable Editor	SYSVDLG	Allows you to view, edit and save system variable settings.
Xdata Attachment	XDATA	Attaches extended object data (xdata) to a selected object.

Command Line Only		
List Block	BLOCK?	Lists the objects in a block definition.
Block Count	BCOUNT	Counts, itemizes, and displays in tabular form, the number of insertions of each block in the selected objects or in the entire drawing.
Draw Order by Color	CDORDER	Arranges the drawing order of objects by color number.
Drawing Log	DWGLOG	Creates and maintains an individual log file for each drawing file as it is accessed.
Drawing Editing Time	EDITTIME	Tracks the amount of active editing time for a drawing.
Load Express Menu	EXPRESSMENU	Loads the AutoCAD Express Tools menu and displays the Express menu on the menu bar.
Load Express Tools	EXPRESSTOOLS	Loads the AutoCAD Express Tools libraries, places the Express directory on the search path, and loads and places the Express menu on the menu bar.
Cookie Cutter Trim	EXTRIM	Trims all objects at the cutting edge specified by a selected Polyline, Line, Circle, Arc, Ellipse, Text, mtext, or Attribute Definition.
Flatten 3D	FLATTEN	Converts 3D geometry to 2D geometry.
Global Attribute Edit	GATTE	Globally changes attribute values for all insertions of a specific block.
Julian Date	JULIAN	AutoCAD Julian date / calendar date conversion routines.
Lisp Commands	LSP	Displays a list of AutoLISP commands available at the command prompt.
Lisp Surfer	LSPSURF	Displays the contents of an AutoLISP file by individual functions.
Multiple Polyline Editor	MPEDIT	Functions like PEDIT but with multiple polyline capabilities. Converts line and arc objects to polylines.

Delete Duplicate Objects	OVERKILL	Removes unneeded objects by deleting duplicates and combining line and arc segments that overlap.
Selection Set	SSX	Creates a selection set.
Toggle Frames	TFRAMES	Toggles the state of frames for Wipeout and image objects. If frames are turned on, this command turns them off, and vice versa.

OS Command Line		
Convert SHX to SHP	DUMPSHX	Converts existing SHX (compiled) files to the equivalent SHP (decompiled) files.

Conclusion

The Express Tools, or previously the Bonus Tools, were tools that were created by users and programmers with a specific purpose in mind. As usual, more than just that user had that same need. By creating these tools, the task at hand is a little easier, and that is what productivity is all about, is it not?

By getting familiar with the Express Tools, learning how they are installed and used can help you in your quest for productivity. Get to know these tools. Know which ones to use, when to use and how to use it. Give each of them an opportunity to show itself off. Will you find a use for every one? Probably not. But as this author has found, it can be a challenge to work without them at times.

The help files for the Express Tools are a very good place to find more about these tools. Also there are several entries in blogs concerning the Express Tools.

An informal poll on the Express Tools discussion group, and of some coworkers, brought these tools as favorites or ones they could not work without:

Layer Freeze	Isolate Layer	Layer Walk
Explode Attributes to Text	Copy Nested Entities	List Xref/Block Entities
Arc Aligned Text	Orient Text	Convert Text to Mtext
Explode Text	Align Space MS/PS	Change Space MS/PS
Synchronize Viewports	Fast Select	Extended Clip
Multiple Copy	Breakline	Super Hatch
Command Alias Editor	System Variable Editor	Cookie Cutter Trim

Of the above list, there were a few arguments about if one or another was actually usable, but several were hands down favorites.

My question to you now is, "Which one is your favorite?"

