



# Autodesk® AutoCAD® Secrets Exposed!

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## AC1414

This class is filled with time-saving tips and tricks that can be used to increase your productivity immediately. If you have attended previous offerings of this class, you know there is always something you didn't know you could do, so don't miss it this year. We have new tips to expose, including tips from the new and exciting Autodesk AutoCAD 2014. Some of the best and most production-enhancing tools have been introduced in recent upgrades. To take advantage of them, attend this class and discover what might take you years to discover on your own. Leave this class with the knowledge to dazzle your coworkers back home—a great way to ensure yourself a ticket to attend next year.

## Learning Objectives

At the end of this class, you will be able to:

- Use hidden tips and tricks from other AutoCAD users
- Share tips that apply to many versions of AutoCAD ranging from 2009-2014
- Use the newer tools for greater productivity
- Use hidden tips that you may not find on your own

## About the Speaker

*Jeanne is known for keeping her training sessions fast moving and fun. She is a nationally known speaker and expert in CAD and presents seminars and workshops on CAD productivity for managers and users in both corporate and academic settings. She has over 30+ years' experience involving production drafting, user support, standards coordination, programming, and training in various CAD applications. She is an independent consultant offering training and implementation services and is certified in several Autodesk and Bentley products. She continues to be actively involved in international, national, and local CAD user groups and received the much coveted Top Ten Speaker award for her presentations at AU. She has been a popular speaker at AU for several years.*

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# 1 Copy Objects from the XREF

2002-2014

Have you ever wanted to copy an object or several objects from a reference file?

Hopefully, you are already familiar with the single object method. To copy a single object you use the EXPRESS TOOL → BLOCKS → COPY NESTED OBJECTS.

## Copy SINGLE Object from XREF:

- STEP 1:** Select the ribbon Express Tools → Blocks → Copy Nested Objects
- STEP 2:** Select the object in the reference file and copy it to a new location.

The next option is a little more difficult, but well worth the effort!

## Copy MULTIPLE Objects from XREF:

- STEP 1:** Select the XREF you need to copy objects from.
- STEP 2:** Using the EXTERNAL REFERENCE contextual ribbon, select the EDIT REFERENCE IN PLACE command.



- STEP 3:** Choose the level of editing you need, file, block, etc. and highlight the appropriate level.
- STEP 4:** Select the objects you want to copy and copy them to the new location.
- STEP 5:** Select the new copied objects.
- STEP 6:** Select the REMOVE FROM WORKING SET command from the ribbon.



This will remove the newly copied objects from the xref file set.

- STEP 7:** Select the SAVE CHANGES command from the ribbon.

You are now back in the original drawing and the objects you copied are in this file not the XREF file.

## 2 Easy Super/Sub-Script Text

2002-2014

You can use the stacked fractions to get quick and easy superscript or subscript text without the dialog box.

### SuperScript Text

STEP 1: Key in 2 32^ and highlight the 32^

STEP 2: Select the Stacked Fraction button 

Superscript  $2^{32}$

### Subscript Text

STEP 1: Key in 2 ^a and highlight the ^a

STEP 2: Select the Stacked Fraction button 

Subscript  $2_a$

### More Examples

Key in TOP/BOTTOM and highlight the entire string

STACK TIP -  $\frac{TOP}{BOTTOM}$

Key in TOP#BOTTOM and highlight the entire string

STACK TIP -  $\frac{TOP}{BOTTOM}$

Key in TOP^BOTTOM and highlight the entire string

STACK TIP -  $\frac{TOP}{BOTTOM}$

Key in TOP^BOTTOM and highlight the ^BOTTOM

STACK TIP -  $TOP_{BOTTOM}$

Key in TOPBOTTOM^ and highlight the BOTTOM^

STACK TIP -  $TOP_{BOTTOM}$

## 3 Stack Those Dimensions

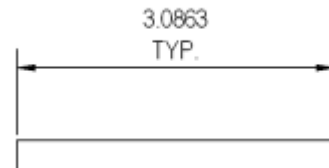
2002-2014

Now that you know everything you need to stack text objects, what about dimensions? Unfortunately, the previous options don't work the same when you are working with dimension text. But try this little trick, it works great!

### Two lines of Dimension Text

**STEP 1:** Edit the dimension text using the MText editor.

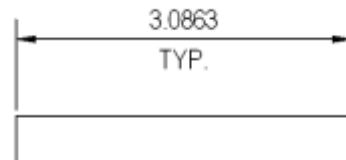
**STEP 2:** Press the ENTER key after the "dim value" in the editor and add TYP. on the second line.



You should notice that the output wasn't quite what you were expecting.

**STEP 3:** Edit the dimension text again, and change it to "dim value" \XTYP.

Isn't that what you really wanted?



## 4 Using BYBLOCK

2002-2014

There are two generic options for layer color, weight and linetype in AutoCAD, they are BYLAYER and BYBLOCK. Everyone knows and uses the BYLAYER property setting, but I am always amazed how many users don't use or don't understand the BYBLOCK property setting.

### BYBLOCK Definition

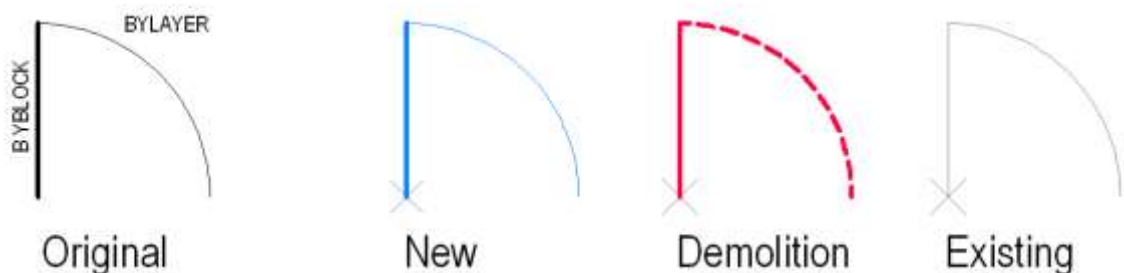
Inherit individual properties first, use layer properties second.

### BYBLOCK Example

This example will show you how you can use the BYBLOCK property definition to create "generic" blocks that can be used for more than one representation.

This one DOOR block can be used for Existing, New and Demolition block symbology.

- STEP 1:** Create DOOR block using BYBLOCK for color, linetype, and linewidth on the Door Panel object, and BYLAYER for color, linetype, and linewidth on the Door Swing object.
- STEP 2:** Place the DOOR block on the following layers, A-Door, A-Door-Demo, A-Door-Exst.
- STEP 3:** Select the NEW door block and change the CURRENT WEIGHT to .50
- STEP 4:** Select the DEMOLITION door block and change the CURRENT LINETYPE to CONTINUOUS.

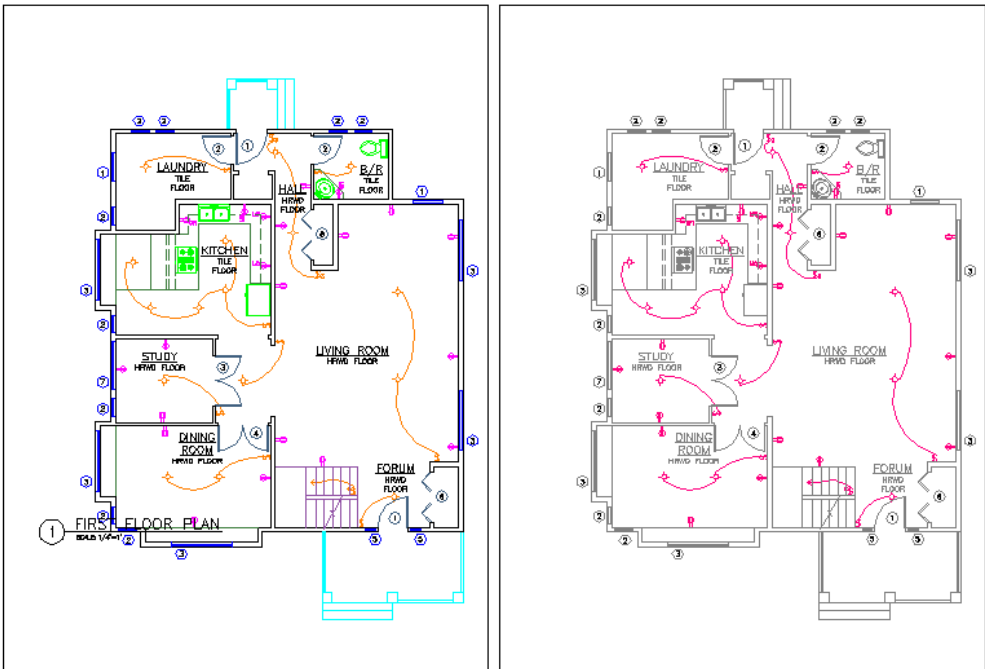


5

Viewport Symbolology

2008-2014

New in 2008 was the ability to define layer symbology (color, linetype, weight, etc) on a per viewport basis similar to layer viewport freeze and thaw.



Use this process to coordinate viewports as shown above.

STEP 1:     <Double-Click> in a viewport to activate it and to move the focus of AutoCAD to the viewport

STEP 2:     Open the **Layer Manager** and define the colors, weights, and linetypes using the new **VPColor**, **VPLinetype** and **VPWeight** columns.

You might need to **REGEN** the viewport to see the changes.

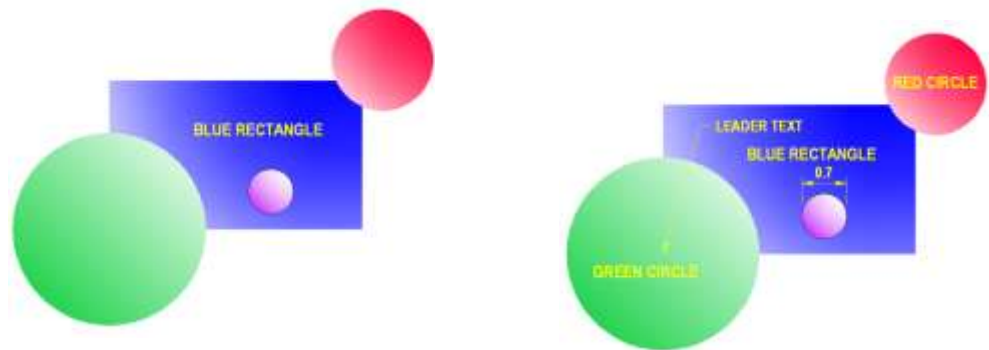
Notice the “bluish tint” color added to the layer list to help you identify what layer settings has been overridden on a viewport basis.

V...	VP Color	VP Linetype	VP Lineweight	VP
	white	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	230	Continuous	0.30 mm	Col
	230	Continuous	0.30 mm	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col
	8	Continuous	Default	Col

## 6 The TEXTTOFRONT Command

2004-2014

Use the command TEXTTOFRONT to bring all your text and dimension text to the top of the draworder stack.



*And use the new 2014 command option to also control your MULTI-LEADERS.*

## 7 Crossing Select Where?

2006-2014

Did you know that you can select a list in a dialog with a crossing window? Yep...just drag your cursor in the dialog and everything crossing is selected.

### Layer Manager

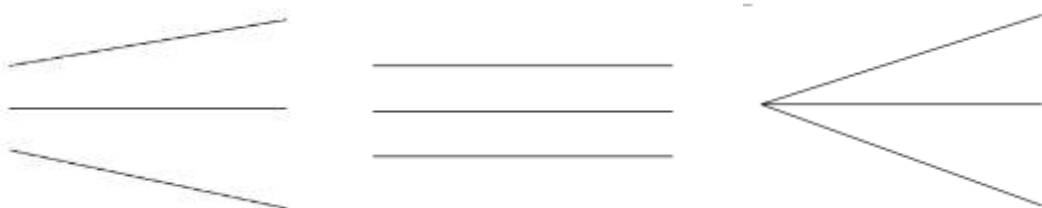
- STEP 1:** Drag the cursor over the list in the crossing direction and it selects the layers automatically.

## 8 CHANGE Command

2006-2014

The real power of this command is in the “change point” options. The capabilities of this option varies based on the type of objects selected.

- STEP 1:** Select linear objects and using ortho, force the lines to be perpendicular to each other



## 9 Using the CAL command

2002-2014

In 2006, they added my most common use for the CAL command. I used it to locate the “center” of objects, for example, the center of a wall or road, or the center of a room. Of course, today you can use the MID BETWEEN 2 PTS. But think of other uses for this “oldie but goodie” command to perform similar tasks not covered by the MID BETWEEN 2 PTS.

STEP 1: Use 'CAL(END+END)/3

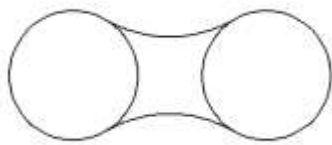
## 10 Fillet What?

2002-2014

Sometimes the most common commands have hidden capabilities that are easily overlooked.

### Parallel Lines

Use the FILLET command to fillet between PARALLEL LINES?



### Circles

Use the FILLET command to fillet between two circles?



# 11 Multiple - any command

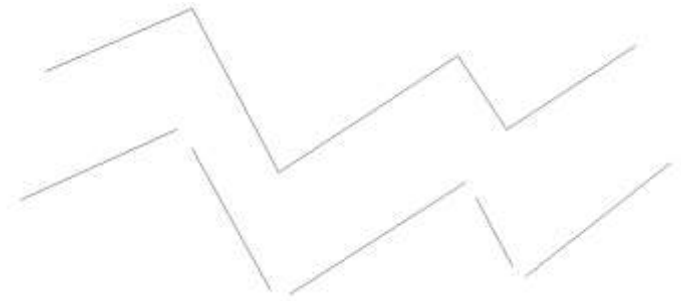
2002-2014

Now that the COPY command is automatically multiple; do you wish for other “multiple” commands? What about the LINE command; or the FILLET command?

The only problem with the MULTIPLE command is that you have to hit ESC to stop it; and it won't work with commands that use a dialog box.

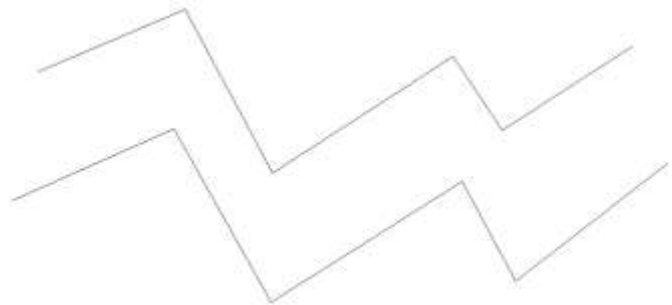
## Multiple LINE

- STEP 1: Key in **MULTIPLE**
- STEP 2: Key in **LINE** for the command to repeat
- STEP 3: Draw several lines without stopping the command.
- STEP 4: Issue an **<ESC>** to end the line command.



## Multiple FILLET

- STEP 1: Key in **MULTIPLE**
- STEP 2: Key in **FILLET** for the command to repeat
- STEP 3: Clean up several line intersections using the multiple fillet
- STEP 4: Issue an **<ESC>** to end the fillet command.

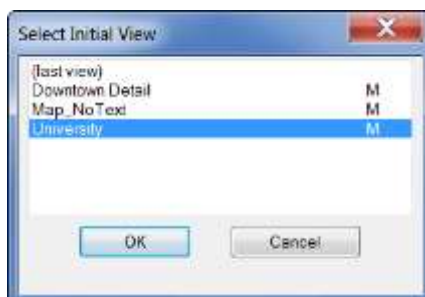
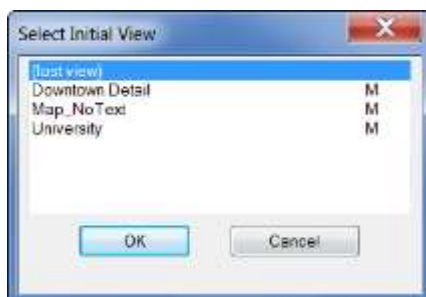
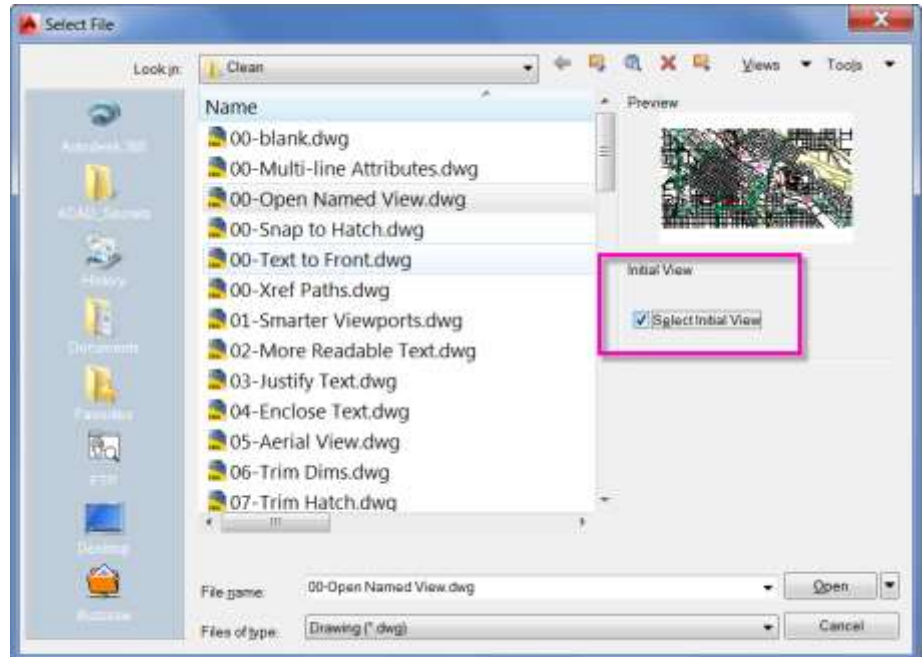


# 12 Open to Named View

2004-2014

Do you use named views to zero in on specific areas and pre-defined layer states? Then you might like this next secret. Use the **SELECT INITIAL VIEW** option found in the **OPEN** dialog to open a drawing to a specific named view.

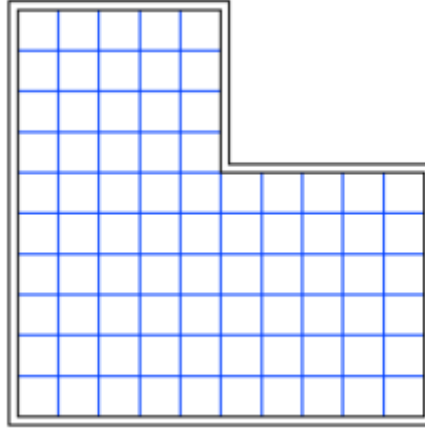
- STEP 1:** Turn on **SELECT INITIAL VIEW**
- STEP 2:** Open the file and you automatically open to the selected named view and its specific layer and area settings.



## 13 Snap to Hatches

2004-2014

The system variable **OSNAPHATCH** allows you to snap to individual hatch objects. By default, this is disabled.



### OSNAPHATCH

Controls whether the OBJECT SNAPS will snap to the hatch pattern.

0 (default)	Ignore the hatch pattern when snapping.
1	Snaps to hatch pattern.



*This system variable has disappeared from the online help, so it has become SUPER SECRET!*

## 14 Re-arrange Layouts

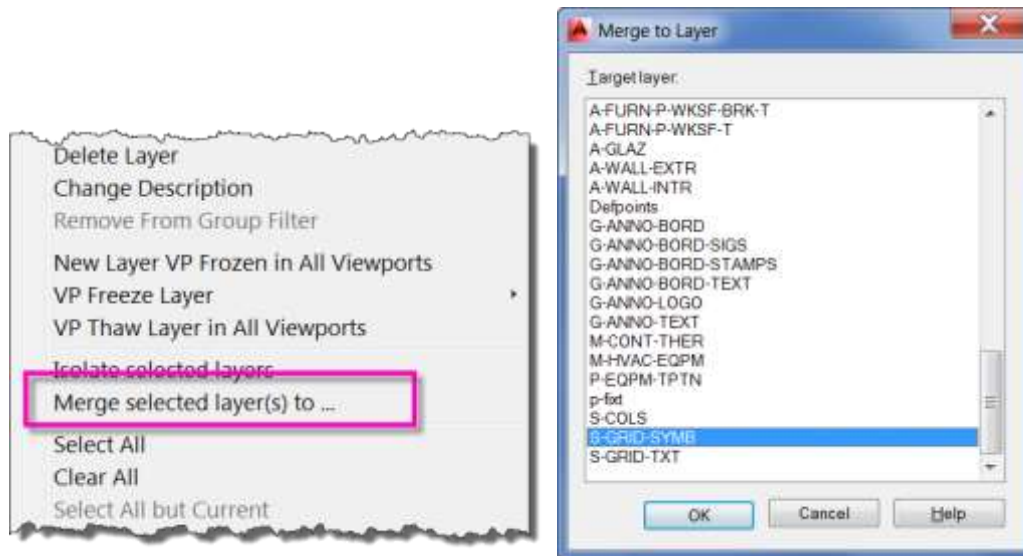
2009-2014

Use <Drag-n-Drop> to re-arrange your layouts.

## 15 Merge Selected Layers

2009-2014

Use the LAYER MERGE command to remove layers that you cannot purge. We have all struggled with this problem. Using the LAYER MANAGER dialog, <Right-Click> to access the MERGE SELECTED LAYER(S) TO...command. A dialog appears with a list of all layers to allow you to easily select the layer to merge to.



## 16 Cycle Viewports

2002-2014

Ever been stuck in a viewport that erroneously was created inside another viewport? How do you activate a “nested” viewport?

Use the **CTRL+R** to toggle between viewports in paperspace.



You can also <Double-Click> on the viewport object in paperspace to activate that viewport in modelspace using the new **MAXIMIZE VIEWPORT** command.



## 18 Use for the Seemingly Useless

2009-2014

*dave espinosa-aquilar*

Have you ever wished you could attach a unique attribute or searchable value to any object in AutoCAD? Not just a block? Did you know you can?

My guess is that most of us have never really put to use the “HYPERLINK” functionality in our daily AutoCAD life. You can use this functionality for other purposes than its intended use!

Select an object and using the PROPERTIES palette, enter a value for the HYPERLINK property. You can now use QUICK SELECT to search for objects with that value.



*This is also a great way to connect objects to unique primary key values in databases.*

## 19 How do you LOCK all Viewports?

2010-2014

Use the NEW LOCK icon on the AutoCAD status bar to easily LOCK or UNLOCK all viewports.



This icon only appears when a VIEWPORT has been selected.

## 20 SAVE and CLOSE Open Drawings Easily

2009-2014

Use the old EXPRESS TOOL, QQUIT to SAVE ALL open drawings and QUIT AutoCAD.

Use the old EXPRESS TOOL, CLOSEALL to CLOSE and SAVE ALL open drawings in AutoCAD.

## 21 Ribbon Magic

2009-2014

Donnie Gladfelter

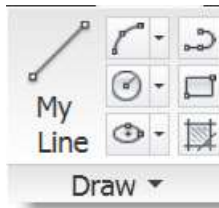
With all the new things you can do with the Ribbon, it is hard to pick just one; so let me show you some “secrets” that I have run across over the last year!

### Multi-line Text Labels

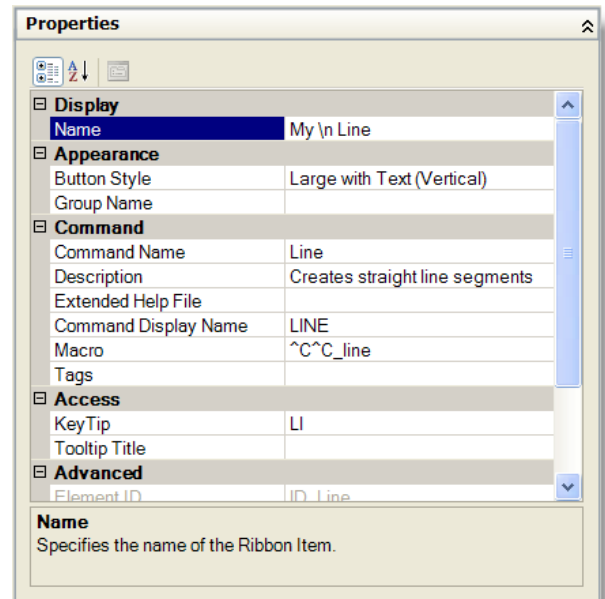
In this example, I will change the LINE tool label to MY LINE.

Modify the NAME of the tool to

MY \n LINE



Thanks to Donnie Gladfelter for this one.  
Visit his website [www.thecadgeek.com](http://www.thecadgeek.com)



## 22 How to Set the Table on a Palette

2010-2014

Have you ever tried to add a table to one of your palettes? Can't seem to get this to work? Try this quick shortcut.

While dragging the table on to the palette, just drag it using the <Right-Click> mouse button and then you can drop it onto the tool palette.



*This has been fixed in AutoCAD 2014. You can drag tables on to a palette just like any other object type!*

## 23 Attribute Edit – the EASY Way!

2010-2014

Use the <CTRL> key to edit attributes without a dialog.

#	MM/DD/YY	CDS ID	MULTI-LINE DESCRIPTION
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## 24 Tame Your MULTI-LINE Attributes

2010-2014

Use the MTEXT EDITOR paragraph WIDTH bar to control how wide the paragraph is inside your multi-line attributes.

#	MM/DD/YY	XXX	<div> <div></div> <div>MULTI-LINE DESCRIPTION</div> </div>
#	MM/DD/YY	XXX	<div> <div></div> <div>MULTI-LINE DESCRIPTION</div> </div>

## 25 Know Your Coordinates

2009-2014

Have you ever wanted to input ABSOLUTE coordinates when using the new dynamic input feature?

First, learn the basics of AutoCAD coordinate input below.

**Relative Coordinates:** 2,20 is relative to previous coordinate location

**Absolute Coordinates:** #2,20 is an absolute coordinate location in the current UCS

**World Coordinates:** \*2,20 is a world coordinate location

Then you can accomplish this two different ways.

First, use the override setting when inputting the coordinate values by typing in a “#” character before the coordinates.

For example, you could key in #0,0.

Second, you can change this method to your preferred default by using the dynamic input setting shown below.



## 26 A Better PLAN

2009-2014

Do you use the old PLAN command to re-orient your view back to “home” and to “square up” your drawing view? If so, try this one out to better improve your workflow.

Use the EXPRESS TOOL → EXPLAN in place of the PLAN command. This command will not perform the dreaded ZOOM EXTENTS and will result in a more useable “home” view.



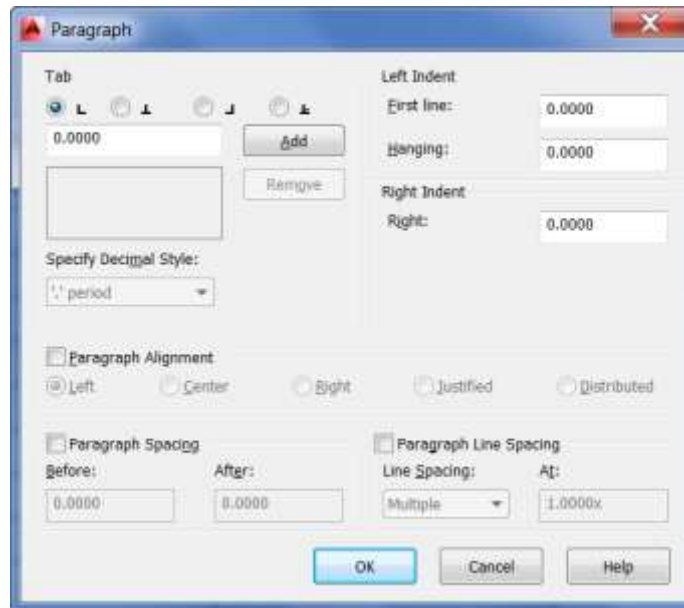
## 27 Control Your TEXT

2012-2014

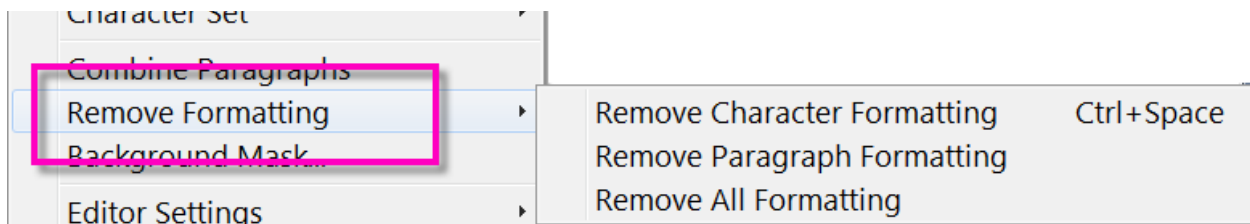
Do you want more control over the appearance of your text objects? Have you used all the settings that are available?

Use the TEXT EDITOR contextual ribbon to modify some of the following “easily overlooked” settings.

### Paragraph style:



### Remove ALL Formatting:



## 28 STARTUP Quicker?

2013-2014

### Eliminate the SPLASH SCREEN

Who wants to see that AutoCAD splash screen for the one-millionth time? After a few views, it gets really old right? Use the following switch on your startup icon to eliminate the splash screen and minimize your startup time.

**/nologo**

Target type: Application

Target location: AutoCAD 2014

Target: `acad.exe" /product ACAD /language "en-US" /nologo`

### Disable the BLANK FILE on Startup

Who doesn't want to eliminate that DRAWING1.DWG from being created everytime you startup AutoCAD? You can change this by modifying the system variable STARTUP and avoid closing that file every day. Now you can just select the file you want to open!

### STARTUP

Controls what displays when the application is started, or when a new drawing is opened..

0 (default)	Displays the Select Template dialog box, or uses a default drawing template file set in the Options dialog box, on the Files tab.
1	Starts without opening a drawing template file, and displays the Startup or the Create New Drawing dialog box.
2	Starts without opening a drawing template file, or if available in the application, a custom dialog box is displayed.

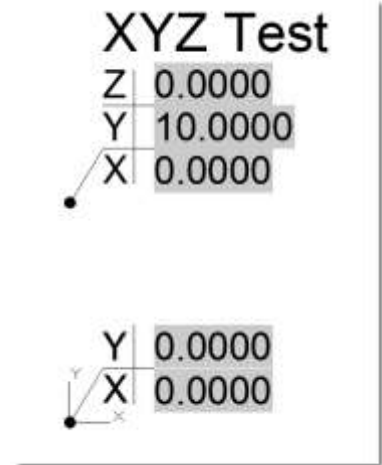
## 29 Automatic Coordinate Labels

2009-2014

Many users ask me how to label a drawing coordinate automatically in AutoCAD. Have you figured it out yet?

You can use an ordinate dimension but there is a better way if you make a “smarter” dynamic block to label points in your drawing.

Use a simple dynamic block using FIELDS that display the INSERTION POINT of the block.



## 30 +Layer?

2009-2014

What is this command you ask? If you use layer filters you will want to know about this little “undocumented” command. Use this command to easily switch layer filters from the command line, tool palette, menu, macro, etc. This command allows you to switch to any one of the following layer filter types:

- Properties Filter
- Group Filter
- Unreconciled Layers
- Viewport Overrides
- All Layers

# 31 Had Enough Layers Reconciled?

2009-2014

Many users complain about the notification of new layers that have been added to active or reference files.

Change the following settings if you want to stop this notification!

## LAYEREVAL

The setting is stored in an integer using one of the following values:

0 (default)	Off
1	Detects when new xref layers have been added in the drawing
2	Detects when new layers have been added in the drawing and xrefs

## LAYEREVALCTL

This system variable also affects whether the new layer notification is displayed or not.

0	Disables the evaluation and notification of new layers
1 (default)	Enables the evaluation of new layers on the LAYEREVAL settings.

## 32 Text Mask On-the-Fly

2009-2014

Do you still use a wipeout to create the effect of a “text mask”? First, you should define a text style that will automatically incorporate a “text mask” effect when using that style. However, sometimes you just need a single piece of text to mask the graphics behind it and creating a text style for one piece of text seems like overkill right? Try this out!

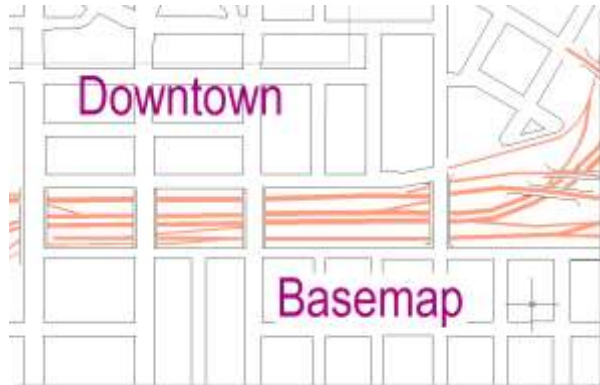
There is a new command TEXTMASK that eliminates the need to draw a box around the text to create a wipeout effect. This is a much more efficient way to create a single wipeout for a text object.

Use the TEXTUNMASK command to remove a TEXTMASK from a single object.

The wipeout is created as a group of elements containing the wipeout object and all selected text objects. So if the text is moved the wipeout will automatically move with it. You can separate them using the **<CTRL+SHIFT+A>** shortcut key to toggle OFF group recognition. Use **<CTRL+SHIFT+A>** again to toggle ON group recognition.



**NOTE:** Use the TFRAME command to toggle the display of wipeout boundaries.



## 33 Lost Toolbars

2002-2014

Use the following key in to find lost toolbars in your interface.

### -TOOLBAR

The TOOLBAR command will allow you to “float” the missing toolbar in the middle of your screen; effectively moving it to a visible location.

- STEP 1:** Key in the command **-TOOLBAR** to run the command without dialogs.
- STEP 2:** Enter the toolbar name; in this case the **DRAW** toolbar.
- STEP 3:** Key in **F** to float the toolbar anywhere on your screen.
- STEP 4:** Key in a new XY pixel position on your screen. **0,0** will float the toolbar in the upper left corner of your screen.

## 34 Hidden Layer Tools

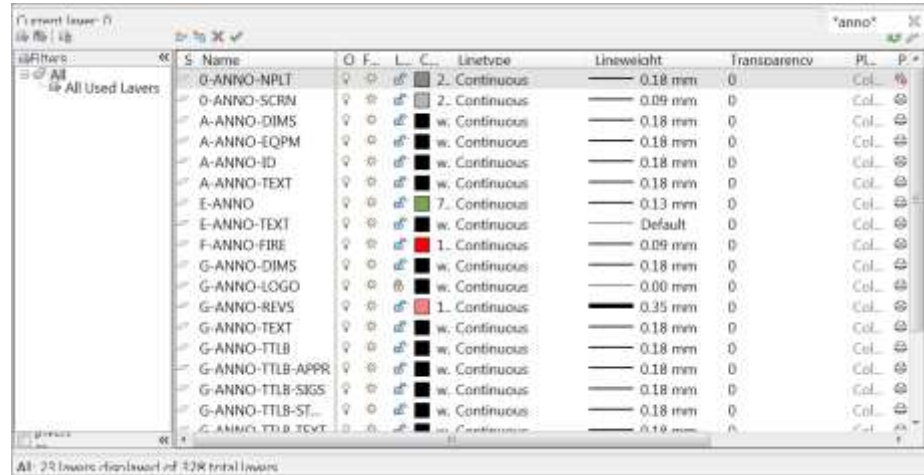
2009-2014

### Search Layers

How can you search your layer list for a particular description or layer name? Use the SEARCH field in the new Layer Properties Manager.

For example, you want to search all annotation layers. Use the SEARCH field with the following key-in to create a temporary layer filter.

\*ANNO\*



## 35 NUDGE Objects

2013-2014

This new command allows you to move objects very small amounts without using the MOVE command. To access the NUDGE command, first, select the objects and use the <CTRL+ARROW keys> to move the object in any of the four arrow directions. This movement is orthogonal only.



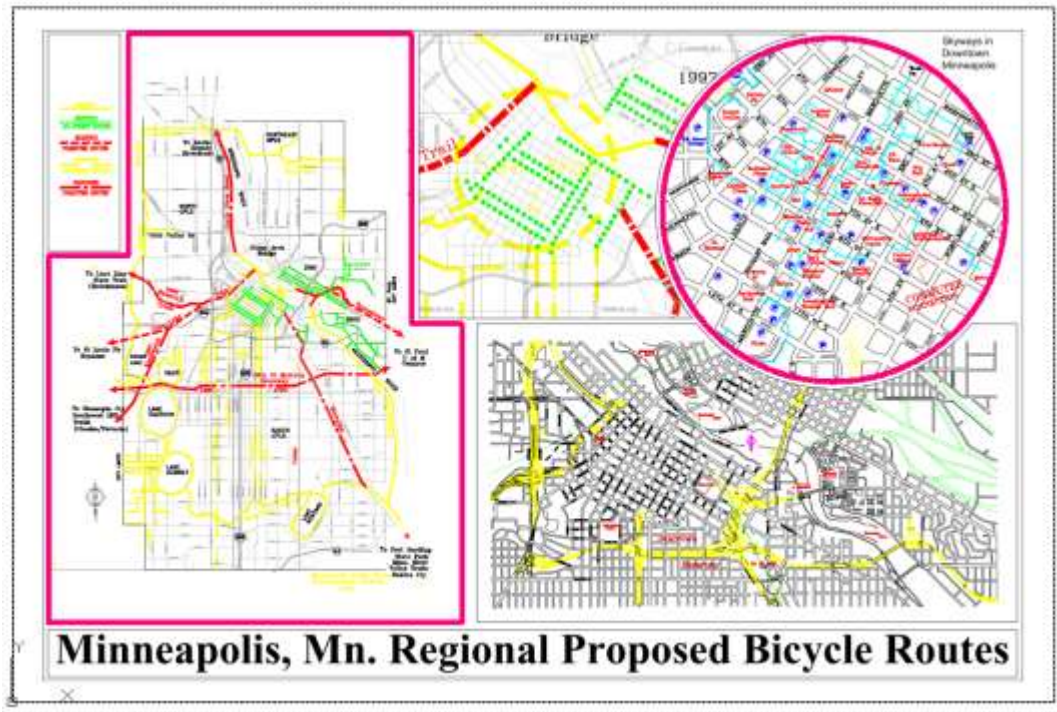
*Use the SNAP distance setting to control the distance an object moves during the NUDGE command.*



## 36 More PDF...

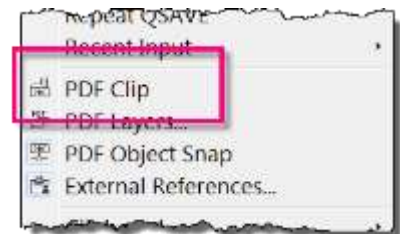
2009-2014

Everyone knows by now that you can attach a PDF as an underlay in AutoCAD right? But did you know that you can also CLIP and SNAP to it?



### Clip PDF

Select the attached PDF file and <Right-Click> to access the PDF CLIP command.



*If you need a “circular” or “curved” clip use a multi-sided polygon shape. Circles, arcs and curved polylines are not allowed.*



## Snap to PDF

You can also snap to objects in the PDF using the following system variable.

### PDFOSNAP

Determines whether object snapping is active for geometry in PDF underlays that are attached to the drawing.

0	Disable object snap for geometry in all PDF underlay attachments in the drawing.
1 (default)	Enable object snap for geometry in all PDF underlay attachments in the drawing.

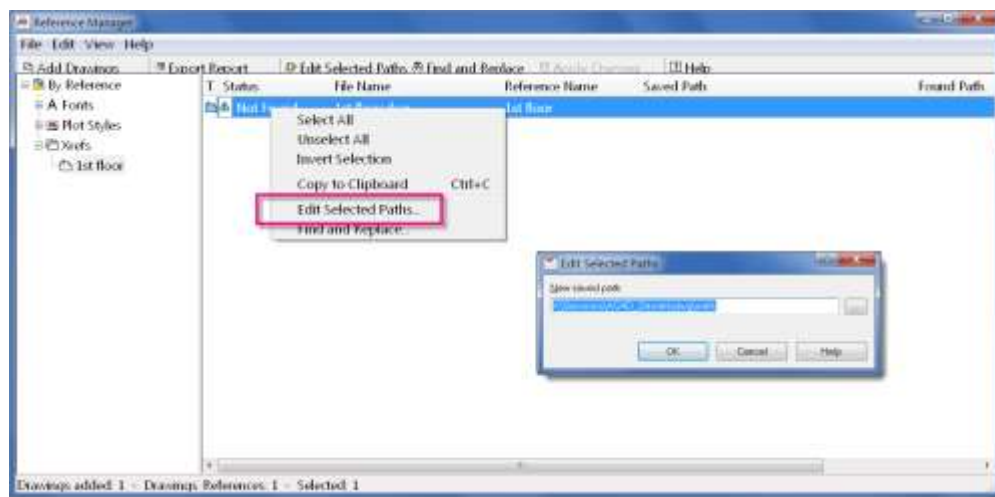


*NOTE: The UOSNAP system variable overrides the PDFOSNAP setting.*

### UOSNAP

Determines whether object snaps are available for geometry in DWF, DWFX, PDF, and DGN underlays.

0	Object snaps are disabled for geometry in all underlays in the drawing.
1 (default)	Object snaps are enabled for geometry in all underlays in the drawing.
2	The individual setting varies for all underlays in the drawing: DWF, DWFX, and DGN.



# Just for FUN!

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## Wheel Mouse Exercises

Try this one out on your co-workers! Set their ZOOMFACTOR to the value of 3. Then just sit back and “listen” to their exercise session!

## SNAP to the WORLD

Set the system variable SNAP to some ridiculous number like 10000. Then just sit back and watch the cursor JUMP!

## Do you Have Enough TOOLBARS Now?

Display EVERY toolbar known to AutoCAD and just walk away. This is harmless if they have workspace defined (and they should!).

## GROUP the World

GROUP the entire drawing and walk away. Most users do not know about the GROUP command so it really stumps them!

When they call you to figure out what is going on, use the CTRL+H key when they aren't looking and show them that there isn't a problem for you? Then before you leave; issue the CTRL+H key again!

## Fun Text Messaging

[Todd Shackelford](#)

I got this tip while browsing Todd's blog and thought it was so amusing that I would include it in this session.

If you are a CAD Manager and you help users at their computer, then you can appreciate this idea from Todd. After helping out a user with a problem, and they leave their computer for a few minutes; try this alert message out!

(alert “Your CAD Skills are inferior to mine \nPlease attend AU to improve immediately!”)

Thanks Todd, for reminding us how “fun” AutoCAD can be!

