THE SKILLS

AutoCAD

FOR SUCCESS

Getting to Know AutoCAD

▶ **Opening a new drawing**

▶ **Getting familiar with the AutoCAD and AutoCAD LT Graphics windows**

▶ **Modifying the display**

▶ **Displaying and arranging toolbars**

Y our introduction to AutoCAD and AutoCAD LT begins with a tour of the features of the screens used by the two programs. In this chapter, you'll also learn how to use some tools that help you control the screen's appearance and how to find and start commands. For the material covered in this chapter, the two applications are almost identical in appearance. Therefore, as we tour AutoCAD, I'll point out any differences between AutoCAD and AutoCAD LT. In general, LT is a 2D program, so it doesn't have most of the 3D features that come with AutoCAD, such as solids modeling and rendering. The other differences are minor. As mentioned in this book's introduction, when I say *Auto-CAD*, I mean both AutoCAD and AutoCAD LT. I'll also refer to AutoCAD LT as *LT* throughout this chapter and the rest of the book. Starting up AutoCAD is the first task at hand.

Starting Up AutoCAD

If you installed AutoCAD or LT using the default settings for the location of the program files, start AutoCAD by choosing Start ➢ All Programs ➢ Autodesk ➢ AutoCAD 2007 ➢ AutoCAD 2007. For LT, choose Start ➢ All Programs ➢ Autodesk ➢ AutoCAD LT 2007 ➢ AutoCAD LT 2007. If you customized your installation, find and click the AutoCAD 2007 or the AutoCAD LT 2007 icon to start the program.
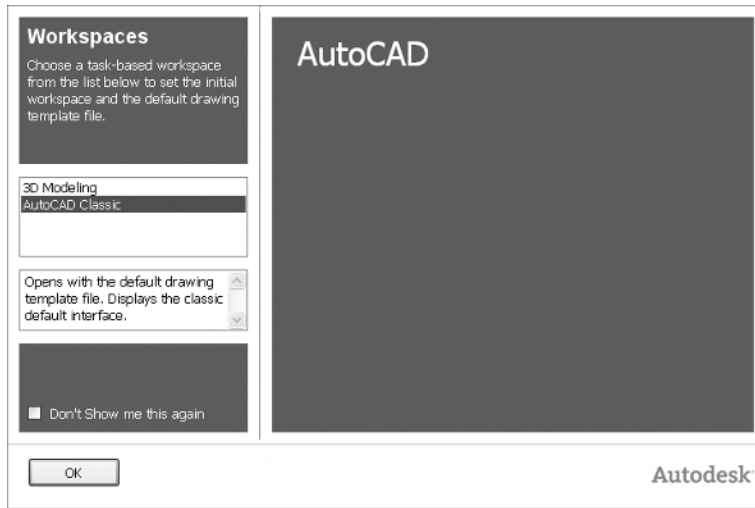
As AutoCAD comes up, you may see a welcoming screen that offers two default *workspaces* to choose from: 3D Modeling and AutoCAD Classic (see Figure 1.1a). If you see this screen, select AutoCAD Classic and click OK. The program may then display the Startup Dialog box. LT may display a similar welcoming screen that offers only one workspace—AutoCAD LT. Click OK to continue.

The Startup Dialog Box

Dialog boxes with various combinations of buttons and text boxes are used extensively in AutoCAD and LT. You'll learn their many functions as you progress through the book.
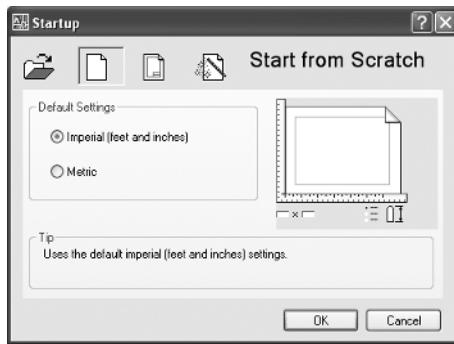
If AutoCAD or LT opens with the Startup dialog box sitting in front of the Auto-CAD Graphics window, your screen will be similar to Figure 1.1b. If you don't see the Startup dialog box, read on a little—you'll see how to display it and then how to suppress it.

The Startup dialog box has four buttons in the upper-left corner. The first two buttons let you set up a new drawing and choose an existing drawing to revise or update. The second two buttons use templates and wizards to initiate advanced setup routines. The contents of the middle portion of the dialog box depend on which of the four buttons you choose. By beginning a new drawing, you can get past this dialog box to the AutoCAD Graphics window:

a

b

F I G U R E   1 . 1 :   The Workspaces welcoming screen (a), and the Startup dialog box (b)

1. Click the Start From Scratch button, the second button from the left.

2. In the Default Settings section, click the Imperial (Feet And Inches) radio button.

3. Click OK to close the Startup dialog box. Your monitor displays the AutoCAD or LT Graphics window, sometimes called the Graphical User Interface, or GUI (see Figures 1.2a and b). In LT, your screen looks similar to Figure 1.2a. For AutoCAD, your monitor displays either of two *workspaces*: the AutoCAD Classic workspace (see Figure 1.2a) or the 3D Modeling workspace (see Figure 1.2b). You'll be using a variation of the AutoCAD Classic workspace for all 14 chapters in this book. In the appendix, you'll switch to the 3D Modeling workspace, but for now, you need to get your AutoCAD GUI to look like Figure 1.2a.

◄

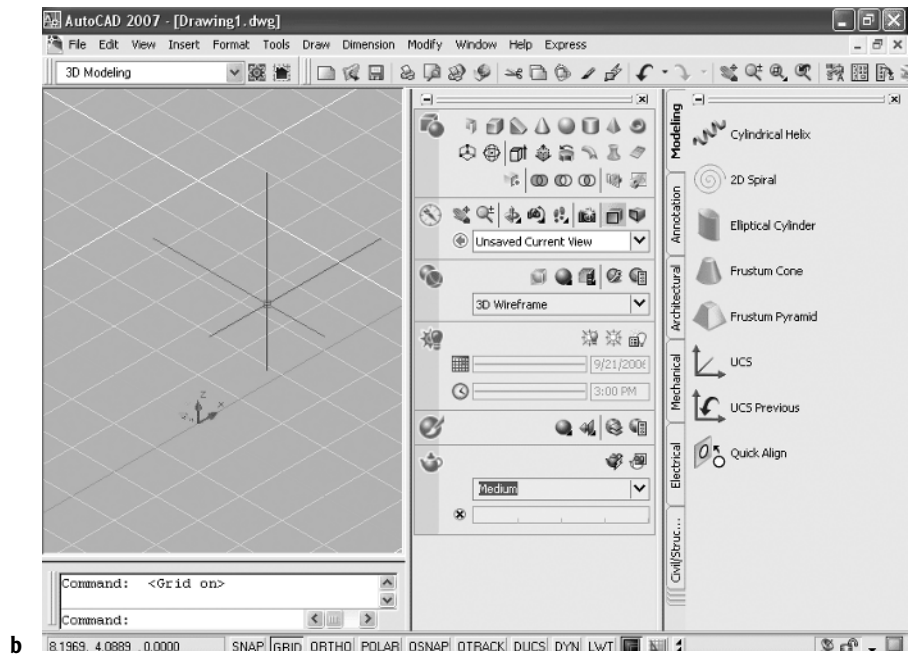**Radio buttons are round and come in a list or a group. You can activate only one radio button at a time.**
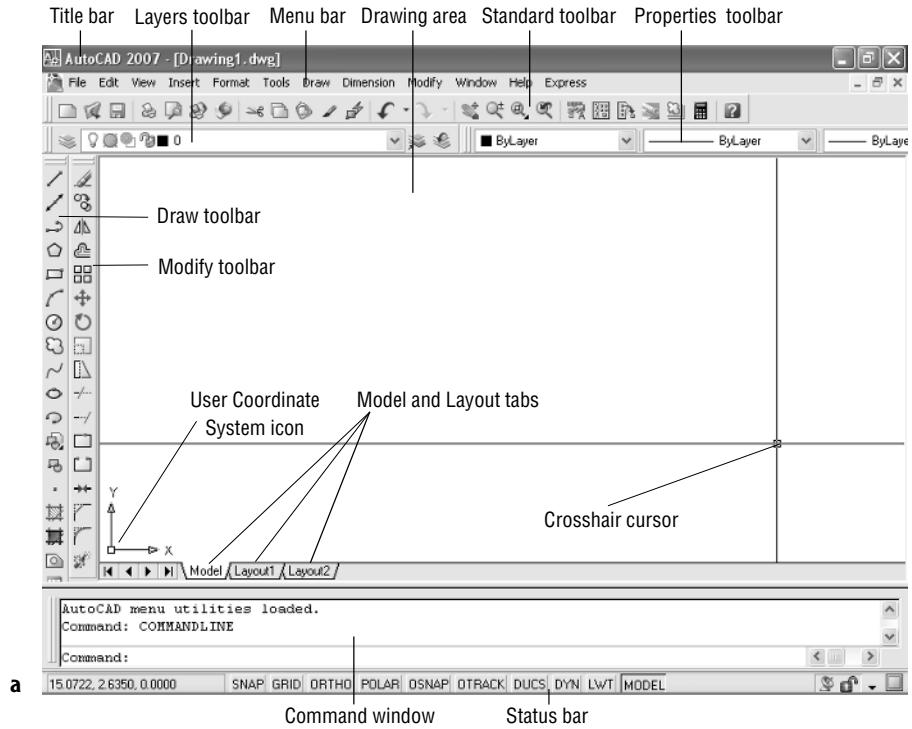
Title bar Layers toolbar Menu bar Drawing area Standard toolbar Properties toolbar

Draw toolbar

Modify toolbar

User Coordinate
System icon

Model and Layout tabs

Crosshair cursor

a

Command window Status bar

b

F I G U R E   1 . 2 : The AutoCAD Graphics window using two workspaces: AutoCAD Classic (a), and 3D Modeling (b)

N O T E If the New Features Workshop window appears when you start up AutoCAD, click the second or third radio button in the window, and then click OK to remove it. You can always access the Workshop on the Help menu.

If your screen already looks similar to Figure 1.2a, go on to the sidebar "Controlling the Way AutoCAD Starts Up." The toolbars on your screen may not be in exactly the same places as they are shown here. Later in this chapter, you'll see how to move the toolbars, display new ones and place them, and suppress them. If your screen looks like Figure 1.2b or isn't at all like Figure 1.2a, you need to make a few changes:

1. Click Tools ➢ Workspaces ➢ AutoCAD Classic. (If AutoCAD Classic already has a check in the box next to it, or if you are using LT, this step is unnecessary.)

2. By default, the AutoCAD Classic workspace displays two *palettes* on the screen. If the palettes are displayed, you need to turn them off for now. Click Tools ➢ Palettes ➢ Tool Palettes to turn off the one on the right, and then click Tools ➢ Palettes ➢ Sheet Set Manager to turn off the one on the left. Your workspace may have different toolbars and palettes displayed than those shown here. If other palettes are still visible, click the X in the upper-right or -left corner of each palette to close it.

3. The large area in the middle of the screen is called the *drawing area*. It may need adjusting. Click View ➢ Visual Styles ➢ 2D Wireframe.

4. Click View ➢ 3D Views ➢ Plan View ➢ World UCS. If dots appear in the drawing area, the grid is on.

5. Move the cursor to the status bar at the bottom of the screen, and click the Grid readout button so it's in the off (unpushed) mode. Be sure all the other readout buttons except Model are in their off position.

◄

LT Users can skip Steps 3 and move on to Step 4.

Your screen should look close enough to Figure 1.2a to continue. You'll arrange the toolbars to the way you need them a little later.

CONTROLLING THE WAY AUTOCAD STARTS UP

You can set AutoCAD and LT to display or hide the Startup dialog box when you start AutoCAD:

1. From the menu bar, choose Tools ➢ Options to open the Options dialog box.

2. Click the System tab to bring it forward.

3. In the General Options section, open the Startup drop-down list:

    ▶ If you want AutoCAD to display the Startup dialog box, click Show Startup Dialog Box.

    ▶ If you want AutoCAD to start up with a blank drawing, click Do Not Show A Startup Dialog.

4. Click Apply, and then click OK.

The next time you start up AutoCAD, your preference will be used.

Introduction to the AutoCAD Graphics Window

At the top of the Graphics window sit the title bar, the menu bar, and three toolbars. You may have more or less than three toolbars; if so, you'll change that soon.

Title bar   Menu bar   Standard toolbar

Layers toolbar   Properties toolbar
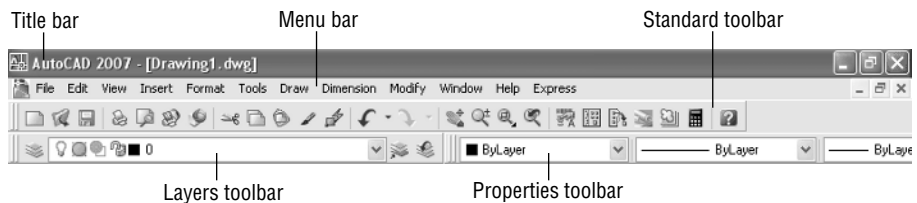
The title bar and menu bar at the top of the LT screen are identical to those in AutoCAD except that *AutoCAD LT* appears in the title bar rather than *AutoCAD*.

The title bar is analogous to the title bar in any Windows program. It contains the program name (AutoCAD or AutoCAD LT) and the title of the current drawing with its *path*. Below the title bar is the menu bar, where you'll see the drop-down menus. Among the drop-down menus, File, Edit, Window, and Help are Windows menus (meaning that they appear on most Windows applications). These Windows menus also contain a few commands specific to AutoCAD. The rest of the menus are AutoCAD menus.

Below these menus is the *Standard toolbar*, which contains 25 command buttons (LT has only 23). Several of these buttons will be familiar to Windows users;

the rest are AutoCAD commands. Just below the Standard toolbar are the *Layers toolbar* and the *Properties toolbar*, which together contain three command buttons and five drop-down lists. If you selected the AutoCAD Classic workspace, you'll have a Workspaces toolbar to the left of the Layers toolbar.

The blank middle section of the screen is called the *drawing area*. Notice the movable *crosshair cursor*. The crosshairs on your cursor may not extend completely across the screen. I recommend that you set them to look like they do in the figures in this book, and I will show you how to do this when we make a few changes later in this chapter. Your screen may or may not display the coordinate tool tips next to the intersection of the crosshairs.

Notice the little box at the intersection of the two crosshair lines. This is one of several forms of the AutoCAD and LT cursor. When you move the cursor off the drawing area, it changes to the standard Windows pointing arrow. As you begin using commands, it will take on other forms, depending on which step of a command you're in.

The icon with a double arrow in the lower-left corner of the drawing area is the *User Coordinate System icon*. It indicates the positive direction for the X and Y coordinates. You won't need it for most of the chapters in this book, so you'll learn how to make it invisible in Chapter 3.
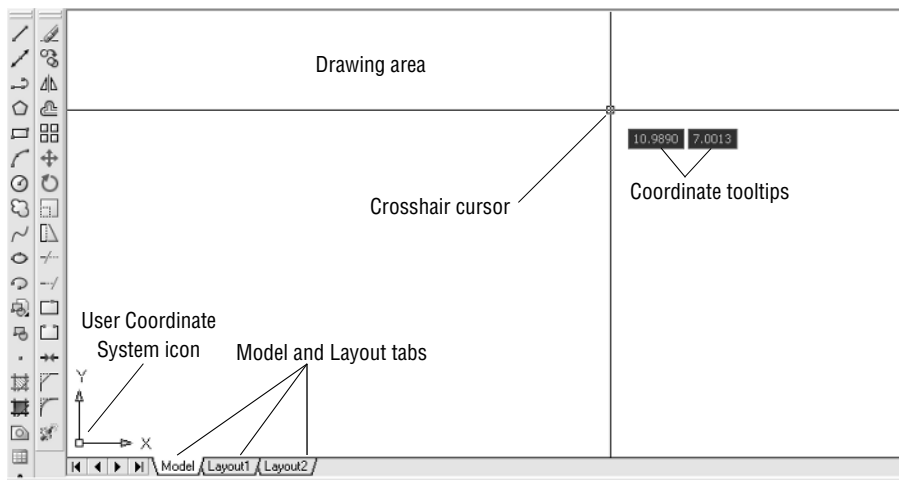
At the bottom of the drawing area are three tabs: a Model tab and two Layout tabs. You use these tabs to switch between viewing modes. (I'll discuss viewing modes in Chapter 13.) Our example shows no toolbars floating in the drawing area, but two toolbars are docked at the left of the drawing area. Your screen may or may not have the toolbars, or they may be in a different position. If the toolbars are within the drawing area, they will have a colored title bar. For specifics, see the section "The Toolbars" later in this chapter.

Below the drawing area is the *Command window*.

```
Regenerating model.
AutoCAD menu utilities loaded.
Command:
```

The Command window is where you tell the program what to do and where the program tells you what's going on. It's an important area, and you'll need to learn how it works in detail. Three lines of text should be visible. If your screen displays fewer than three lines, you'll need to make another line or two visible. You'll learn how to do this later in this chapter in the section "The Command Window."

Below the Command window is the *status bar*.

```
15.0722, 2.6350, 0.0000     SNAP GRID ORTHO POLAR OSNAP OTRACK DUCS DYN LWT MODEL          🛰 🔓 ▾ ▢
```

On the left end of the status bar, you'll see a coordinate readout window. In the middle are 10 readout buttons (LT has only 9) that indicate various drawing modes. It's important to learn about the coordinate system and most of these drawing aids (Snap, Grid, Ortho, and Osnap) early as you learn to draw in Auto-CAD or LT. They will help you create neat and accurate drawings. Polar and Otrack are advanced drawing tools and will be introduced in Chapter 5. Ducs stands for Dynamic User Coordinate System; it's used in 3D drawings. Dyn is an OFF/ON toggle that activates or suppresses the dynamic display of information next to the crosshair cursor when it's in the drawing area. For now, keep it in the OFF (unpushed) mode. Lwt (which stands for Lineweight) will be discussed in Chapter 14 in the section on plotting. The Model button is an advanced aid that will be covered in Chapter 13. At the far right of the status bar are small icons that indicate the presence of various features for a drawing session. The Satellite Dish button activates AutoCAD's Communication Center and is discussed in a bonus chapter available on Sybex's website (www.sybex.com). The Padlock icon controls which types of toolbars and windows are locked in their current positions on the screen. Leave it in the unlocked mode for now.

This has been a quick introduction to the various parts of the Graphics window. I didn't mention a couple of items that may be visible on your screen. You may have scroll bars below and to the right of the drawing area, and you may have a menu on the right side of the drawing area. Both features can be useful, but they can also be a hindrance and take up precious space in the drawing area. They won't be of any use while working your way through this book, so I suggest that you remove them for now.

To temporarily remove these features, follow these steps:

1. Choose Tools ➢ Options to open the Options dialog box (shown in Figure 1.3). It has 10 tabs (LT has only 8) across the top that act like tabs on file folders.
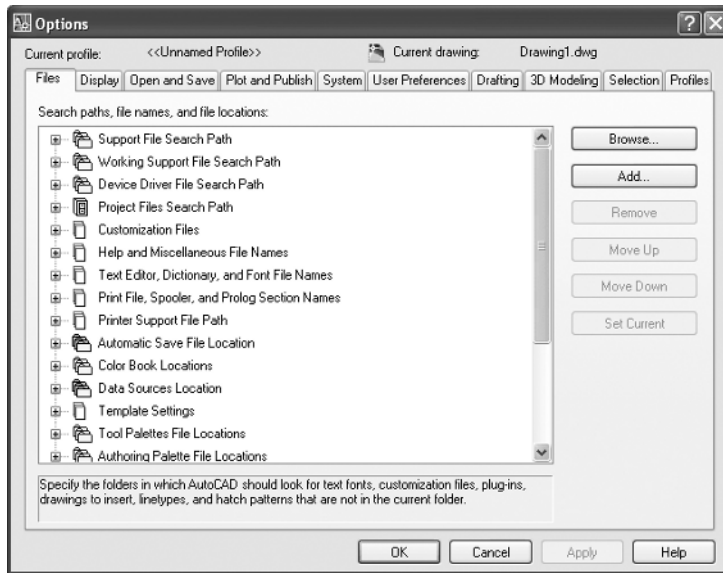
FIGURE 1.3: The Options dialog box

2. Click the Display tab, which is shown in Figure 1.4. Focus on the rectangular area titled Window Elements. If scroll bars are visible on the lower and right edges of the drawing area, the Display Scroll Bars In Drawing Window check box will be checked.
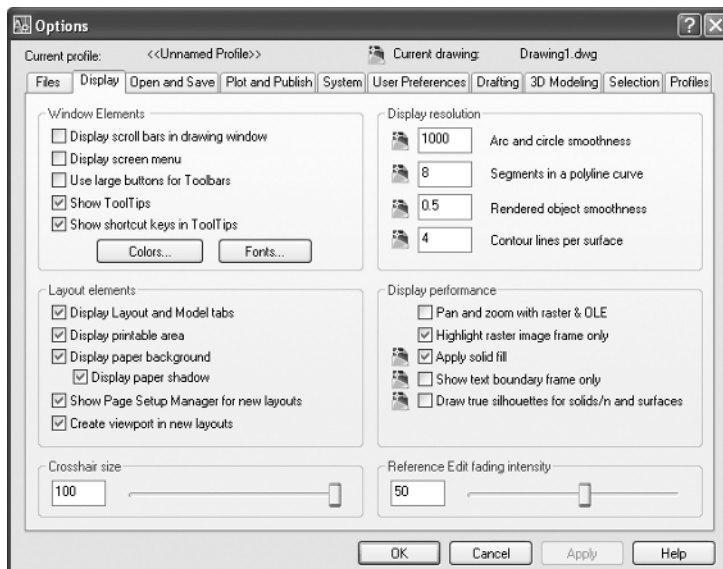

FIGURE 1.4: The Options dialog box open at the Display tab

3. Click the check box to turn off the scroll bars. Also be sure the check box for Display Screen Menu is unchecked. Don't click the OK button yet.

Another display setting that you may want to change at this point controls the color of the cursor and the drawing area background. The illustrations in this book show a white background and black crosshair cursor, but you may prefer to reverse the colors. To do so, follow these steps:

1. In the Window Elements area of the Display tab, click the Colors button to open the Drawing Window Colors dialog box (see Figure 1.5). In the upper left corner of the dialog box, in the Context list box, 2D Model Space should be visible. If it's not, select it.
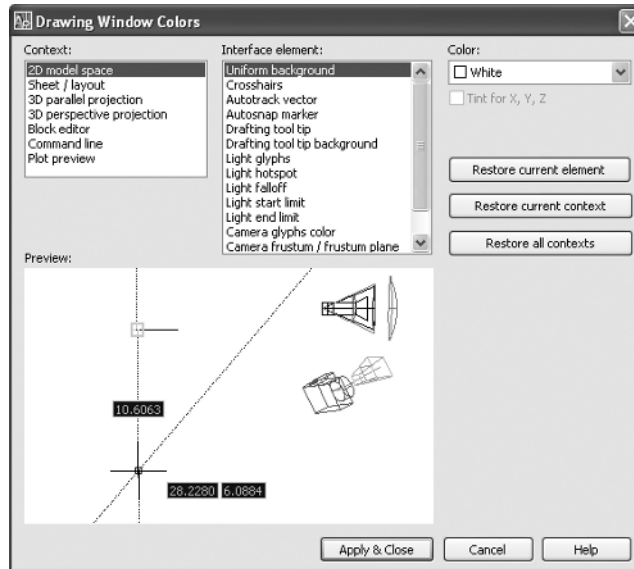

FIGURE 1.5: The Drawing Window Colors dialog box

2. Move to the Color drop-down list, which is in the upper-right corner. If your drawing area background is currently white, a square followed by the word *White* is displayed. Open the Color drop-down list, and select Black (or the background color you want). The drawing area will now be that color, and the cursor color will change to white, as shown in the Model Tab Preview window below.

3. Click the Apply & Close button to close the Color Options dialog box.

4. Don't close the Options dialog box yet.

5. If you want the lines of your crosshair cursor to extend completely across the screen, go to the lower-left corner of the Display tab (lower-right for LT) and move the slider to change the Crosshair Size setting to 100.

**6.** Click OK to close the Options dialog box.

Your screen and crosshair cursor take on their newly assigned colors, and the crosshair lines extend across the drawing area.

T I P   If you choose a color other than black as the drawing area background color, the color of the crosshair cursor remains the same as it was (black). To change the crosshair color, in the Drawing Window Colors dialog box, go to the Interface Element list box, and select Crosshairs. Then, select a color from the Color drop-down list.

The Command Window

Just below the drawing area is the Command window. This window is separate from the drawing area and behaves like a Windows window—that is, you can drag it to a different place on the screen and resize it, although I don't recommend that you do this at first. If you currently have fewer than three lines of text in the window, you'll need to increase the window's vertical size. To do so, move the cursor to the horizontal boundary between the drawing area and the Command window until it changes to an up-and-down arrow broken by two parallel horizontal lines.
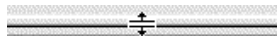
Hold down the left mouse button, drag the cursor up by approximately the amount that one or two lines of text would take up, and then release the mouse. You should see more lines of text, but you may have to try this a couple of times to display exactly three lines. The top two lines of text will be separated by a line from the bottom line of text. When you close the program, the new settings will be saved; the next time you start up AutoCAD, the Command window will display three lines of text.

The Command window is where you give information to AutoCAD and where AutoCAD prompts you for the next step in executing a command. It's a good practice to get into the habit of keeping an eye on the Command window as you work on your drawing. Most errors occur when you aren't looking at it frequently. If the Dyn button on the status bar is activated, some of the information in the Command window is displayed in the drawing area next to the cursor. We'll look at this feature when we start drawing.

Before you begin to draw, take a close look at the menus, toolbars, and keyboard controls.

> **N O T E**   In many cases, you can start AutoCAD commands in a number of ways: from drop-down menus, from the toolbars, from the keyboard, and from menus that appear when you right-click the mouse. When you get used to drawing with AutoCAD, you'll learn some shortcuts that start commands quickly, and you'll find the way that is most comfortable for you.

Drop-Down Menus

The menu bar, just below the title bar (see Figure 1.2 earlier in this chapter), consists of 11 (12 if you have the Express tools installed) words and an icon. Click any of these to display a drop-down menu. The icon on the left end and the File and Edit menus are included with all Windows-compatible applications, although they are somewhat customized to work with AutoCAD. The menu associated with the icon contains commands to control the appearance and position of the drawing area.

Commands in the File menu are for opening and saving new and existing drawing files, printing, linking on the Internet, exporting files to another application, choosing basic utility options, and exiting the application. The Edit menu contains the Undo and Redo commands, the Cut and Paste tools, and options for creating links between AutoCAD files and other files. The Help menu works like all Windows Help menus and contains a couple of AutoCAD-specific entries as well, including some online resources and a context-sensitive help feature called the Info Palette.

The other eight or nine menus contain the most-often-used AutoCAD commands. You'll find that if you master the logic of how the commands are organized by menu, you can quickly find the command you want. Here is a short description of each of the other AutoCAD drop-down menus:

View   Contains tools for controlling the display of your drawing file.

Insert   Contains commands for placing drawings and images or parts of them inside other drawings.

Format   Contains commands for setting up the general parameters for a new drawing.

Tools   Contains special tools for use while you're working on the current drawing, such as those for finding the length of a line or for running a special macro.

Draw Contains commands for creating new objects (such as lines or circles) on the screen.

**Dimension** Contains commands for dimensioning a drawing.

Modify Contains commands for changing existing objects in the drawing.

Window Contains commands for displaying currently open windows and lists currently open drawing files.

Express An optional menu containing a library of productivity tools that cover a wide range of AutoCAD functions. It may or may not be installed on your computer.

The Toolbars

Look at the toolbars on your screen. You'll have two to five toolbars in one or two rows at the top, and a couple more on the right and/or left sides of the drawing area. Just below the drop-down menus is the most extensive of the toolbars—the Standard toolbar.
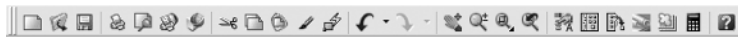
The icons on the AutoCAD toolbars don't appear as buttons until you point to them. There are 25 icons on the Standard toolbar, and they are arranged into seven logical groups. The icons on the left half of the Standard toolbar are mostly for commands used in all Windows-compatible applications, so you may be familiar with them. The icons on the right half of the Standard toolbar are AutoCAD commands that you use during your regular drawing activities for a variety of tasks. You use these commands to take care of a number of tasks, including the following:

◄

LT has only 23 Standard toolbar buttons. It's missing the Sheet Set Manager and Block Editor buttons because LT doesn't have these features.

> ► Changing the view of the drawing on the screen

> ► Changing the properties of an object, such as color or linetype

> ► Borrowing parts of an unopened drawing to use in your current drawing

> ► Displaying a set of palettes that contain objects you can use in your drawing

Toolbar Flyouts

Notice that one icon on the Standard toolbar has a little triangular arrow in the lower-right corner. This arrow indicates that clicking this icon displays more than one command. Follow these steps to see how this special icon works:

1. Move the cursor up to the Standard toolbar, and point to the icon that has a magnifying glass with a rectangle in it.

2. Rest the arrow on the button for a moment without clicking. A small window opens just below it, displaying the command the button represents. In this case, the window should say "Zoom Window." This is a tool tip—all buttons have them. Notice the small arrow in the lower-right corner of the icon. This is the multiple-command arrow mentioned earlier.

3. Place the arrow cursor on the button, and hold down the left mouse button. A column of nine buttons drops down vertically below the original button. The top button in the column is a duplicate of the button you clicked. This column of buttons is called a *toolbar flyout*. In this example, you're working with the Zoom toolbar flyout.

4. While still holding down the mouse button, drag the arrow down over each button until you get to the one that has a magnifying glass with a piece of white paper on it. Hold the arrow there until you see the tool tip. It should say "Zoom All." Now release the mouse button. The flyout disappears, and AutoCAD executes the Zoom All command. Look in the Command window at the bottom of the screen.

At the end of the top line of text is _all. This tells you that you have used the All option of the Zoom command. This flyout is called the *Zoom flyout* because it contains tools for changing views of the drawing, or "zooming around in the drawing."

5. Look at the Standard toolbar where the Zoom Window button was previously. Notice that it's been replaced by the Zoom All button.
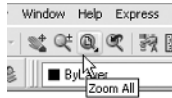
T I P   On a toolbar flyout, the button you select replaces the button that was on the toolbar. This arrangement is handy if you're going to be using the same command several times, because the button for the command is readily available and you don't have to open the flyout to select it again. The order of the flyout buttons remains the same, so when you open the Zoom flyout again, the Zoom Window button will be at the top of the list. You'll need to become familiar with any flyout buttons you use, because the last one used becomes the representative button on the home toolbar.

The behavior of the Zoom flyout on the Standard toolbar is the same as the behavior of flyouts in general.

N O T E   Whenever you start up AutoCAD or LT for a new drawing session, the toolbars are reset and contain the original flyout buttons.

The toolbar flyouts are regular toolbars that have been attached to another toolbar. There are 35 toolbars in all, and only 2 are flyouts—the Zoom flyout I just discussed, and the Insert flyout on the Draw toolbar. You can display the Zoom and Insert flyouts as regular toolbars, independent of the Standard and Draw toolbars.

Displaying and Arranging Toolbars

In this section, I'll use the Zoom toolbar to show you some ways you can control and manipulate toolbars. Follow these steps:

1. Be sure the padlock icon in the lower-right corner of your screen is in unlocked mode. Then, right-click any toolbar button on the screen to open the Toolbars menu (see Figure 1.6).

◄

LT has 24 toolbars compared with AutoCAD's 35. The additional toolbars in AutoCAD are almost all for 3D and rendering tools.

FIGURE 1.6: The Toolbars menu

2. If you don't see Zoom near the bottom of the list you should have a down arrow there. Use it to scroll down, if necessary, and then click Zoom to display the Zoom toolbar in the form of a floating box in the drawing area.

   Notice that the Zoom toolbar now has a title bar. Toolbars that are positioned on the drawing area are called *floating* toolbars. They have title bars; and, by placing the cursor on the title bar and holding down the left mouse button, you can drag the toolbar around the screen. Try this with the Zoom toolbar.

3. Click and drag the Zoom toolbar to the right side of the screen. You'll notice that as you drag it, the toolbar stays put, and you're dragging a rectangle of the same size as the toolbar (see Figure 1.7). As you drag the rectangle to the right of the drawing area and begin to move it off the drawing area onto the right side of the screen, the rectangle becomes taller and thinner.
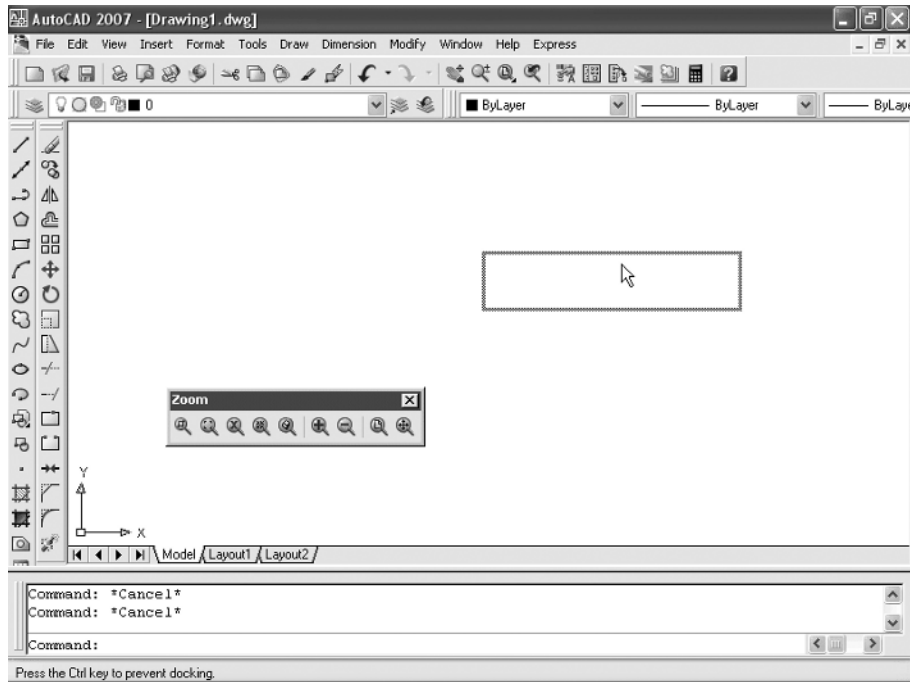
F I G U R E   1 . 7 :   Dragging the Zoom toolbar

4. Once the rectangle has changed shape, release the left mouse button. The rectangle changes to the Zoom toolbar, which is now positioned off the drawing area without its title bar.

This procedure is called *docking* a toolbar. Notice how the Standard and other toolbars at the top of the drawing area have no title bars—they are docked.

Continue with these steps:

1. Drag the Zoom toolbar back onto the drawing area, using the grab bars at the top of the toolbar. You can easily change the shape of any floating toolbar by dragging its edge. Let's change the shape of this toolbar.

2. Move the cursor to the far-right edge of the Zoom toolbar until the crosshair cursor changes to a two-way arrow.

   Hold down the left mouse button with the cursor on the right edge of the toolbar, and drag the arrow to the left until the rectangle changes shape. Release the mouse button.
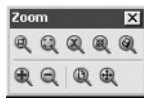
   You can reshape and reposition each floating toolbar to fit on the drawing area just as you like it. You won't need the Zoom toolbar just now, so you'll remove it.

3. Move the cursor up to the title bar and click the box with an X in it to close the Zoom toolbar.

Floating toolbars don't affect the size of the drawing area, but they cover your drawing. Each row or column of docked toolbars takes up space that would otherwise be drawing area. You have to decide how many docked and floating toolbars you need on the screen at a time. A good way to start is to leave the Standard, Layers, and Properties toolbars docked at the top of the screen and the Draw and Modify toolbars docked on the left side of the screen, as shown earlier in Figure 1.2.

If your toolbars are positioned as shown in Figure 1.8, continue with the next section. If these toolbars are in another location on the drawing area or not visible, try the steps you used in this section to dock them on the top and left side of the drawing area. If the toolbars aren't visible, right-click any visible toolbar button, and choose the toolbar you need. Then, drag the toolbar to the left side or top of the drawing area and dock it. Here are the positions I recommend for the five toolbars that you should dock on your screen:

▶ At the top, just under the menu bar, dock the Standard toolbar.

▶ Below that, on the left side, dock the Layers toolbar, and to the right of that, dock the Properties toolbar.

- ▶ On the left side, dock the Draw toolbar.

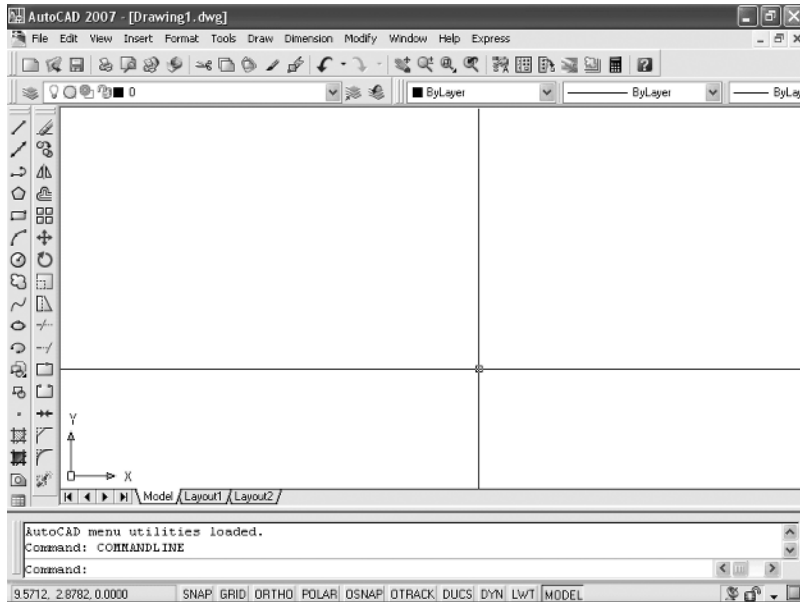- ▶ Next to the Draw toolbar, dock the Modify toolbar.

FIGURE 1.8: The GUI with five toolbars docked on the top and left sides of the drawing area

This arrangement of the toolbars will be convenient because you often use commands on these five toolbars. When you need other toolbars temporarily, you can use the Toolbars menu to display them in the drawing area and let them float. If you have any other toolbars docked on the screen, use their grab bars to drag them onto the screen. Then, click the Xs in their title bars to close them. Here is a partial list of toolbars that you may have on your screen that need to be turned off:

- ▶ Display Order toolbar

- ▶ Styles toolbar

- ▶ Workspaces toolbar

Custom Toolbars

You can customize each toolbar, and you can build your own custom toolbars with only the command buttons you use. You can even design your own buttons for commands that aren't already represented by buttons on the toolbars. These activities are for more advanced users, however, and aren't covered in this book.

To find out more about how to customize toolbars, see *Mastering AutoCAD 2007 and AutoCAD LT 2007* by George Omura (Wiley, 2006).

Workspaces

Now that you have your screen set up to look like Figure 1.8, you are ready to proceed through the book. I'll direct you to display additional toolbars as needed. For now, though, save this setup as a new workspace. It's a variation of the Auto-CAD Classic or AutoCAD LT workspace that comes with the program.

1. Click Tools ➢ Workspaces ➢ Save Workspace As. This brings up the Save Workspace dialog box (see Figure 1.9).

F I G U R E   1 . 9 :   The Save Workspace dialog box

2. Enter **2D Drawing** and click Save. The computer works for a while, and then returns you to your workspace. The new 2D Workspace setup will remain as it now is until you change it or until you select a different workspace.

3. Click Tools ➢ Workspaces; you'll see the 2D Drawing workspace listed on the Workspaces menu below 3D Modeling and AutoCAD Classic (see Figure 1.10). In the Appendix, AutoCAD users will switch to the 3D Modeling workspace and make a few adjustments to it.
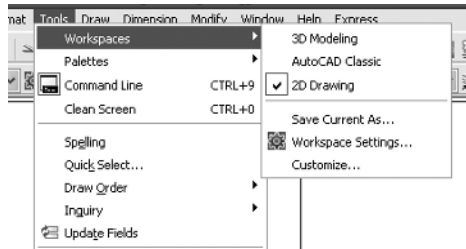
> For LT users, in Step 3, you will see the 2D Drawing workspace listed under AutoCAD LT in the Workspace menu.

F I G U R E   1 . 1 0 :   The Workspaces menu

4. For now, click 2D Drawing to close the menu and reset the screen to your new workspace.

When you make changes to the new workspace—by adding a toolbar or changing the background color of the drawing area—you can easily update the 2D Workspace to accommodate those changes. Follow steps 1 and 2 above, naming the workspace again to 2D Workspace. You'll get a warning window that tells you that a workspace by that name already exists, and asks you if you want the new arrangement to replace the old one. Click Yes.

The Keyboard

The keyboard is an important tool for entering data and commands. If you're a good typist, you can gain speed in working with AutoCAD by learning how to enter commands from the keyboard. AutoCAD provides what are called *alias keys*—single keys or key combinations that start any of several often-used commands. You can add more or change the existing aliases as you get more familiar with the program.

In addition to the alias keys, you can use several of the F keys (function keys) on the top row of the keyboard as two-way or three-way toggles (switches) to turn AutoCAD functions on and off. Although buttons on the screen duplicate these functions (Snap, Grid, and so on), it's sometimes faster to use the F keys.

Finally, you can activate commands on the drop-down menus from the keyboard, rather than using the mouse. If you press the Alt key, an underlined letter, called a *hotkey*, appears on each menu. Pressing the key for the underlined letter activates the menu. Each command on the menu also has a hotkey. Once you activate the menu with the hotkey combination, you can type the underlined letter of these commands. For a few commands, this method can be the fastest way to start them and to select options.

While working in AutoCAD, you'll need to key in a lot of data, such as dimensions and construction notes, answer questions with "yes" or "no," and use the arrow keys. You'll use the keyboard constantly. It may help to get into the habit of keeping your left hand on the keyboard and your right hand on the mouse if you're right-handed, or the other way around if you're left-handed.

The Mouse

Your mouse most likely has two or three buttons. (If it's an IntelliMouse, it has two or more buttons with a wheel between them.) So far in this chapter, you have used the left mouse button for choosing menus, commands, or command options or for holding down the button and dragging a menu, toolbar, or window. The left mouse button is the one you'll be using most often, but you'll also use the right mouse button.

While drawing, you'll use the right mouse button for the following three operations:

> ▶ To display a menu containing options relevant to the particular step you're in at the moment

> ▶ To use in combination with the Shift or Control key to display a menu containing special drawing aids called *object snaps* (see Chapter 10)

> ▶ To display a menu of toolbars when the pointer is on any icon of a toolbar that is currently open

If you have a three-button mouse, the middle button is usually programmed to display the Object Snap menu, instead of using the right button with the Shift key. If you have an IntelliMouse, you can use the wheel in several ways to control the view of your drawing. I'll cover those methods in subsequent chapters.

AutoCAD makes extensive use of toolbars and the right-click menu feature. This makes your mouse an important input tool. The keyboard is necessary for inputting numeric data and text, and it has hotkeys and aliases that can speed up your work. But the mouse is the primary tool for starting commands, selecting options, and controlling toolbars.

The next chapter will familiarize you with a few basic commands that will enable you to draw a small diagram. If you're going to take a break and want to close AutoCAD, choose File ➢ Exit, and choose not to save the drawing.

Are You Experienced?

Now you can...

- ☑ **open a new drawing using the Startup dialog box**

- ☑ **recognize the elements of the AutoCAD Graphics window**

- ☑ **understand how the Command window works and why it's important**

- ☑ **use drop-down menus**

- ☑ **call up and control the positioning of toolbars**

- ☑ **save a workspace of your screen setup in AutoCAD**