Specialty Output

Glass Eye 2000

WIN

Glass Eye 2000 Professional Plus is a highly specialized creative environment for designing stained glass patterns (FIG. 1). It provides expert tools, materials, patterns, and functions that are not found in mainstream drawing or illustration programs, such as Adobe Illustrator or CorelDraw. Glass Eye 2000 is, simply, the best-in-class application for stained glass design and pattern-making.

Included with the program is a 400-file pattern library in ready-to-use form. In addition, more patterns are available for sale on the publisher's website, http://www.dfly.com, following the "Patterns for Sale" link (FIG. 2). Any of these patterns can be customized in any variety of ways to express the exact design intent of the user.

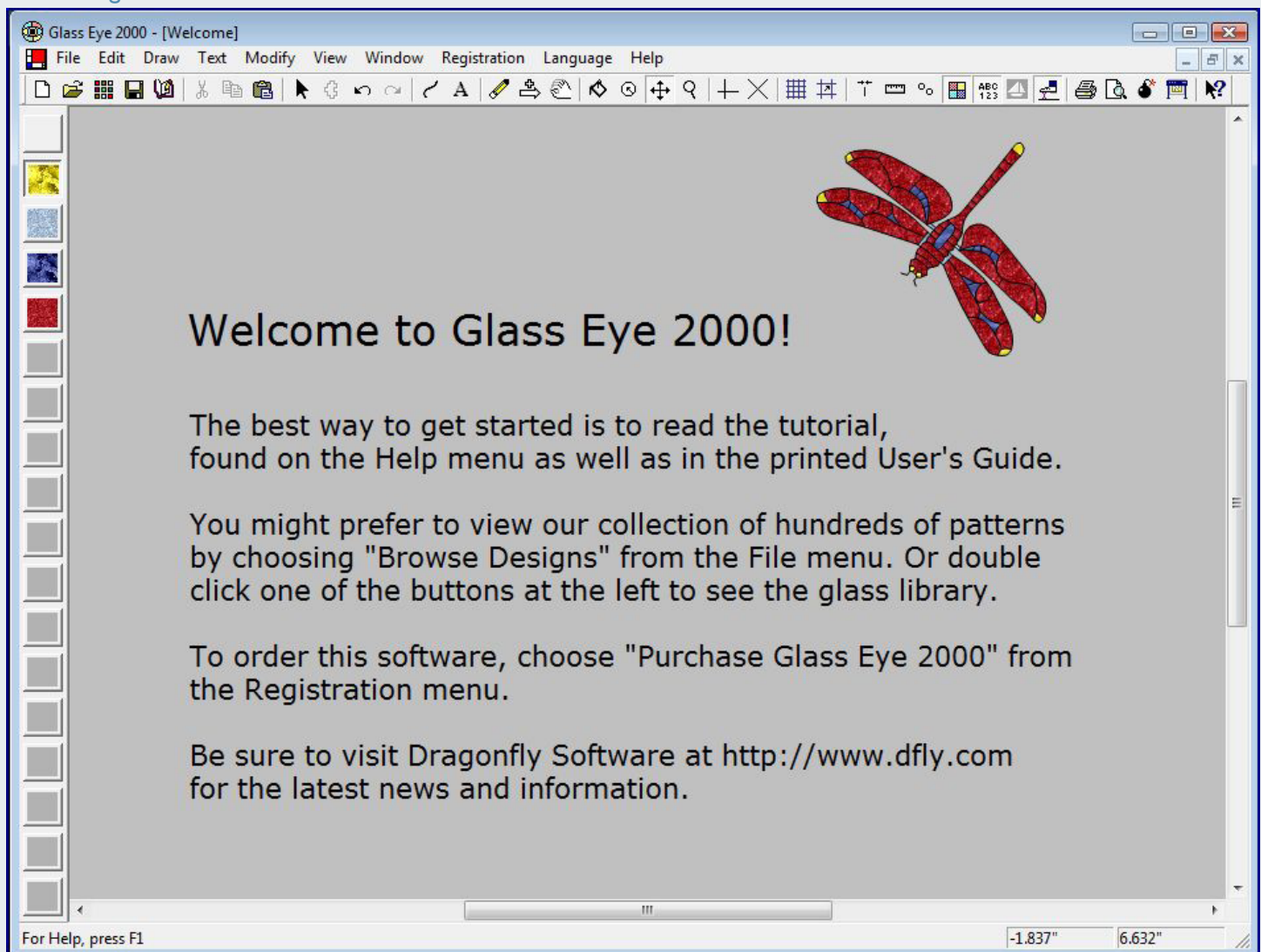FIG. 2. The Glass Eye 2000 store sells hundreds of unique stained glass patterns.

FIG. 1. The Glass Eye 2000 work environment provides all of the tools and stained glass specific functions necessary for design and fulfillment.

Specialty Output

All stained glass patterns, from simple to complex, are composed of any or all of the following: curved or straight lines, and circles or ellipses. The program utilizes an elegantly simple system to define curves and to build-out a design from any point. The points that define a curve are called "knots," and moving the knots changes the fit of the curve between any two outlying knots (FIG. 3). There are two kinds of knots; one that delineates the shape of the line, and a second, called a "slider," that moves with a line as the shape of that line changes. On-screen a slider knot is designated as a white dot, whereas fixed knots appear as gray.

Connecting any two knots forms a straight line. Adding a knot anywhere along a straight line enables the formation of a curve. When knots and lines form an enclosed space it is referred to as a "piece." Pieces can be filled with colors that will ultimately be used to create the actual stained glass item (FIG. 4). The colors can be turned off by pressing the Show Colors button, so that they do not distract from the pattern. The shapes that form the design can be manipulated in an infinite variety of ways, providing an artistic palette with endless choices. In addition to the design itself, the size of the output can be scaled, in inches, feet, millimeters, centimeters, and meters, and resized to any dimensions.

The program environment is arranged in typical fashion, with the commands subsumed in the menu bar, the toolbar below it with the array of tools, the color palette along the left edge, and the main design viewing area occupying the remainder of the screen. Rulers can be displayed along the top and left side of the viewing area, and the origin point can be reset for convenience.

The finished output from the program is in the form of printed sheets. The user can output a design on a single sheet, regardless of its actual size; in its actual size, which may require tiling across multiple sheets of paper; or scaled by a specific percentage. In addition, the output may be page-numbered, include the title and artist, the date and time, and the filename. The Reverse Design option can be used to print a mirror image of the design to view it from the back rather than the front (FIG. 5). The output options also include a Calibrate function to ensure that any inaccuracies in the printer hardware, or software driver, are adequately compensated for. And finally, a Print Preview is provided to check the design on-
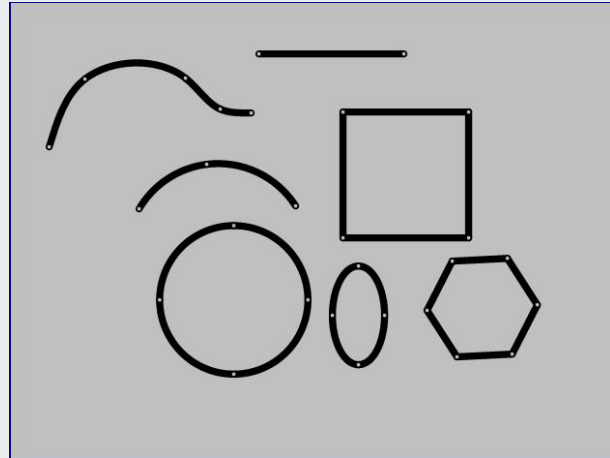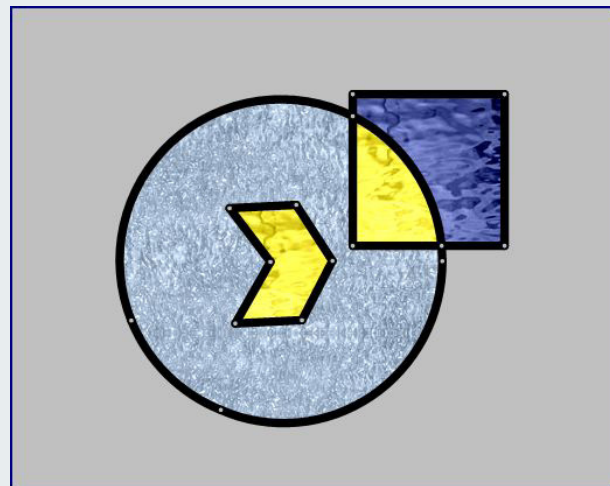

FIG. 3. Knots appear as small round dots.

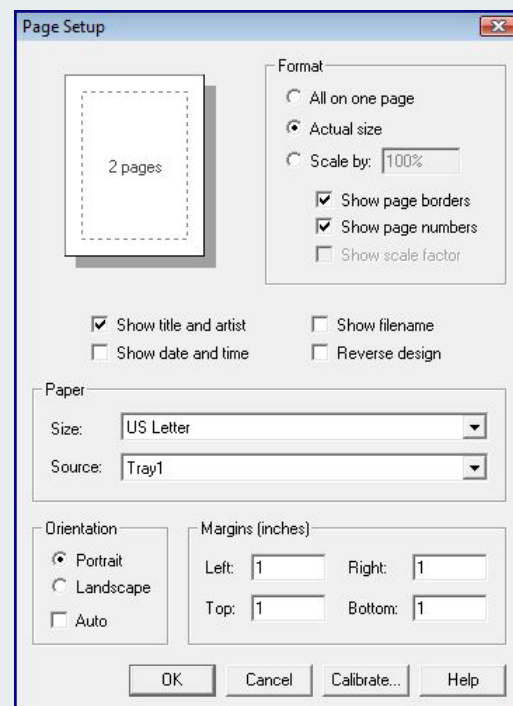*FIG. 4. Pieces are contained areas.*

FIG. 5. The Page Setup dialog box.

screen before committing it to paper.

Navigating a design that is partially out of the field of on-screen view is accomplished either by using the scroll bars on the right side and bottom of the work area, or by using the Pan tool to grab an area and move it anywhere within the confines of the screen. The Magnifying tool can also be used to zoom in or out to show extreme detail or size reduction.

Editing elements in a design can be accomplished in many ways. A single line segment, or multiple segments can be moved, reshaped, or deleted. Movement can be restricted to horizontal, vertical or diagonal by holding down the Shift key while dragging. Movement can also be accomplished by using the arrow keys. Holding down the Control key while using the arrow keys results in precision movement. Regardless of what editing actions have taken place, the user has multiple levels of Undo and Redo to reclaim past work.

The lines in a design represent lead that will hold the pieces of stained glass together. Each line has a face width, which is the visible leaden line that will ultimately appear on the finished piece. A portion of the lead that flows between the adjoining pieces is called the heart thickness. The user can set these values, in inches or millimeters, using the Default Line Properties selection from the Modify menu (FIG. 6). Precise measurements can be executed by enabling the Show Measurements option from the shortcut menu. Users then get real-time read-outs of elements as they are drawn.

As previously stated, all designs are composed of various iterations of lines and curves which are joined to form pieces that are ultimately cut out of glass. A straight line is formed by using the Curve tool, clicking in the start position, dragging the length of the line, and then double-clicking. To simplify the construction of common shapes the user can select from the Draw menu to create curves, arcs, squares, rectangles, circles, ellipses, and polygons. The Drawing Properties selection, also in the Draw menu, provides options for settings such as the starting position of a square (center or corner), the number of sides in a polygon, and more.

Color, either solid, textured, or images of actual glass surfaces, can be added at any time to a com-
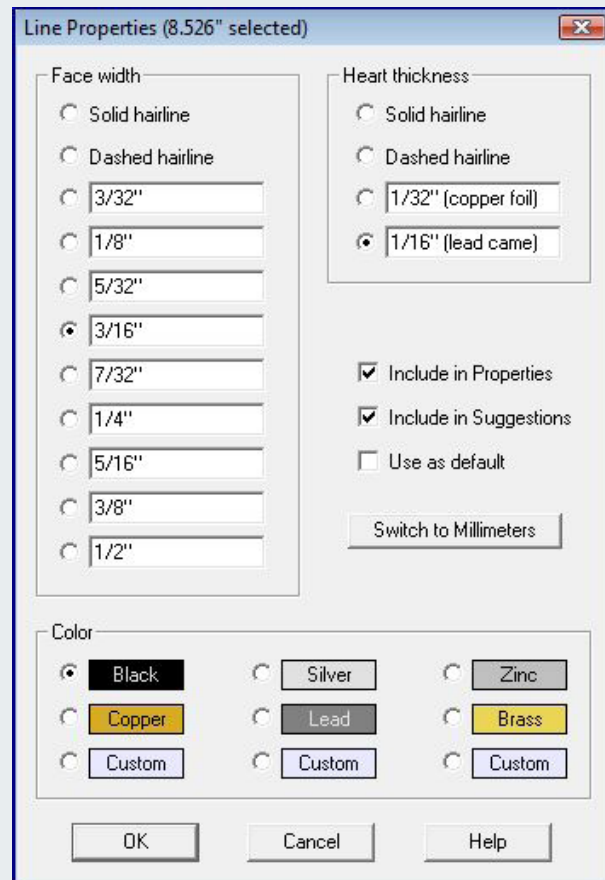

FIG. 6. The Line Properties dialog box.

pleted piece. Color mode is entered by clicking on one of the colors in the palette. The cursor then becomes a tipping paint bucket that releases its color contents when clicked in a defined area. Changing colors of multiple like-colored pieces can be accomplished easily by selecting a replacement color, holding the right mouse button, and clicking in any of the target pieces. They will all change at the same time. A color may be removed by clicking on the top color palette button, which is blank, and clicking on the color to be removed.

Adding a new color to a color palette button is accomplished by double-clicking the button, which results in the display of the Color Selector dialog box. Here the user can select any color, either visually or numerically, select the texture, and the actual glass, by manufacturer, that most closely approximates its appearance (FIG. 7). These options, and more, such as setting the glass opacity and angle, enable the user to produce the most accurate rendering of the finished piece possible.

Control over knots, which form the start and end of a line, determine the arc of a curve and the shape of a piece, is a fundamental skill in Glass Eye 2000. The essential rule regarding knots is that the fewer the number of knots on a line, the smoother the line will be, and, the more knots on the line, the more control the user will have over its shape. With this in mind, the user is significantly empowered with the options to add or remove knots, move them along a line, or add them uniformly to subdivide a line segment or shape.

The lines and knots that form a pattern can be edited in an infinite variety of ways, using typical drawing program commands such as cut, copy, paste, stretch, resize, rotate, move, scale, flip, reflect, straighten, group and repeat. The Yank command is unique in that it enables separating a line from a knot so that it can be positioned elsewhere.

The precision of the design process is aided by a number of on-screen features that help to guide the user's placement of pattern elements. The first of these are the Crosshairs, two repositionable perpendicular or diagonal lines that can be placed, where necessary, for exact alignment. The second are Grid lines, which form independent, equally spaced horizontal and vertical lines, in any user-defined increments, with an optional Auto Grid Snap
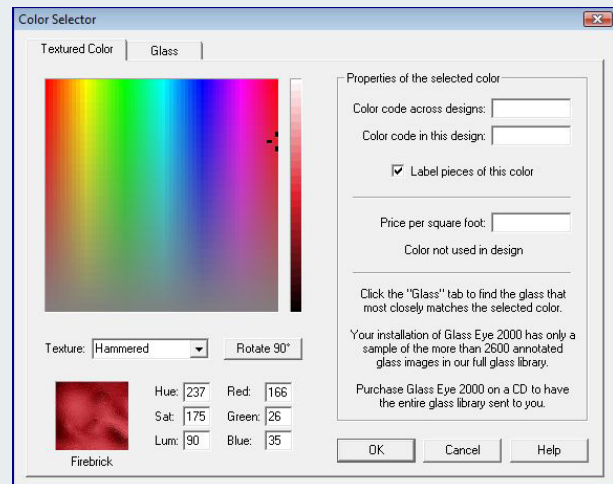

FIG. 7. The Color Selection dialog box.

feature that ensures symmetry. As with other feature properties, there are a variety of settings that can be applied to both Crosshairs and Grids.

One of the most difficult stained glass patterns to construct is a panel lampshade. The program's Lamp Wizard greatly simplifies the process with a dialog box with user-defined settings for the number of sides, number of tiers, tier measurements, and more (FIG. 8).

Although there is significant precision programmed into Glass Eye 2000, users can still make mistakes, such as failing to have knots at the intersection of two lines. Fortunately, the program has the intelligence to detect such problems by using the Suggest option from the Help menu. The Suggest command can identify missing knots, overlapping lines, uncolored pieces, and more.

Keeping track of many individual pieces that will compose a stained glass project is a daunting problem which is addressed with the program's available text and labeling options. The Add Text button enables the composition of any text, in any available font, size, and color, to be placed anywhere on the screen. Individual pieces can be numbered automatically using the Piece Labeling option from the Text menu. The numbers can be assigned by piece color (consecutively) or location (top to bottom), using a user-defined font for normal and small pieces (FIG. 9). The color of each piece can also be indicated by defining it in the Color Selector. This information is vital for keeping track of each piece during production.

Although text is not usually a part of a stained glass design, it can be. Glass Eye 2000 can convert the outline of any text into its corresponding shape using the AutoTrace Text command. The resulting shape(s) can be filled with glass color(s), and edited like any other shape.

The versatility of Glass Eye 2000 is quite impressive. Designs from other sources, such as raster or vector files, digital photos, or scanned images can be imported as background images that can, based on their properties, be traced either manually or automatically. Vector files from Adobe Illustrator, CorelDraw and AutoCAD in WMF, EMF, DXF, or DWG format can be imported directly. The program can export files as BMP, JPEG, TIFF, PNG, PCX, WMF,
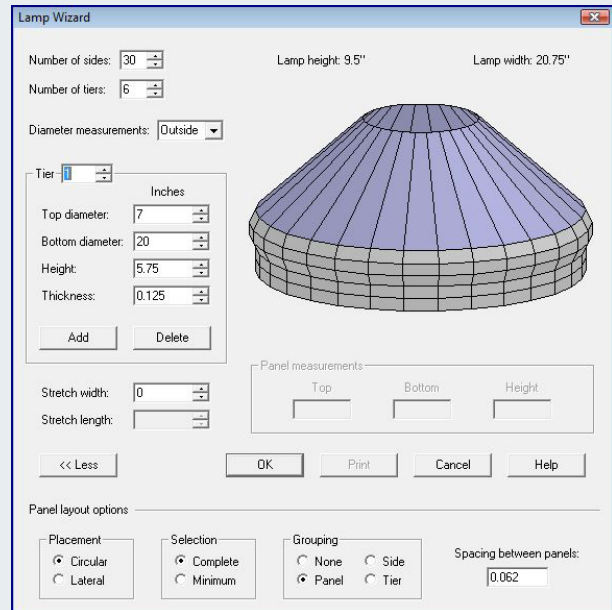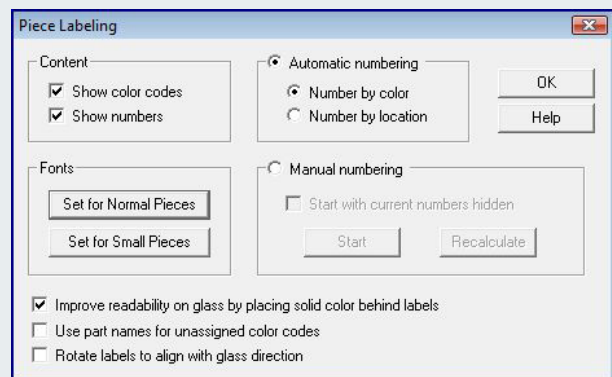

FIG. 8. The Lamp Wizard dialog box.

FIG. 9. The Piece Labeling dialog box.

Specialty Output

EMF, and DXF formats. Selected portions of a design can also be exported, and as with the complete design, can be sent directly to a client via e-mail.

Completed designs are saved, either manually or using the AutoSave command, wherein the user can specify a recurring interval, and then printed.

As a professional program, which may be used on a daily- if not hourly-basis, Glass Eye 2000 provides significant user customization options. The user can make their own shortcut menus, and assign hot keys to frequently used commands, using the Customize Menus and Hot Keys from the View menu (FIG. 10).

Glass Eye 2000 goes far beyond the confines of a pure design environment. Using the Design Properties dialog box the user can define the project metadata, including title; artist; style; category; shape; keywords; degree of difficulty; notes; glass, copper foil, and came usage; scrap factor; calculated material cost; miscellaneous item cost; labor cost; profit percentage; and calculated project cost.

In the realm of stained glass pattern making, Glass Eye 2000 stands at the pinnacle of the craft of computer-aided design. Not only is it elegantly programmed to cover virtually every design contingency, but is also thoroughly documented. The full guide can viewed on-line at:
http://www.dfly.com/tutorial/index.html,
or downloaded as a PDF at:
http://www.dfly.com/tutorial/getutorial.pdf.
A 10-min. video demonstration can be viewed at:
http://www.dfly.com/video.html.
Prices range from $150 for the Standard hobbyist version, to $1295 for the Enter-prise version. Most of the features described in this review are available in the Professional Plus version costing $450. A comparison of the various editions can be seen at http://www.dfly.com/editions.html. A 30-day trial version of the software can be downloaded at http://www.dfly.com/download.html.

FIG. 10. The Customize Menus and Hot Keys dialog box.