Contents

The online help for Elastic Reality is organized mostly as a technical reference.

However, there are a large number of tips and other descriptive information in this online help which will help you gain insight into this flexible product.

(If you've set your Windows display driver to use "large fonts," some of the following lines may wrap at the default Help window width. If this happens, and you find it objectionable, please make the Help window a little wider.)

The FILE Menu

The FILE menu contains commands which affect entire documents (projects). You can open, close, import and save documents from this menu as well as exit Elastic Reality

Related Topics
New...
Open...
Edit...
Close

Save
Save As...

Project Description...

Preferences

Exit

FILE/New...

Is used to create a new Elastic Reality document.

It causes the Sequence Editor to appear so that you can specify the images to be associated with the new document.

Since more than one Elastic Reality document can be open at once, executing this command while another Elastic Reality document is already open will not disturb that document.

Keyboard: CTRL+N

See Also: FILE/Open, FILE/Close, and Sequence Editor

FILE/Open...

Is used to open a previously defined Elastic Reality document.

The next dialog to appear after choosing this menu item allows you to choose the Elastic Reality document to be opened.

Since more than one Elastic Reality document can be open at once, executing this command while another Elastic Reality document is already open will not disturb that document.

Keyboard: CTRL+O

See Also: FILE/New and FILE/Close

FILE/Close

Is used to close the Elastic Reality document that currently has input focus.

If any changes have been made to the document which have not been saved to disk, you will be asked for confirmation before the document is closed.

This menu item is unavailable if there are no Elastic Reality documents currently open.

Keyboard: CTRL+F4

See Also: FILE/New and FILE/Open

FILE/Edit...

Is used to make changes to the images associated with the current Elastic Reality document.

It brings up the Sequence Editor in which images can be added, deleted, or replaced.

This menu item is unavailable if there are no Elastic Reality documents currently open.

Note: The FILE/Edit menu command is different from the commands in the EDIT menu in that this command allows you to modify the images and frames in your document.

The commands in the EDIT menu give you "clipboard" style functions for manipulating the ***shapes*** in your documents.

See Also: Sequence Editor

FILE/Save

Is used to write any changes to the current document to disk.

Saving a document for the first time gives a name to that document.

Thereafter, that same file name is implied when you execute this command. If you wish to change the name under which a file is saved, you can use the FILE/Save As... command instead.

This menu item is unavailable if there are no Elastic Reality documents currently open.

Keyboard: CTRL+S

See Also: FILE/Save As

FILE/Save As...

Is similar to FILE/Save in that it writes the current Elastic Reality document to disk with the exception that it always asks you to specify a new name for the document.

If the name you specify refers to an already existing Elastic Reality project, you will be asked to confirm that you wish to overwrite the older project.

This menu item is unavailable if there are no Elastic Reality documents currently open.

See Also: FILE/Save

Help/About...

Is used to display a dialog showing your serial number, Elastic Reality's version, and other information including Elastic Reality Inc.'s copyright info.

FILE/Exit...

Is used to exit Elastic Reality.

If any documents are open which contain unsaved changes, you will be asked if you want to save those changes, or not. You'll also have the chance to cancel exiting Elastic Reality.

Keyboard: ALT+F4

The EDIT Menu

The EDIT menu contains commands which allow various "clip board style" operations to be performed on shapes.

Shapes are the basic building blocks of Elastic Reality documents much like words are to a text processor. As such, it makes sense to have the "clipboard" style features (that one would expect from a text processor) operate upon shapes.

Note: There is an "EDIT" command in the FILE menu which is used to gain entry to the Sequence Editor where you can add, delete, or otherwise modify the images and frames which comprise the current document.

On the other hand, the commands in the EDIT menu refer to the shapes within your document and how they can be cut, copied, pasted, etc..

Note: The clipboard related commands operate upon currently selected shapes.

Novice users may introduce an unexpected side effect when flipping back and forth between rolls.

For example, if you select a shape in the B roll, and then flip to the A roll, the shape you had selected in the B roll is still selected. If you were to "cut" right then, the visible A roll wouldn't change - but a shape would have been cut from the B roll.

This enables you to use the clipboard commands with shapes in both rolls at the same time (via shift-select).

To avoid unexpected side effects of this, it is good to get in the general habit of clicking somewhere in the document (away from any shape) after switching rolls. This deselects any previously selected shapes and starts you anew.

Note: Shapes exist throughout time. Adding or removing a shape from one frame adds or removes that shape from all frames

Related Topics
Undo
Redo
Cut
Copy
Paste
Duplicate
Delete
Select All

EDIT/Undo *[Last Operation]*
EDIT/Redo *[Last Operation]*

Undo is used to remove the effect of the last change to the document.

Redo undoes the effect of an undo. Say that 10 times fast.

Elastic Reality supports multiple levels of Undo. Nearly every change to the document window can be undone.

The actual text represented by ***[Last Operation]*** changes depending upon the nature of last change made.

Redo is accessible only if the last thing you did was an Undo. If you've made any changes to the project after performing an Undo, the information necessary to perform a Redo is lost.

Keyboard: Undo CTRL+Z

EDIT/Cut

Is used to ***remove*** the selected shapes and place them in the clipboard.

If you cut only one shape of a pair of joined shapes, the shapes are separated before the cut operation is performed.

If you cut both shapes in a pair of joined shapes, they remain joined in the clipboard.

Keyboard: CTRL+X

See Also: EDIT/Copy, EDIT/Paste, EDIT/Delete, EDIT/Duplicate

EDIT/Copy

Is used to ***copy*** the selected shapes to the clipboard. The original shapes are not disturbed.

If you copy only one shape of a pair of joined shapes, only that shape will be copied to the clipboard.

If you copy both shapes in a pair of joined shapes, their joined status is preserved through the clipboard operation.

Keyboard: CTRL+C

See Also: EDIT/Cut, EDIT/Paste, EDIT/Delete, EDIT/Duplicate

EDIT/Paste

Is used to ***add*** new copies of shapes in the clipboard into the document.

If both shapes of a pair of joined shapes are in the clipboard, they will be pasted already joined.

Keyboard: CTRL+V

Note: Pasted shapes are added to the same group from which they came with only two exceptions.

First, if the group from which they came no longer exists, the shape is added to the default group.

Second, if the pasted shapes are from a different document, the shapes will be added to the default group..

Note: Pasted shapes are added to the document in exactly the same location as they were when they were added to the clipboard.

That is, if you EDIT/Copy a shape, then immediately EDIT/Paste it, you will have two shapes superimposed completely over each other.

If what you intend is to make a quick copy of a shape for immediate reuse, try EDIT/Duplicate instead.

See Also: EDIT/Cut, EDIT/Copy, EDIT/Delete, EDIT/Duplicate

EDIT/Duplicate

Is used to add new copies of selected shapes into the document.

This process is similar to performing an EDIT/Copy and then an EDIT/Paste upon the selected shapes with the exception that the shapes will be pasted ***near*** their original location (instead of exactly at their original location).

The new shape is placed nearby to make it easier for you to select or reshape it.

Note: Duplicated shapes are added to the same group as the original.

See Also: EDIT/Cut, EDIT/Copy, EDIT/Delete, EDIT/Paste

EDIT/Delete

This command removes the selected shapes without first placing them in the clipboard.

Shapes that have been "deleted" cannot be retrieved using EDIT/Paste. But, an EDIT/Delete can be EDIT/Undo(ne).

Keyboard: DEL

See Also: EDIT/Cut, EDIT/Copy, EDIT/Duplicate, EDIT/Paste

EDIT/Select All

Is used to select all shapes in the currently selected rolls which are not "hidden".

Note: To limit the shapes to be selected to a specific group, use the "select" button in the Groups dialog.

Note: Shapes which are "hidden" (see the Group dialog.) are not included in a "Select All" selection.

Keyboard: CTRL+A

See Also: EDIT/Cut, EDIT/Copy, EDIT/Duplicate, EDIT/Paste, and WINDOW/Groups/Select Button

Notices

This Elastic Reality On-Line Help System was created within The Windows Help Magician from Software Interphase, Inc.

The SHAPE Menu

The SHAPE menu contains commands relating to the joining and unjoining of shapes as well as commands which allow you to import and export individual shapes.

Related Topics
Join
Unjoin
Import...
Export...

SHAPE/Join

Is used to join together two previously selected shapes.

If a shape is not joined to another, it defines a barrier.

If a shape is joined to another shape, then it defines a warp or morph of the area enclosed by the source shape to the area enclosed by the destination.

To join one shape to another, select the shape (using the Select Tool) which you intend to become the source shape. Then SHIFT-Select the shape which you intend to become the destination shape. When both shapes are selected, use the SHAPE/Join menu command or the keyboard shortcut "j" to join the shapes.

Note: Joined shapes must be in the same group.

If two shapes are in different groups when they are joined, the destination shape will be moved into the same group as the source.

Keyboard: J

See Also: SHAPE/Unjoin

SHAPE/Unjoin

Is used to unjoin two previously joined shapes.

Sometimes this is necessary because some operations such as closing an open shape or breaking a closed shape cannot be done to shapes that are joined.

More often, it is used to undo a join that was created in the wrong order.

Note: The shape to be unjoined must first be selected (and, of course, joined).

Keyboard: SHIFT+J

See Also: SHAPE/Join

The order in which you select the shapes to be joined determines which is the source shape and which is the destination. The first shape selected is designated the source.

SHAPE/Import...

Is used to bring up a file dialog which you can use to pick a previously defined Elastic Reality shape file. The shapes found in the selected file will be added to the current document.

(Elastic Reality shape files are created by SHAPE/Export-ing them. Their default file name extension is .ers)

If a group exists in the current document which matches the group in which the shapes were saved, the shapes will be added to that group. Otherwise, the shapes will be added to the default group.

The added shapes are automatically selected, making it easy to make immediate changes to them.

See Also: SHAPE/Export

SHAPE/Export...

Is used to bring up a file dialog which you use to name a file in which the selected shapes will be saved.

Exported shapes can be imported into other projects at a later time.

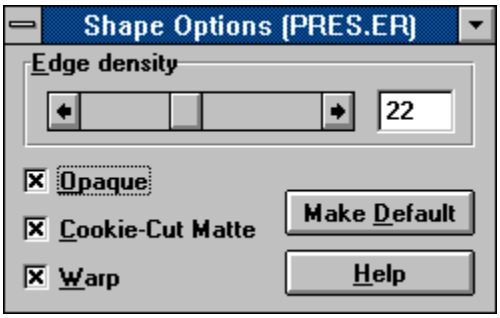
Another way to move shapes from one project to another is to drag them from one document window to another.

If you'd like to copy shapes to another document (and not remove them from the current document), you can use EDIT/Copy and EDIT/Paste between the documents.

See Also: SHAPE/Import

WINDOW/Shape Options...

Is used to bring up the Shape Options dialog. You can bring up this dialog either by choosing its menu item or by pressing CTRL+H on the keyboard when an Elastic Reality document has input focus.



Click on the controls in the image above for quick help. Or, read on for more detailed information.

The Shape Options dialog is non-modal in that it can be left visible at all times and will reflect the status of any selected shape.

From the Shape Options dialog, you can control a shape's Edge Density, Opacity, and whether or not this shape contributes to the Cookie-Cut Matte or the warping process.

If you've asked for a Cookie-Cut matte in any of the three matting stages, Elastic Reality will create a Cookie-Cut matte based upon only those shapes which have "Cookie-Cut" checked in their Shape Options.

If the "Warp" check box is not checked, the selected shape is not used during warping. It can be used as part of the Cookie-Cut matte, if that check box is checked. This allows you to create shapes which contribute to the Cookie-Cut matte but don't impact any warping taking place.

Not checking any of the boxes in the Shape Options dialog means that the shape exists for reference only. This is handy for many reasons including complex motion tracking and for ensuring proper placement of image elements taking into account other objects which will be composited into the scene at a later time.

See Also: Edge Density, Opacity, and Cookie Cut Matte

Non-Modal Dialog - What Is That?

A non-modal dialog is one which can stay "up" all the time and does not need to be dispatched before work can proceed. An example of a non-modal dialog is the Shape Options dialog which, if "up", is constantly updated to reflect the status of whatever shape you've selected most recently.

Edge Density - What Is That?

The shapes you draw are "ideal".

A shape's Edge Density is a measure of how closely Elastic Reality's discreet approximation will match the ideal shape you drew.

The higher a shape's Edge Density, the higher its ***"precision".*** That is, the more closely that Elastic Reality's discreet approximation will match your ideal shape.

Edge density is controlled in correspondence mode using either of two means:

- First, pressing the "+" or "-" keys on the keyboard will increase or decrease the edge density of the selected shapes.

- Second, bringing up the Shape Options dialog and using the scroll bar contained there to increase or decrease the edge density of the selected shapes.

Even though Edge Density is limited to 50 there is no effective limit to the precision you can achieve since you can add more correspondence points (more than the four you get by default). To learn how to add correspondence points, see Adding And Removing Correspondence Points.

See Also: WINDOW/Shape Options...

Opacity - What Is It?

If you think of a shape as a curtain, then Opacity is a measure of how much light the curtain will let through.

In Elastic Reality, a shape can be opaque which means that no motion will be transmitted from inside the shape to outside the shape (and vice versa).

If you tell a shape not to be opaque (it is opaque by default), then a small amount of the motion occurring within the shape will affect the areas outside the shape (and vice versa).

This may be useful to smooth out strongly warped motion.

See Also: WINDOW/Shape Options...

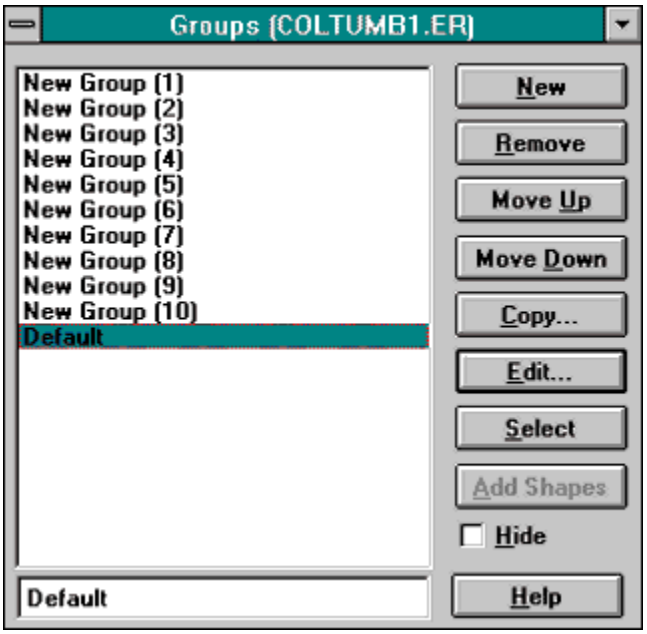
WINDOW/Groups...

Is used to display the Groups dialog.

To bring up this dialog from the keyboard, press CTRL+G.

The Groups dialog is non-modal.

From the Groups dialog, you can control all aspects of Elastic Reality groups including depth, motion, transparency, and visibility.



Click on the controls in the image above for quick help. Or, select one of the related commands below for more detailed information.

Related Commands:
New
Remove
Move Up
Move Down
Copy
Edit
Select
Add Shapes
Hide

See Also: Groups - What Are They?, Depth - What Is That?

Groups - What Are They?

Groups are collections of one or more shapes which share certain characteristics. These characteristics include depth, acceleration, transparency, and visibility.

Groups are a very important concept within Elastic Reality and are the means by which several of Elastic Reality's more advanced features are administered.

Every shape is a member of some group.

When you create a shape, it is placed in the "default" group.

New groups can be defined, and shapes added to them, from the Groups dialog (accessible in the WINDOW menu).

For the most simple of projects, all shapes can technically remain in the default group. However, some of Elastic Reality's more advanced features (including two-and-a-half-D morphs, variable transparency, acceleration, etc), require that groups (beyond the default) group be used.

Depth - What Is That?

In Elastic Reality, every shape is a member of a group. And, every group has a depth.

When an area enclosed by one shape crosses an area enclosed by another shape, a decision must be made as to which shape is drawn "in front of" or "behind" the other. This decision is made based upon the relative depth of the groups to which the crossing shapes belong.

A group's depth is determined visually by its place in the list of groups in the Groups dialog. Higher groups (in the list) are "in front of" the groups lower down.

If two shapes cross each other which are at the same depth (this can only happen if they are in the same group), unpredictable results can occur.

This is because given the choice more than one shape with the same depth, Elastic Reality must pick which shape's color will be written into the target pixel. Sometimes, Elastic Reality will pick correctly (from your point of view). And sometimes, it will not.

As this decision is made on a pixel by pixel basis, it can result in some visually distracting artifacts.

If you have some unexplainable artifacts in your image, and the shapes in the immediate area belong to the same group, try breaking up those shapes into different groups.

Also, remember that areas within the image which are not enclosed by any shapes are technically part of the "default" group and are therefore at the same depth as areas enclosed by shapes in the "default" group.

If you have some unexplainable artifact in your image, and all of your shapes are in the default group, try breaking up your shapes into different groups. Place those groups in front of the "default" group by placing them higher than the default group in the list of groups.

See Also: Groups, Acceleration, Transparency, Visibility, and WINDOW/Groups.../Move Up|Down Button

WINDOW/Groups.../Hide Button

The visibility feature of Elastic Reality is one of convenience - it does not directly influence the outcome of your work, thought it may make your work easier to accomplish.

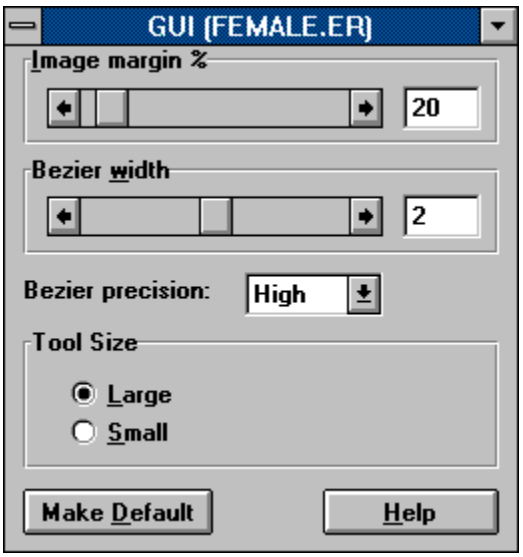
From the Group Options dialog you can turn the visibility of a whole group on or off by choosing a group name and clicking on the button marked "Hide".

This is useful because it allows you to clear away any unnecessary clutter caused by a lot of shapes in a confined area.

Example: If you were working on a detail on someone's teeth, and the teeth shapes were in a different group from the lip shapes, you could temporarily make the lip shapes invisible ("hide" them) so that your view of the teeth shapes close-by would be unobstructed.

Related Commands:
New
Remove
Move Up
Move Down
Copy
Edit
Select
Add Shapes

FILE/PREFERENCES/GUI



Click on the controls in the above image for quick help. Or, read on for more detailed information.

Is used to bring up a non-modal dialog which allows you to change certain preferences items relating to how the graphical user interface (GUI, pronounced "gooie") are rendered. These include:

Image Margin %:	You can set how large a margin Elastic Reality will display. This value is expressed as a percentage of the width and height of the current image. Its minimum and maximum values are 0 and 300 percent, respectively.
Bezier Width:	You can vary how thickly curves will be drawn. A maximum value of 3 means that shapes will be drawn with triple thickness. ***For fastest response from the GUI, keep this value set at one (ie: single thickness).***
Bezier Precision:	You can vary how precisely all curves are drawn. For machines with particularly slow graphics, you can gain speed in the user interface by setting this value to "Low."
Tool Size:	Users of high resolution displays (1024 by 768 and above) will benefit from using the large tool size. Users of lower resolution displays gain more usable real estate by using the smaller tools.

See Also: FILE/PREFERENCES/Brightness and Contrast..., FILE/PREFERENCES/Image...

Correspondence Mode

 Correspondence mode is entered by clicking on the correspondence mode icon in the tool bar. It can also be entered by pressing "C" on your keyboard when the Elastic Reality window has input focus.

Correspondence mode is exited by selecting another tool from the tool bar.

The purpose of correspondence mode is to help you define and control how one shape "corresponds" to another. Specifically, correspondence mode allows you to visualize how the perimeter of one shape maps (or translates) into the perimeter of the shape to which it's joined.

When a shape is selected in correspondence mode, its correspondence information will be drawn (in yellow under the default color scheme).

If the selected shape is a barrier (ie: not joined to another shape), or if the shape to which the selected shape is joined is not visible, correspondence information is displayed as correspondence points (little boxes which can be moved about) and line segments between them which are indicative of the shape's edge density.

If the selected shape is joined to another visible shape, both shape's correspondence points will be drawn as well as line segments (again, indicative of the shape's edge density) linking the perimeter of both shapes.

It is these line segments (drawn from one shape to the other) which give the most prominent visual cue as to "what part of this shape corresponds to what part of that shape."

For more information about how you can add and delete correspondence points, adjust them individually or all at once, or how to place a single correspondence point from a shape into a group different from the rest of the shape, see the discussions indicated below.

See Also: Correspondence Points - What Are They?, Adding And Removing Correspondence Points, and Adjusting Correspondence Points, Point Motion And Dissolve

The Sequence Editor

The Sequence Editor is a modal dialog which allows you to create and modify the lists of images comprising an Elastic Reality document.

Shown horizontally are the individual cells or frames in the document. If you are working on a still document (still morph or still warp) then only a single cell or frame will be defined per roll.

Shown vertically are the rolls in your document. There can be up to four rolls in an Elastic Reality document. These include the: A Roll, B Roll, Matte Roll, and Background Roll.

You can use the TAB key to shift focus (from the keyboard) from roll to roll.

The Sequence Editor itself is a simple non-linear video editing system. You can cut, copy, and paste single images or groups of images within a single roll or between rolls.

Related Topics
SE/FILE Menu
SE/EDIT Menu
SE/IMAGE Menu

Modal Dialog - What Is That?

A modal dialog is one which must be dispatched before work can resume in a document window. Modal dialogs will almost always have one or more buttons which, if you push on them, will cause the dialog to disappear returning control to the document window.

Attempting to click the primary mouse button anywhere outside a modal dialog, while one is up, should result in a clicking sound from your computer's speaker. This is because the modal dialog is insisting upon being resolved before it will allow you to resume work on the document window.

Every Elastic Reality document has an A Roll.

If you are working on a warp, the images in the A Roll are the images you will be warping.

If you are working on a morph, then the A Roll ***usually*** contains the images you will be morphing "from".

If you are working on a morph, the B Roll ***usually*** contains the images you will be morphing "to."

The Matte Roll - What Is It?

If you wish, you can select images which will be used to control how the A Roll and B Roll will be combined into the finished morph.

To be used for this purpose, this roll must be enabled in the Render Options dialog (as one of the matting choices). Alternatively, you can use this roll to specify how the finished morph or warp will be composited onto the Background Roll (also from the Render Options dialog).

These images represent a background onto which Elastic Reality can automatically composite a finished morph or warp.

The SE/EDIT Menu

The SE/EDIT menu contains commands which allow various editing operations to be performed on the rolls you have defined in the current Elastic Reality document. Using these commands, the Sequence Editor becomes a simple non-linear video editing system.

The rolls in the Sequence Editor are, what amounts to, child windows of the Sequence Editor. The last roll that you clicked in or on is the "active" roll and is signified by a change to the color of its title bar.

The commands in this menu work upon the selected frames in the current roll.

To select a frame, click the primary mouse button within its stamp's borders.

To select more than one frame, the usual Windows keyboard qualifiers are used. These are SHIFT, to select a range. And, CTRL to select individual frames.

Related Topics
Undo

Cut
Copy
Paste
Multi-Paste
Delete
Select All

Reverse

SE/EDIT/Undo *[Last Operation]*

Is used to undo the last change to the current roll.

The actual text represented by ***[Last Operation]*** changes depending upon the nature of last change made.

Keyboard: CTRL+Z

SE/EDIT/Cut

Is used to remove the selected frames and place them in the clipboard.

Keyboard: CTRL+X

See Also: SE/EDIT/Copy, SE/EDIT/Paste, and SE/EDIT/Delete, SE/EDIT/Multi-Paste

SE/EDIT/Copy

Is used to copy the selected frames to the clipboard. The original frames are not disturbed.

Keyboard: CTRL+C

See Also: SE/EDIT/Cut, SE/EDIT/Paste, and SE/EDIT/Delete, SE/EDIT/Multi-Paste

SE/EDIT/Paste

Is used to add copies of any frames in the clipboard into the current roll.

Keyboard: CTRL+V

See Also: SE/EDIT/Cut, SE/EDIT/Copy, SE/EDIT/Delete, SE/EDIT/Multi-Paste

SE/EDIT/Delete

Is used to terminate the selected frames with "extreme prejudice." That is, unlike SE/EDIT/Cut, the frames are not preserved in the clipboard.

Keyboard: DEL

See Also: SE/EDIT/Cut, SE/EDIT/Copy, SE/EDIT/Paste, SE/EDIT/Multi-Paste

SE/EDIT/Select All

Is used to select all of the frames in the current roll.

Keyboard: CTRL+A

See Also: SE/EDIT/Cut, SE/EDIT/Copy, and SE/EDIT/Paste

WINDOW/Groups.../New Button

New groups are created from the Groups dialog by clicking the button marked "New".

Upon doing so, a new empty group called "New Group (***counter***)" is created.

Changing this nondescript group name into something more descriptive will help you remember why you felt it was important to define this group in the first place.

To change a group's name, select it in the list of groups by clicking on its current name. That name will appear in the editable text area beneath the list of group names.

Clicking the primary mouse button in that editable text area will allow you to change the group's name.

Note: The ***Default*** group cannot be renamed.

Related Commands:
Remove
Move Up
Move Down
Copy
Edit
Select
Add Shapes
Hide

WINDOW/Groups.../Remove Button

To remove a group, press the button marked "Remove" in the Groups dialog.

If the group you wish to remove has member shapes, you'll be asked if you want to delete those as well. If you answer:

"Yes" Both the group and the shapes in it will be removed.
"No" Only the group will be removed. The shapes that were in it will be added to the Default group.
"Cancel" Neither the selected group, nor its shapes will be deleted.

If there are no shapes in the group you've elected to delete, you'll be informed of this and given a chance to confirm your desire to remove the group.

Note: The Default group cannot be removed.

Related Commands:
New
Move Up
Move Down
Copy
Edit
Select
Add Shapes
Hide

WINDOW/Groups.../Move Up Button
WINDOW/Groups.../Move Down Button

In the Groups dialog, the order in which a group's name appears in the list of groups defines its "depth".

Using these buttons, you can alter a group's depth by moving it up or down within the list.

The group listed "above" another group is considered to be "in front of" that group.

Related Commands:
New
Remove
Copy
Edit
Select
Add Shapes
Hide

WINDOW/Groups.../Select Button

Clicking on this button (which appears in the Groups dialog) causes all of the shapes in the highlighted group to become selected.

This is a handy way of selecting all of a group's shapes especially when they are spread throughout the image.

Related Commands:
New
Remove
Move Up
Move Down
Copy
Edit
Add Shapes
Hide

WINDOW/Groups.../Add Shapes Button

This button (which appears in the Group Options dialog) is used to add the currently selected shapes to the group currently highlighted in the groups list.

Note: The Group Options dialog is non-modal. When it is displayed, it instantly updates itself to reflect the last shape you selected. This imposes a specific order of mouse clicks to add a shape to a group. These are:

1. Select the shapes to be added to a group - perhaps including shift selects to select more than one shape.
2. Select the group (from the groups list) to which you want the shapes added.
3. Click the "Add Shapes" button

Related Commands:

New
Remove
Move Up
Move Down
Copy
Edit
Select
Hide

WINDOW/Groups.../Copy... Button

Clicking on this button (which appears in the Groups dialog) allows you to copy a group's motion and/or transparency curves to other groups.

It brings up a modal dialog in which you specify which curve is to be copied to which groups.

Pick the curve to be copied by clicking in the check box next to either "Motion Curve" or "Transparency Curve" or both.

Next, choose the destination group or groups. You can choose more than one destination group. You'll notice that the group you're copying from is missing from the list of possible destination groups since copying something to itself is a copy not worth doing.

Clicking the button marked "OK" in this dialog causes the copy to actually take place.

Clicking the button marked "Cancel", dispatches the dialog without copying anything.

Related Commands:
New
Remove
Move Up
Move Down
Edit
Select
Add Shapes
Hide

WINDOW/Groups.../Edit... Button

Clicking on this button (which appears in the Groups dialog) causes the Motion and Transparency Editor to appear.

You can bring up the Motion and Transparency Editor directly by pressing CTRL+T on your keyboard or by choosing the "Motion and Transparency..." command from the WINDOWS menu.

Like the Groups dialog itself, the Motion and Transparency Editor dialog is non-modal. This means, it can be left "up" and will refresh its contents appropriately as you select different shapes.

See Also: Motion and Transparency Editor Basics and Motion and Transparency Editor Menus

Related Commands:
New
Remove
Move Up
Move Down
Copy
Select
Add Shapes
Hide

SE/EDIT/Reverse

The order of the frames which are currently selected will be reversed.

This is useful for creating "ping-ponged" lists of images. That is, a list of images which progress from "FRAME-A" to "FRAME-B" and then back to "FRAME-A".

To do this, select the range from "FRAME-A" to "FRAME-B" and ***copy*** it to the clipboard. Then, move to the end of the sequence, and select ***paste.***
Now, you will have two copies of the sequence of images from "FRAME-A" to "FRAME-B". Select the second range. Performing a ***reverse*** now will cause the second sequence of "FRAME-A" to "FRAME-B" to become a sequence from "FRAME-B" to "FRAME-A". If desired, you can ***cut*** one of the "FRAME-B" images out of the middle.

See Also: SE/EDIT/Cut, SE/EDIT/Copy, and SE/EDIT/Paste

SE/IMAGE/Make Stamp

Upon executing this command, stamps will be made for the selected frames in the current roll. These stamps are helpful within the Sequence Editor.

In the Sequence Editor, being able to see the frames you're working with makes it easier to align rolls properly. And, of course, it helps you ensure that you're working with the right images in the first place.

Keyboard: CTRL+S

See Also: SE/IMAGE/Delete Stamp

The SE/File Menu

The SE/EDIT menu contains commands which allow various editing operations to be performed on the rolls you have defined in the current Elastic Reality document. Using these commands, the Sequence Editor becomes a simple non-linear video editing system.

The rolls in the Sequence Editor are, what amounts to, child windows of the Sequence Editor. The last roll that you clicked in or on is the "active" or "current" roll and is signified by a change to the color of its title bar. Each of the commands in this menu operate upon the "active" roll.

Related Commands
Clear Roll

Preferences...

Accept
Cancel

SE/IMAGE/Delete Stamp

This command causes stamp files associated with the selected frames in the current roll to be deleted. You might want to do this if you intend to delete the corresponding frames since without the original images, the stamp files simply take up (a little) space.

If a frame has changed, and its stamp does not reflect the frame's new appearance, you do not have to delete it prior to making a new stamp. Simply select the frame and execute the ***Make Stamp*** command.

See Also: SE/IMAGE/Make Stamp

SE/FILE/Clear Roll

This command purges the current roll. If the current roll is not empty, you'll be asked to confirm your choice.

SE/IMAGE/Insert...

This is the command used to add frames to a sequence. When executing a dialog appears from which you can select the names of image files or the names of other sequence files.

If the file names you select correspond to images, the Sequence Editor will attempt to load each image in turn and, if successful, will attempt to locate a corresponding stamp file. If a stamp file is found, it will be displayed.

If the file you choose is an Elastic Reality project file, you'll be given a chance to pick a roll from that project. All the images in the roll you select will be ***imported.***

Insertion takes place before the ***selection point.***

If you select a frame by clicking in the text area below its stamp, the selection point is prior to that frame.

If you select a frame by clicking within the borders of its stamp, the selection point is within that frame. Inserting an image (or images) now, will erase the selected frame.

Note: You can perform "insertion" using drag-and-drop from File Manager.

In File Manager, click on the image files you wish to insert.

Drag, by holding down the primary mouse button, the images to the desired roll in the Sequence Editor. Releasing the primary mouse button will add the selected images to the desired roll.

Keyboard: INSERT

The HELP Menu

The HELP Menu contains commands which access these online help documents.

Related Topics
Contents...
Search...
Product Support...
About Elastic Reality...

To select a second shape without deselecting the first shape, you hold down the SHIFT key while selecting the second shape.

For the purposes of joining shapes, two shapes are selected together (by selecting the first shape and then shift-selecting the second).

For shape editing purposes, any number of shapes can be selected at the same time by shift-selecting each additional shape after the first shape has been selected.

Correspondence Points - What Are They?

Correspondence points are the little boxes drawn along the perimeter of a selected shape when in correspondence mode.

The position of these boxes along a shape's perimeter determines the spatial relationship between one shape's perimeter and another's.

This has a powerful and dramatic impact on your resulting image quality. See the tip - Always Inspect/Adjust Correspondence Points

A visual cue as to which shape is the source and which is the destination is that source correspondence points are drawn as boxes within boxes. This can help if things get crowded.

Correspondence points are distinct from control points (which are the building blocks of the Bezier curves on which Elastic Reality's shapes are based).

This distinction is evidenced by the fact that key frame information exists for each shape's control points ***and*** correspondence points (and that both sets of points can be key framed on different frames).

Typically, even complex effects can be created with each shape having only one correspondence key frame. Whereas a shape's control points are typically key framed on several frames (of a moving project).

As just stated, correspondence information is typically set up on only one frame (one key frame).

The reason for this is simple.

Suppose a pair of shapes describing two hands are linked together. The tip of the thumb on one hand is made (by you) to correspond to the tip of the thumb on the other hand.

Elastic Reality's automatic interpolation of correspondence point location is then almost always sufficient to maintain the relationship across whatever motion the two hands may be involved in.

Correspondence points can be adjusted over time, just like control points. When you make a change to a shape's correspondence points, that shape gets a correspondence key on the current frame. Correspondence information is "tweened" on a shape-by-shape basis from key frame to key frame.

This is discussed in additional detail in the section on Adjusting Corresponding Points.

See Also: Correspondence Mode - What Is It?, Adding And Removing Correspondence Points, Adjusting Correspondence Points, Tip - Always Inspect/Adjust Correspondence Points

Adding And Removing Correspondence Points

Correspondence points can be added to a shape by holding down the INSERT key when clicking on the desired location (along the perimeter of a shape).

If the shape clicked on is joined to another shape, an analogous correspondence point is created on the shape's mate.

Typically, you might want to add additional correspondence points when the shapes you're dealing with are quite large and complex. With such shapes, there might be many places along the perimeter where you would want to exert precise control.

For example, you might place the four default correspondence points around an outline of the human body by placing them at the top of the head, the groin, and one on each foot tip. By adding two additional correspondence points and placing them at each hand tip, you will have created a total of six correspondence points which are fairly evenly spaced around the body leading to an evenly spaced and precisely defined linkage between to two human figures.

Two shapes can be joined which have vastly different numbers of control points. ***However, in order for two shapes to be joined, they must have the same number of correspondence points.*** This is because correspondence points are responsible for defining the specific relationship between the perimeters of both shapes.

Since shapes to be joined must have the same number of correspondence points, it is wise to join the shapes first (when they both have the default four correspondence points) rather than after any additional points are added.

Removing a correspondence point is accomplished by pressing CTRL+D after clicking on the point to be removed.

Note: Adding or removing a correspondence point on one frame of a shape, performs the analogous operation on all other frames.

See Also: Correspondence Points - What Are They?, Correspondence Mode - What Is It?, and Adjusting Correspondence Points

The Zoom Tool

 The Zoom tool is used to magnify (or reduce) your view of image(s) being worked on.

To zoom in (enlarge) about a specific location, click on the zoom tool and then click on the center of your interest. The zoom tool remains active until another tool is chosen.

To zoom out (reduce) about a specific location, click on the zoom tool and then click on the center of your interest while holding down the SHIFT key. The zoom tool remains active until another tool is chosen.

From the keyboard, pressing "i" or "o" will zoom ***I***n or ***O***ut, respectively. Using these keyboard equivalents, the center of your interest is defined by the current location of your mouse pointer. Also, using these keyboard commands do not activate the zoom tool (and do not deactivate the tool you were using).

Double clicking on the zoom tool icon will toggle the current document between an actual size view and the highest level of magnification you've previously zoomed the document to.

Zooming is designed to keep your "center of interest" stationary. That is, the image elements directly underneath the mouse pointer when the zooming operation occurs will remain there.

See Also: WINDOW/Actual Size, Scrolling About The Document

The Move/Grab Hand Tool

 The Move or Grab Hand tool is used to pan (or scroll) about the image quickly.

When the image you are working on is larger than the window through which it is being viewed, you can use this tool to scroll the image about within the window.

Select the tool either by pressing "m" on the keyboard, or by clicking the primary mouse button over the tool's icon (shown above). Then click (and hold the primary mouse button down) anywhere in a document window. Moving the mouse (with the mouse button still held down) will scroll the image in the direction of your mouse movement.

Three other ways of scrolling the image include:

1. Using the scroll bars along the left and bottom of the document window. If either or both of these scroll bars are absent, it is because the entire image and the currently defined margin fit entirely within the visible document window.

2. Using the cursor keys on the keyboard.

   The cursor keys will scroll your image by a jump of many pixels in the direction appropriate to the key you pressed.

3. Finally, you can use the mouse and keyboard to scroll.

   Pressing the "5" key on the your numeric keypad while anywhere in the document window, moves the spot the mouse is currently over to the center of your view (or as close as it can get to center).

Note that Elastic Reality provides for a user-definable margin around the image. The area outside the image (the margin) is treated identically to the area within the picture.

HELP/Contents Menu

This menu command causes the Window Help System to bring up the contents page of this online help.

For complete information about how to use the Windows Help System, see the HELP/How To Use Help command contained within the menu bar of this online help.

HELP/Search Menu

This menu command causes the Window Help System to bring up the search dialog covering this online help.

Using this dialog, you can perform keyword searches within an index of the online help.

For complete information about how to use the Windows Help System, see the HELP/How To Use Help command contained within the menu bar of this online help.

The Window Menu

The Window menu contains commands which manage the appearance of the (multiple) document windows which may be open at the time. Also, several non-modal dialogs can be displayed as a result of executing commands in this menu.

Related Topics
Cascade
Tile Horizontal
Tile Vertical
Arrange Icons

Groups...
Motion And Transparency...
Key Frame Control...
Wireframe Preview...

Shape Options...
Freehand Precision...
Grid Control...

Actual Size
Zoom In
Zoom Out

Show Matte

WINDOW/Actual Size Menu

This command returns the current document to a 1:1 view. That is, one image pixel corresponds to one screen pixel.

Double clicking on the zoom tool (if the document is already zoomed in or out) will also return the view to a 1:1 state.

See Also: Zoom Tool

WINDOW/Cascade Menu

If more than one document window is open, this command causes each window to be sized and moved such that each window's title bar can be seen.

See Also: WINDOW/Tile Vertical, WINDOW/Tile Horizontal

WINDOW/Tile Horizontal Menu

This command causes each document window to be sized and moved such that each fills the available horizontal space without overlapping one another.

See Also: WINDOW/Tile Vertical, WINDOW/Cascade

WINDOW/Tile Vertical Menu

This command causes each document window to be sized and moved such that each fills the available vertical space without overlapping one another.

See Also: WINDOW/Tile Horizontal, WINDOW/Cascade,

WINDOW/Arrange Icons

This command causes any icons corresponding to currently minimized document windows to become arranged in an orderly fashion within the Elastic Reality window.

This does not affect any minimized Elastic Reality dialogs.

Elastic Reality allows you to specify how much "elbow room" you'd like outside the image area.

This space, outside the image area is called the margin. Elastic Reality treats shapes in the margin area the same as shapes within the image area allowing you the added flexibility of being able to define effects which have elements that cross on and off screen.

The FILE/Preferences Menu

The FILE/Preferences menu contains commands which bring up dialogs which allow you to define various esthetic controls.

Related Topics
Brightness and Contrast...
Image...
GUI...

The Square Tool

 The somewhat inappropriately named square tool is a convenient shortcut for drawing Elastic Reality shapes in the form of not only squares but rectangles as well.

Rectangular shapes are especially common when creating TransJammer style digital video effects. For example, the shape of an entire bitmap is, of course, a rectangle.

Keep in mind that you can use this tool as a convenient shortcut even if the shape you ultimately want is not, strictly speaking, a rectangle or square. The four control points created by this tool are no different from any other: they can be reshaped, resized, and rotated. Also, additional control points can be added or subtracted.

To enter this tool, select its icon from the tool palette or press "S" (that's SHIFT "s") on the keyboard when the Elastic Reality window has input focus.

To use the tool, select it and then click and hold the primary mouse button. Where you click will become one of the corners of the rectangle you are about to sweep out. While continuing to hold the primary mouse button down, reposition the mouse to where you want the opposite corner to be and let the primary mouse button go.

If you hold down the SHIFT key when using this tool, you'll be constrained to sweeping out an exactly square region.

Note: If you need to create several rectangles with exactly the same aspect but different size, create the first rectangle with the Square tool, then EDIT/Duplicate as many needed and resize them with the Select tool with the SHIFT key held down (to preserve aspect).

The tool remains active until another tool is selected.

The use of this tool is affected by whether or not Snap To Grid is enabled.

When Snap To Grid is off, you can draw rectangles anywhere and in any size.

When Snap To Grid is on, you'll be able to repeatably draw rectangles according to a specific grid spacing as defined in the Grid Control dialog.

Tip: Often, especially when creating TransJammer style digital video transitions, you'll need to draw a rectangle which precisely encloses the entire picture.

This is trivial using the Rectangle tool in Snap To Grid mode.

In the Grid Control dialog, specify "1" for both horizontal and vertical divisions. Turn Snap To Grid on...and using the Rectangle tool, draw the rectangle you need.

See Also: Reshape Tool, Circle Tool, Freehand Tool, Pen Tool, Select Tool, Grid Control

The Circle Tool

 The somewhat inappropriately named circle tool is a convenient shortcut for drawing Elastic Reality shapes in the form of not only circles but ovals as well.

Keep in mind that you can use this tool as a convenient shortcut even if the shape you ultimately want is not, strictly speaking, a circle or oval. The four control points created by this tool are no different from any other: they can be reshaped, resized, and rotated. Also, additional control points can be added or subtracted.

To enter this tool, select its icon from the tool palette or press "C" (that's SHIFT "c") on the keyboard when the Elastic Reality window has input focus.

To use the tool, select it and then click and hold the primary mouse button. Where you click will become one of the corners of the rectangular bounding box of the oval or circle you are about to sweep out. While continuing to hold the primary mouse button down, reposition the mouse to where you want the opposite corner to be and let the primary mouse button go.

If you hold down the SHIFT key when using this tool, you'll be constrained to sweeping out an exactly circular region.

Note: If you need to create several ovals with exactly the same aspect but different size, create the first oval with the circle tool, then EDIT/Duplicate as many needed and resize them with the Select tool with the SHIFT key held down (to preserve aspect).

The tool remains active until another tool is selected.

Drawing ovals (and circles) with this tool is affected by whether or not Snap To Grid is enabled. If Snap To Grid is turned on, you'll be able to repeatably draw circles and ovals on a specific grid pattern.

See Also: Reshape Tool, Square Tool, Freehand Tool, Pen Tool, Select Tool, Grid Control

Motion and Transparency Editor Basics

The Motion and Transparency Editor is a non-modal dialog which allows you to view and modify motion and transparency curves on a group by group basis.

You open the Motion and Transparency Editor in one of four ways:

1. From the Groups dialog, you can click the "Edit" button.

2. From the Groups dialog, you can double click on a group name.

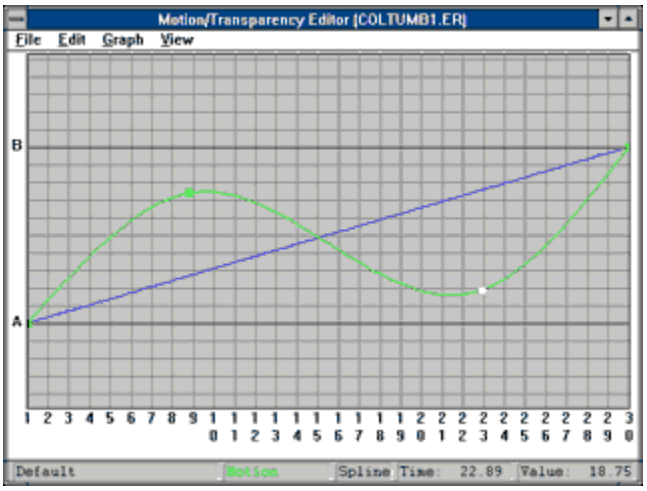
3. From the WINDOW menu, you can choose the "Motion And Transparency" item.

4. When an Elastic Reality document has keyboard input focus, you can press CTRL+T on your keyboard.

The Motion and Transparency Editor allows you to edit two types of control information (represented by two editable curves). Under the default color scheme, the transparency curve is blue while the motion curve is rendered in green.

The very first time you enter the Motion and Transparency Editor (for a given group), both curves will extend linearly from the bottom left to the top right. Since both curves occupy the same space, one will be drawn over the other.

Motion and Transparency Editor Anatomy



For quick help, click on the area you're interested in, in the above image. Or, read on for more detailed information.

The Motion and Transparency Editor shows the name of the group being edited in text area in the lower left hand corner of the dialog.

(You can change the group you're editing by clicking on another group's name in the Groups dialog or by clicking on a shape which belongs to another group.)

To the right of the name of the group currently being edited, you'll find either the word "Motion" or the word "Transparency" depending upon which of those two curves is currently editable.

You can toggle between editing the motion and transparency curves by selecting the corresponding commands in the GRAPH menu or by pressing CTRL+M or CTRL+T respectively.

Next to the right, you'll see either the word "Spline" or the word "Linear."

If the word "Spline" appears, the curve currently being edited is set to spline mode. If the curve being edited is set to linear mode, the word "Linear" will be written there instead.

Spline and linear modes can also be chosen from the GRAPH menu or by pressing CTRL+S or CTRL+L respectively.

When in spline mode, the space between control points on the motion or transparency curve being edited will be fitted with a smooth spline.

When in linear mode, the space between control points on the motion or transparency curve being edited with be fitted with line segments.

The two remaining text areas along the bottom of the Motion and Transparency Editor display the precise location of the editable control point currently under the mouse. If the mouse is not over an editable control point, then these areas are left blank.

When the mouse is "over" an editable control point, your cursor will change to a cross hair indicating that the control point can now be edited by depressing the primary mouse button and dragging the control point to a new location.

If you position your mouse over a control point, and the cursor does not change into a cross hair, either your mouse is not actually over the control point (give or take a small tolerance), or your mouse is over a control point for the curve you are ***not*** editing.

Adding and Deleting Control Points

You can add control points to the curve currently being edited by clicking the primary mouse button when holding down the CTRL key. If you continue to hold down the primary mouse button, you can immediately drag the new control point to the desired location.

To remove a control point, select it by clicking the primary mouse button over it, and then press CTRL+D key on the keyboard or use the EDIT/Delete Point menu command.

What Does Each Axis Represent?

Along the horizontal axis is time. The time axis is represented as either percentages of the complete effect or in terms of frames.

You can Zoom In or Out along the time axis using the "i" and "o" keys respectively.

The vertical axis of the graph represents "starting" and "ending" characteristics.

The transparency curve contributes to two of Elastic Reality's automatically generated matte sources. These are: the All Groups Matte, and the Default Group Matte. If you are not using one of these two matting sources for the project you're working on, then you don't need to trouble yourself with setting the transparency curves.

For the purposes of transparency, the starting edge, marked "A", represents a fully visible A roll.

The ending edge, marked "B", represents a fully visible B roll.

Any values in-between represent the relative mix of the A and B rolls commensurate with the relative distance from the starting and ending edges.

For the purposes of motion, the vertical axis represents proximity to the source and destination shapes. In a morph, values along the starting edge cause the affected shapes to match their source form and locations. Values along the ending edge cause the affected shapes to match their destination form and location.

In a still project, this corresponds directly to a shape's acceleration and deceleration. Since there is only one source and one destination shape (because there are no key frames in a still project), a steeply rising or falling motion curve produces rapid acceleration or deceleration.

This is how the motion curve got its name: In a still project, the motion curve directly controls the rate at which a shape will transition from its source shape to its destination shape.

In a moving project with multiple key frames, the name "motion" curve, isn't ***as*** appropriate because the curve is really controlling the transition (or interpolation) between source shapes and destination shapes rather than their rate of speed.

The difference comes about because key frames mean that over time, there is more than one "source" for each shape and more than one "destination" (i.e.: one of each per key frame).

This is a long winded, and a bit apologetic, way of explaining that for moving projects, key frame information more directly controls the rate of motion than the "motion" curve. It is more appropriate to view the "motion" curve as what controls the interpolation between the source and destination shapes on a given frame.

Note: You can see the effect of changes made to a group's Motion curve in "real time" by making your adjustments while in Wireframe Preview mode.

For more information about controlling a shape's movement, see WINDOW/Key Frame Control...

Motion and Transparency Editor Menus

The Motion and Transparency Editor provides the following menus:

File	allows motion or transparency curves to be saved and loaded from disk.
Edit	allows motion or transparency curves to be copied and pasted from group to group.
Graph	determines which curve (motion or transparency) you wish to edit and if that curve should be linear or spline based. When "Clamp Motion Curve" is checked, you'll be unable to move the motion curve above the "B" line or below the "A" line. This prevents any unwanted over- or under-shoot.
View	allows you to view the horizontal axis by frame or percentage and allows you to zoom in and out.

MTEditor/FILE Menu

This menu contains the following commands:

Load	brings up a file dialog from which you can select a file to read a motion or transparency curve from. The curve currently being edited is replaced with the curve contained in the selected file.
Save	The curve currently being edited (either the motion or transparency curve) will be saved to the file which you choose from the file dialog.
Exit	The Motion and Transparency Editor is exited. It can be brought up again using the WINDOW/Groups.../EDIT button.

MTEditor/EDIT Menu

This menu contains the following commands:

Copy — Puts the curve (motion or transparency) currently being edited into a private clipboard.

Keyboard: CTRL+C

Paste — The curve currently being edited (either the motion or transparency curve) is overwritten by the curve in the private clipboard.

Keyboard CTRL+V

Reset — The curve currently being edited is reset to the linear setting (stretching from bottom left to top right). All control points along the curve (except for the two end points) are deleted.

Keyboard CTRL+R

There is no Cut command because it is not applicable: there must always be both a motion and transparency curve.

MTEditor/GRAPH Menu

This menu is a means of choosing between editing the motion or transparency curves and whether or not those curves are in spline or linear mode. It also contains an optional qualifier to the motion curve and a shortcut means to deleting all the control points on a curve.

To be able to edit the motion curve, choose GRAPH/Motion or press CTRL+M on the keyboard.

To be able to edit the transparency curve, choose GRAPH/Transparency or press CTRL+T on the keyboard.

Which curve you are currently editing is reflected in the text area (third from the left) along the bottom of the Motion and Transparency Editor. "T" indicates the transparency curve is being edited, and "M" indicates that the motion curve is being edited.

The reason why you must explicitly pick between editing one curve or the other is that very often (usually, in fact), control points for both curves will overlap making it ambiguous as to which curve's control point you intended to select.

By making which curve is editable a modal choice, the ambiguity is removed.

To represent the current curve as a linear progression, choose GRAPH/Linear or press CTRL+L on the keyboard.

To represent the current curve as a spline progression, choose GRAPH/Spline or press CTRL+S on the keyboard.

To make it impossible for the motion curve to undershoot or overshoot the starting or ending position, choose GRAPH/Clamp Motion Curve or press CTRL+A on the keyboard.

Any portions of the motion curve currently above the B side, or below the A side, will remain unchanged until they are modified. When modified, they will be shifted to be between the A and B borders.

An analogous clamping option is not required for the transparency curve since you cannot overshoot or undershoot transparency. For example, you cannot have 110 percent transparency or -30 percent transparency.

MTEditor/View Menu

This menu contains the following commands:

Frame	displays the time (horizontal) axis in terms of frame number. The letter "F" is the keyboard shortcut for this.
Percent	displays the time (horizontal) axis in terms of percentage. The "%" on the keyboard is the shortcut for this. Zero percent is the beginning of the effect. 100 percent is the end of the effect.

Frame and Percent are mutually exclusive.

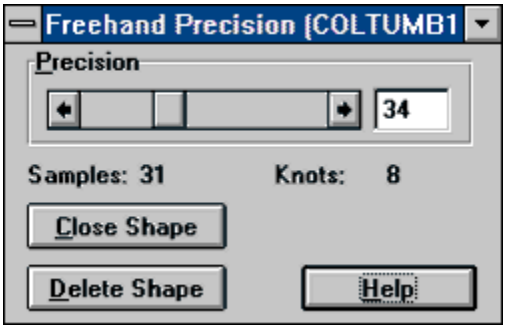
Zoom In	magnifies the time axis ("i" is the keyboard shortcut).
Zoom Out	reduces the time axis ("o" is the keyboard shortcut).
Note:	If you need to enlarge or reduce the vertical axis, you can grab borders marked "A" and "B" and drag them to a new position. This rescales the curves without affecting their values. This is often handy when creating curves with significant overshoot or undershoot.

Freehand Precision...

This non-modal dialog is used to adjust the precision with which Elastic Reality will match the freehand curve you just drew.]

You can open this dialog in one of two ways.

- First, you can choose the WINDOW/Freehand Precision... menu item.
- Second, you can double click upon the freehand tool's icon in the tool palette.



Click on the controls in the above image for quick help. Or, read on for more detailed information.

The controls within the dialog are only active immediately after using the freehand tool to draw a shape.

Sliding the "precision" control to the right more closely fits the curve you drew at the expense of additional Bezier control points. Sliding the "precision" control to the left reduces the number of Bezier control points at the expense of a looser fit to your drawn curve.

When you draw a freehand curve, Elastic Reality adaptively picks an initial "guess" as to how to fit your drawn curve with an Elastic Reality (Bezier) curve. Elastic Reality's guess is usually pretty good.

To create a closed shape with the freehand tool, it is generally necessary only to come close to the starting point. Alternatively, you can push the button (in the Freehand Precision dialog) marked Close Shape to automatically close the freehand shape.

If you decide the freehand shape you've just drawn is unneeded or unwanted you can push the space bar to erase it. Alternatively, you can push the button (in the Freehand Precision dialog) marked Delete Shape.

See Also:————Freehand Tool

Mattes! Mattes! Mattes!

One of reasons for Elastic Reality's enormous power and flexibility is its robust matting capabilities. There are, in fact, more than 600,000 combinations of how mattes can be used within Elastic Reality, each of which offers as endless an array of possibilities as there are pictures to plug in.

While this sounds like a scarey number of choices, relax...managing matting is easy to master (perhaps easier than saying that sentence three times fast!)

In the most generic terms, a matte is simply a picture.

For Elastic Reality's purposes, a matte is a picture which is used to modify another picture or pair of pictures. Specifically, the "modification" controlled by a matte is that of mixing two images together.

Given two images and a matte image, the matte image controls how the two images will be mixed together to produce an output image.

There are ten different sources of mattes in Elastic Reality.

Some are internally generated given the shapes and transparency controls you define. Some are internally generated given other information, such as how far along a particular frame is within the entire effect. And others are taken from outside sources (externally defined pictures).

There are three places within Elastic Reality where you can link a matte into the creative process.

1. There is the matte which controls how the A roll and B roll is mixed together after warping.

2. There is the matte which controls how the image produced by the warp kernel is composited onto a Background Roll - if one is defined.

3. There is the matte which can (at your choosing) be saved along with your effects so that they can be composited into other images.

Each matte can be inverted, or not, and can be softened or blurred to four different levels.

There's also another couple of modifiers which, after adding up, yields the more than 600,000 different matting possibilities.

Now we'll describe each one in turn.

Possibility Number 1....just kidding.

Additional Information:
What The Three Matting Stages Are
Matte Sources Defined
And What Are They Good For?
Render Options Dialog

Matte Sources Defined

The following are the different sources for mattes. Click on each for more information.

None
All Groups
Default Group
Linear
Cookie Cut
A Roll Matte
B Roll Matte
AB Roll Matte
Matte Roll
0 Percent
50 Percent
100 Percent

What The Three Matting Stages Are

This describes the three stages of Elastic Reality's computations during which mattes are used. These stages are defined in the RENDER/Render Options dialog.

Morph Composite

If there is both an A roll and a B roll, then this stage is accessible.

The matte chosen here will be used to determine how the intermediate results from the separate A roll and B roll warps will be combined together and passed on to the next stage.

If a given pixel in the Morph Composite matte is fully white, the same pixel in the output of this step will be taken fully from the intermediate A roll.

If a given pixel in the Morph Composite matte is fully black, the same pixel in the output of this step will be taken fully from the intermediate B roll.

If a given pixel in the Morph Composite matte is a gray value, the same pixel in the output of this step will be a mixture of the intermediate A and B rolls with the mixture being dependent upon the actual gray value.

Background Composite

If there are any images in the Background Roll, then this stage is accessible.

The matte chosen here will be used to determine how the intermediate results from the previous stage will be composited onto the Background Roll.

If a given pixel in the Background Composite matte is fully white, the same pixel in the output of this step will be taken fully from the previous stage.

If a given pixel in the Background Composite matte is fully black, the same pixel in the output of this step will be taken fully from the Background roll.

If a given pixel in the Background Composite matte is a gray value, the same pixel in the output of this step will be a mixture of the previous stage and the Background rolls with the mixture being dependent upon the actual gray value.

Save

The matte chosen at this stage will be output to disk.

In the RENDER/Output Options dialog you can choose whether or not Elastic Reality will imbed the selected matte directly into the output images, or will save the selected matte as a separate stream of images.

And, What Are They Good For?

This section describes just a few of the basic things you can use the matting capabilities in Elastic Reality for.

This is by no means a complete list - it is intended to get you thinking about the different kinds of effects which various matting options enable.

A little imagination and experimentation will yield many other uses for Elastic Reality due to its flexible matting architecture.

Linear Matte chosen in Background Composite
Images inserted into A Roll
Images inserted into Background Roll

Without defining any shapes at all, this is a simple cross dissolve.

If you're working on a still project, then instead of the Background roll and using the Background Composite, put your picture in the B Roll and use the linear Morph Composite. This will run a lot faster because the B Roll image (if it's a still) will be kept in memory.

Matte Roll chosen in Morph Composite
Images inserted into A Roll
Images inserted into B Roll

This is a cool variation on the standard morph.

The images in the Matte Roll will control how the intermediate A and B Rolls are put together.

For example, if the Matte Roll has an animation of a white image wiping downwards to a black image, the morph will appear to start at the top of the image and work its way downward. That is, the morph would start with someone's head and progress downwards to their toes.

A Roll or B Roll chosen in Background Composite
Images inserted into A Roll
Images inserted into B Roll

Another variation on the standard morph useful if the source images you're working with have self-contained pre-created mattes of their own.

If a source image has a pre-defined matte of its own, it will be warped along with the rest of the image. The warped matte will always coincide with the warped image. You can create cool compositing effects such as morphing smoke or clouds or other effects which perfectly defined mattes (since the mattes you're using were your original mattes).

All Groups chosen in Morph Composite
Images inserted into A Roll
Images inserted into B Roll

This is the basic "advanced" morph. Advanced, in that you're using the motion and transparency capabilities of Elastic Reality.

The All Groups matting option creates a matte in which each group can have its own transparency controls.

All Groups chosen in Background Composite
Images inserted into A Roll
Images inserted into B Roll if a morph is desired

By putting the All Groups matte into the Background Composite slot, you can completely control how a morph or warp is composited into the background on a shape-by-shape basis.

This adds a lot of possibilities in creating TransJammer style digital video effects.

Matte Roll chosen in Background Composite
Images inserted into A Roll
Images inserted into B Roll if a morph is desired

This is how you can use images of your own choosing (or creation) to wipe on or off your effects from a background.

Matte Sources Defined - NONE

This matte source produces no matte.

If it is selected at a particular matting stage, the matting stage is skipped.

Matte Sources Defined - All Groups

This is one of the most powerful matte sources in ER.

The matte is generated based upon the transparency curve values of every shape's group.

If this mode is selected, some extra execution time will be consumed by the matte generation process.

This matte is affected by the state of the "Smooth All Groups Matte" check box located towards the bottom of the RENDER/Render Options dialog matting area.

When Smooth All Groups Matte is not checked:

You get a "Sharp Matte." This is explained below.

Open shapes do not contribute to sharp mattes. Recall, that user edges can be used to "close" an open shape for the purposes of matting.

The matte is created by filling the entire matte with the transparency value defined by the default group.

Then, the interior of each closed shape is filled with the transparency value defined by the group to which each shape belongs.

The interface between areas of one transparency level and another is abrupt (sharp) though it is anti-aliased.

When Smooth All Groups Matte is checked

You get a "smooth" matte. This is really cool and is explained below.

Look at the room around you and imagine that it was draped with a huge drop cloth.
Imagine that the furniture in the room are the shapes in your Elastic Reality document.

Each piece of furniture has a height.

For example, a chair is higher than the floor.

In ER, every shape is in a group, and every group has both a depth and a transparency value. Group depth continues to define which shape will be drawn in front of another overlapping shape. And, the shape's transparency value on a given frame defines its "height" with respect to the furniture analogy. (I.E.: Full transparency is twice as high as half transparency, etc.)

Imagine the graceful arcs the drop cloth makes as it settles from one height to another.

This is the "smooth" All Groups Matte. It creates beautifully smooth mattes which can blend rolls imperceptibly.

An example of its use is in the FACES.ER project provided with Elastic Reality. Try rendering a preview of the middle frame of this project with the Smooth All Groups Matte box checked and unchecked.

With the box checked, the full intensity of the woman's mouth will blend imperceptibly into the surrounding morph. With the box unchecked, the full intensity of the woman's mouth will have a much sharper transition into the surrounding morph.

Unlike the sharp All Groups matte, closed ***and open*** shapes both contribute to the smooth All Groups

matte.

You can directly control the transparency ramp around a particular shape by appropriately setting the transparency of the shapes nearby.

Matte Sources Defined - Default Group

This matte source uses the transparency value defined for the default group for the entire matte.

If you want to create a solid matte (no area is more or less transparent than any other) that varies over time, create the variance you wish as the transparency curve of the default group. These values drive the Default Group matte.

This is the easiest way to create a straightforward dissolve like the Linear matte mode with the exception that you can insert an ease-in/ease-out by placing the appropriate (gentle "s" shaped) curve in the transparency portion of the default group.

Matte Sources Defined - Linear

This matte source produces a constant level (all areas of the matte have the same intensity) matte. The intensity of the matte is based entirely on the current frame's place within the duration of the entire effect.

That is, the middle frame out of a 10 frame effect will have an intensity of one half (equal weighting). The 7th frame (3rd from the end) of 10 will have an intensity of 30 percent. The 2nd frame (8th from the end) of 10 will have an intensity of 80 percent, etc.

Matte Sources Defined - Cookie Cut

The Cookie Cut Matte is an extremely powerful tool, especially for use during the Background Composite stage.

Using it, any closed shape can create its own full intensity soft-edged matte.

Open shapes do not contribute to Cookie Cut Mattes.

Closed shapes within other closed shapes do not contribute to the Cookie Cut Matte (unless the outer shape is excluded from the Cookie Cut Matte, see next paragraph).

In the WINDOW/Shape Options dialog, you can specify whether or not any given shape will contribute to a Cookie Cut Matte. This allows you set up shapes (surrounding a shape of interest) which don't prevent you from automatically creating a matte from the shape of interest.

There is also a global disable of barrier shapes (shapes which are not joined to others) located in the RENDER/Render Options dialog.

Matte Sources Defined - A Roll Matte
Matte Sources Defined - B Roll Matte

If the images in the specified roll have internally defined mattes, they will be used in a given matting stage.

Many advanced imaging products are able to produce picture files which contain, in addition to red, green, and blue information, a self-contained matte.

Elastic Reality, thanks to its imbedded HIIP technology, is able to extract mattes contained in many of the image file formats which also allow internal mattes.

The extracted matte will get warped along with the image it came from allowing it to continue to be used as a matte even after the warping process.

Matte Sources Defined - Matte Roll

Images in the matte roll are read in, converted to gray scale, and are used as this matte source.

This can make for some extraordinary effects.

For example, you can use this type of matte source in the Background Composite to cause the finished effects to be composited in, around, or behind a background roll.

You could use this matte source in the Morph Composite and get morphs that appear to start at someone's head, and wipe down their bodies to their toes. This would be done by defining a Matte Roll as a series of gray scale images starting with full black and progressing towards full white (along a vertical path down the image).

White areas in the Matte Roll images correspond to full source A. Black areas in the Matte Roll correspond to full source B.

Matte Sources Defined - 50 Percent Matte

This is a special purpose matte source which creates a constant half intensity matte.

While customers have found this useful for rough tests of effects because it combines both of its sources evenly, it generally isn't used for finished work.

User Edge Tool

 The User Edge Tool is used to connect shapes together at correspondence points.

User edges are not frequently used - but they add a considerable sense of closure to the product.

In fact, closure is what they're used for most often - closing open shapes for the purpose of matting.

As discussed in the description of the matting sources, open shapes do not contribute to Cookie Cut and Sharp mattes.

In those cases where you must an open shape in these types of mattes, you can link the end-points of the open shape to other shapes such that you end up with a closed shape (if you consider all the connected shapes, the open shape, and the user edges together).

Clicking on the User Edge Tool causes all of the correspondence points in the roll you're currently editing to become visible at once.

User edges are created only between correspondence points.

To create an edge, click and hold the primary mouse button on the correspondence point you wish to begin the edge. Drag the mouse to the correspondence point you wish to end the edge and release the primary mouse button.

As you drag the mouse, correspondence points will change color when the mouse is over them.

To remove a user edge, hold down the CTRL key when clicking on the edge to be removed with the primary mouse button.

The Render Menu

This menu contains commands which cause preview and full renderings to take place, as well as bring up modal dialogs which control rendering and output options.

Related Commands:
Render Preview
Render Full Effect

Render Options
Output Options

Render TransJammer Sample

RENDER/Render Preview

This command causes the currently selected frame to be rendered and displayed.

The currently selected frame is defined by the scroll bar along the bottom of the Elastic Reality window.

When the preview rendering is completed, you can toggle between the preview rendering and your source images by clicking the button marked "View Preview" at the top right of the Elastic Reality window or by pressing SHIFT+P.

Keyboard: CTRL+P

RENDER/Render Full Effect

The entire effect, as defined in RENDER/Output Options, is rendered.

Note: Elastic Reality, though more computationally complex than most flight simulators, multitasks under Windows better than some word processors.

Feel free to minimize Elastic Reality while a full rendering is underway so that you can move on to other work while Elastic Reality does its thing in the background.

Of course, Windows is a cooperative multitasking system. This means that while Elastic Reality is designed to multitask very well, is can't improve the multitasking performance of other applications.

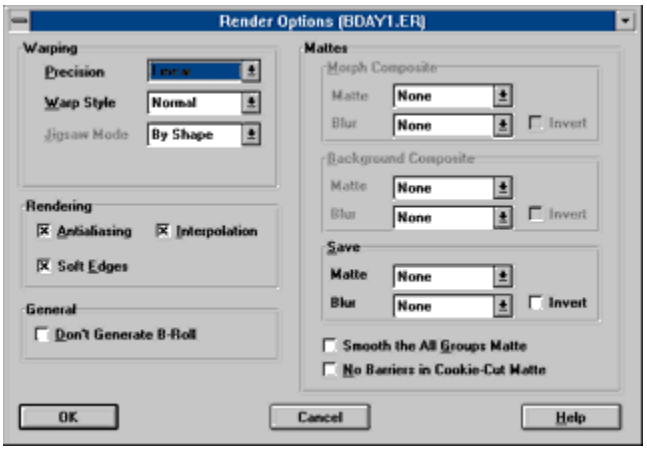
RENDER/Render Options

The Render Options dialog defines many parameters governing the effect as a whole.

The dialog is divided into controls governing Warping, Matting, Rendering, and General options.

The values you set here are used for both preview renders and for full renders.

In the image below, you can click on the area that you want more information about, or click on the highlighted words above.



RENDER/Render Options/Mattes Area

This section of the Render Options dialog allows you to define which matting source will be used in each of the three matting stages.

At each matting stage, you can choose four levels of blurring to be applied to the selected matte source. These are: "none," "low," "medium," and "high."

Also at each matting stage you can choose to invert the selected matte source.

Recall that a matte is a picture which decides how two other pictures will be mixed. Inverting the matte, inverts the relative amount of each picture that is used to create the final image.

If you had, for example, a matte defined around an object, then using the matte (without inverting it) will cause the object to show through the composited image. If you invert this matte, the object's surroundings would show through while the area within the object would be taken from another image.

To preview a specific matte, select it in the Save Matte stage, render a preview, then use the Show Matte command. Remember to remove the matte selection from the Save Matte stage after you're done.

Distinct from any of the specific matting stages, there are two controls which can also modify how mattes are handled.

The "Smooth All Groups Matte" is only accessible if the All Groups matte source is used in at least one of the matting stages. This check box decides whether you get a "sharp" or "smooth" matte from the All Groups matte source. See Matte Sources Defined - All Groups for more information.

The "No Barriers in Cookie Cut Matte" is only accessible if the Cookie Cut matte source is used in at least one of the matting stages. This check box can globally disallow barrier shapes (shapes that are not joined to others) from contributing the the Cookie Cut matte. See Matte Sources Define - Cookie Cut for more information.

The SE/File/Accept
The SE/File/Cancel

Choosing either of these menu commands will exit the Sequence Editor and returns you to an Elastic Reality document.

If you choose Accept, any changes you might have made to any of the rolls will be reflected in ER.

If you choose Cancel, any changes you might have made to any of the rolls will ***not*** be reflected in ER.

Keyboard Shortcuts And Accelerators

Tool Selection:

S	Select Tool
R	Reshape Tool
C	Correspondence Tool
E	User Edge Tool
M	Move Tool
Z	Zoom Tool
I	Zoom Tool (In)
O	Zoom Tool (Out)
F	Freehand Tool
P	Pen Tool
SHIFT+S	Square Tool
SHIFT+C	Circle Tool

Menu Accelerators: Elastic Reality Document Windows

FILE Menu

CTRL+N	New document
CTRL+O	Open existing document
CTRL+F4	Close document
CTRL+S	Save document to disk
ALT+F4	Exit Elastic Reality
CTRL+B	Display Brightness and Contrast dialog
CTRL+U	Display GUI dialog

EDIT Menu

CTRL+Z	Undo a shape change
CTRL+X	Cut selected shapes to clipboard
CTRL+C	Copy selected shapes to clipboard
CTRL+V	Paste shapes from clipboard
DEL	Remove selected shapes
CTRL+A	Select All Shapes

SHAPE Menu

J	Joint two selected shapes
SHIFT+J	Unjoin two selected shapes

Render Menu

CTRL+P	Render Preview
CTRL+R	Display Render Options dialog
CTRL+I	Display Output Options dialog

WINDOW Menu

CTRL+G	Display Groups dialog
CTRL+T	Display Motion and Transparency Editor dialog
CTRL+K	Display Key Frame Control dialog
CTRL+W	Display Wireframe Preview

CTRL+H	Displays Shape Options dialog
CTRL+F	Display Freehand Precision dialog
CTRL+L	Display Grid Control dialog
CTRL+M	Displays The Current Matte

HELP Menu

F1	Displays Online Help Contents

Other Handy Keys

1	Displays A Roll and A Shapes
2	Displays Both Rolls and Shapes
3	Displays B Roll and B Shapes
+	Increase edge density
-	Decrease edge density
HOME	Jump to first frame
END	Jump to last frame
PAGE UP	Jump to previous frame
PAGE DOWN	Jump to next frame
L-ARROW	scrolls image left
R-ARROW	scrolls image right
D-ARROW	scrolls image down
U-ARROW	scrolls image up
ESC	Undo mouse operation in progress
SHIFT+P	Toggles display of the Preview image
DEL	Deletes the current shape in most modes

Menu Accelerators: Motion and Transparency Editor

EDIT Menu

CTRL+C	Copy current curve to private clipboard
CTRL+V	Overwrite current curve from private clipboard
CTRL+R	Reset current curve

GRAPH Menu

CTRL+M	Edit the motion curve
CTRL+T	Edit the transparency curve
CTRL+S	Set spline mode
CTRL+L	Set linear mode
CTRL+A	Clamp motion curve to 0 and 100 percent

VIEW Menu

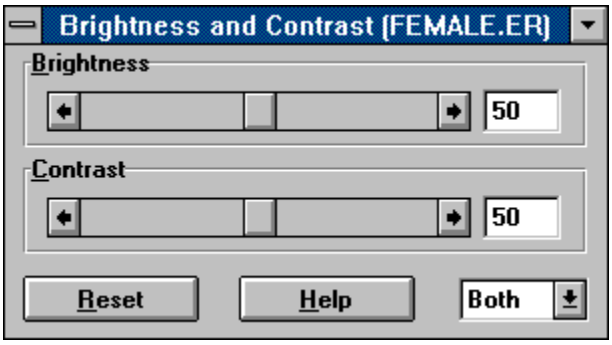
F	View time as frames

%	View time as percentage
I	Zoom in along time axis
O	Zoom out along time axis

FILE/PREFERENCES/Brightness and Contrast

This command brings up the Brightness and Contrast dialog.

This dialog is a convenience feature which allows you to adjust the brightness and contrast of the images in the A Roll, B Roll, or both.



Click on the controls in the above image for quick help. Or, read on for more details.

This is helpful because the images you may need to work with will not always be crisply lit, allowing you to easily see the details you wish to track.

Any changes to the brightness and contrast of the image are for user-interface purposes only. These changes do not affect the actual images you're working with.

The Brightness and Contrast dialog is non-modal. If more than one Elastic Reality document is open, this dialog will automatically be updated to reflect the brightness and contrast values for the document which currently has input focus.

You decide which roll to effect using the drop box in the bottom right corner of the dialog. Its values can be one of: A Roll, B Roll, or Both.

The button marked "Reset" will reset both the brightness and contrast values for the selected rolls to a middle (default) value of "50".

See Also: FILE/PREFERENCES/GUI

RENDER/Render Options/Warping Area

This section of the RENDER/Render Options dialog allows you to define certain parameters which affect the mathematical processes inside Elastic Reality's warping kernel.

Within this area, you can define:

Precision — this sets the mathematical precision of the warping kernel.

Warp Style — this sets a basic "style" parameter within the warping kernel.

Jigsaw Mode — if the Warp Style is set to Jigsaw, this sets the granularity of the jigsaw.

RENDER/Render Options/Warping Precision

This parameter controls the mathematical precision with which Elastic Reality's warping kernel operates.

The settings for this parameter range from Linear to Super High.

Execution time and memory requirements are directly affected by this setting.

The Linear setting operates the fastest and uses the least amount of memory during execution. The Linear setting is great for quick tests and is perfectly adequate for many finished projects.

The settings of Low, and Medium, provide benefits in warping accuracy with relatively little penalty in execution time or memory requirements.

However, because the High setting provides still greater benefits at (again) relatively little additional penalty in terms of execution time or memory requirements, most professional users use the High setting exclusively.

The Very High and Super High settings add execution time and increase the memory requirements of the rendering but do provide additional smoothness in rendering.

In almost all cases, the High setting is the recommended setting for professional finished work.

But, if you've got a client who insists that he can hear the difference between copper and gold speaker wire and is absolutely intolerant of anything but the "best for his money", hey - knock yourself out.

RENDER/Render Options/Warping Style

Elastic Reality provides four types of warping styles. Aspects of the rendering which are affected by "style" are principally how the outer edge of the image is handled and, how areas of the image outside any closed shapes are handled.

Each style offers certain advantages for creating some effects. The styles are:

Normal — Most simple warping and morphing effects can use this style.

In this style, shapes cannot cross into or be placed in the margin.

Areas of the image outside any closed shapes will be processed in the obvious way.

Convex Hull — To our knowledge, this style is never used. The ability to create convex hull effects was a by-product of the Cookie Cut style and therefore "free". It remains in the product on the off chance that someone may find it useful. Here's to wishful thinking.

In this style, shapes can use the margin freely.

After the warping calculations are complete, when rendering the warped image begins, the warped image will be filled with black up to the convex hull of each closed shape.

In the briefest of terms, a convex hull is the path around the outside of a shape chosen in such a way that the curvature of the path never changes sign. In other words, the path always turns in one and only one direction.

A convex hull of a shape shaped like a zero ("0") looks like an oval.

A convex hull of a shape shaped like an eight ("8") also looks like an oval.

Cookie Cut — This style is often used internally in the form of the Cookie Cut matte source.

After the warping calculations are complete, when rendering the warped image begins, the warped image will be filled with black up to the ***exact edge*** of each closed shape.

In this style, shapes can use the margin freely.

To get the benefit of using Cookie Cut style (being able to use the margins freely) without the cookie cutting, surround the entire image (in the margin) with a shape.

Jigsaw — This style is great for TransJammer effects and compositing applications.

In it, each shape or each group (as determined by the Jigsaw Mode, immediately below the Style drop box) is treated as a separate warp or morph.

This means that shape definitions can overlap by as much as desired. That's one of the reasons this Style is useful for TransJammer effects. Many TransJammer effects are based upon many tightly fitting shapes flying apart or coming together. Using the Jigsaw style, overlap the shape definitions by a fraction of a pixel to ensure a perfect matte (without microfractures between the shapes).

A by-product of being able to overlap shapes is that this style allows you to create multiple copies of parts of the image (by completely overlapping the source shape).

Jigsaw by shape places each and every shape in its own layer...distorting as per the difference between the source shape and the destination shape. ***This is what makes ER's fanciest compositing tricks possible.***

Jigsaw by group places each and every group in its own layer, distorting all the shapes in each group together. This, in effect, combines the cookie cut style with the ability to overlap and mass-duplicate shapes.

Jigsaw mode extends Elastic Reality far far beyond traditional warping and morphing effect. Experiments with it will be well rewarded.

After the warping calculations are complete, when rendering the warped image begins, the warped image will be filled with black up to the exact edge of each closed shape.

In this style, shapes can use the margin freely.

To get the benefit of using the Jigsaw style (being able to use the margins freely and overlap/duplicate shapes) without the cookie cutting, surround the entire image (in the margin) with a shape.

Note: There is a fifth style called "Fixed" available in our Silicon Graphics product. It is extremely similar to the Normal style. So similar in fact, that no one ever uses it. Therefore it has been removed from the Windows product and will probably be removed from the SGI product as well.

In the unlikely case that an SGI project file is read which uses the "Fixed" style, it will be converted to use the Normal style automatically.

RENDER/Render Options/General Options Area

Currently, the only option in this area is: ***Don't Generate B Roll***.

Accessible when working on Morph projects (ie: projects with both an A and B Roll), it will disable the handling of the B Roll entirely, treating the project as if it were a warp.

This makes the creation of some complex warping effects easier.

When creating a warping effect, you usually define only the A Roll and place both source and destination shapes in that roll. With both sources and destinations in the same roll, the user interface can become cluttered.

At your option, you can load the same images into both the A and B Rolls, creating source shapes in the A Roll and destination shapes in the B Roll (as if you were working on a morph). The benefit of this being that the source and destination shapes will be viewable in separate rolls (making the user interface less busy).

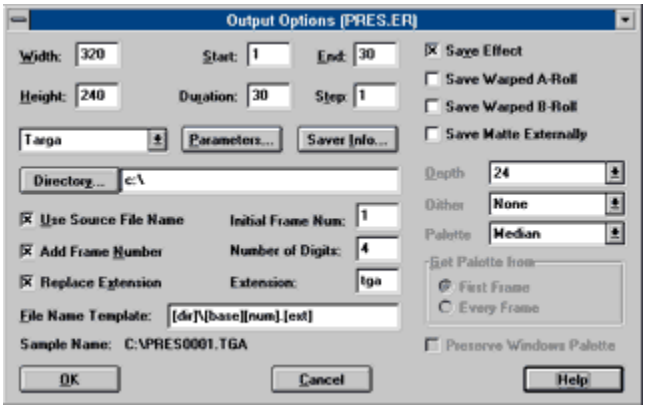
Then, to have the project treated as a warp (as if the source and destination shapes were in the same roll), check the ***Don't Generate B Roll*** check box.

RENDER/Output Options

The modal Output Options dialog is used to set all the user definable options concerning how Elastic Reality will save finished effects (and, what portion of the full effect will be rendered).

This dialog can be brought up using the CTRL+i keyboard shortcut or from the RENDER menu.

In the image below, click on the area of the dialog you'd like help for, or click on the item you wish in the ***See Also*** listing.



See Also:
Setting Output Width And Height
Setting Output Format
Setting Output Directory
Defining Frames To Be Rendered
Defining Output File Name Template

Additional Image Saving Options
Setting Color Reduction Options

RENDER/Output Options/Setting Output Width And Height

In the Output Options dialog, you can specify the width and height of the images to be produced by Elastic Reality when the current project is rendered using RENDER/Render Full Effect.

Since Elastic Reality is resolution independent, the width and height that you specify need not be the same as the sizes of the original images you're working with.

If the sizes you specify are different from the sizes of the original images, Elastic Reality will automatically scale the incoming images to match the size you specify.

This allows you to create your effect at one resolution, and then render it at another. For example, you might be working on full broadcast overscanned sized images (720 by 486 for NTSC) but set an output size of something smaller (like the 160 by 120 required for full motion video on some Windows machines).

If you specify a width of 0, the width and height will be reset to the original image size.

Original image size is defined as the size of the first frame of the A Roll.

If you change the width, the height will automatically be adjusted to preserve the original image aspect. If you wish to override the automatically chosen height with a different value, simply enter it into the height text box.

> You can use FILE/PREFERENCES/Image to set still another resolution which will be used for the graphical user interface. The size you specify with that dialog only affects the GUI and preview renders.

RENDER/Output Options/Setting Output Directory

You can specify into which directory, finished frames from the current project will be stored.

To browse your disk drives, click the button marked ***Directory***. This will cause a modal dialog to appear which will allow you to navigate around your disk drives using the customary controls.

Alternatively, you can directly enter the desired output directory by typing its path in the space provided to the right of the button marked ***Directory.***

ER will attempt to verify that the directory you've specified actually exists. If the directory does not exist, it will ask you if you want it created.

If the directory you've specified does not exist and you don't elect to create it, Elastic Reality will warn you of such, and ask if that's what you really had in mind.

RENDER/Output Options/Setting Output Format

Elastic Reality is a HIIP enabled application.

That means, image file formats are automatically detected on input. For output, you simply have to select the image file format that will be used for saving.

The Output Options dialog contains three controls which affect output format. These are: the format selection drop-down list, a button marked ***Parameters,*** and a button marked ***Saver Info.***

The format selection drop-down list is operated in the usual way. Clicking the primary mouse button within its borders causes it to expand to display a scrollable list of output file format choices. You can also use the keyboard to select the desired file format when the drop-down list box has input focus (its interior will be filled with a color).

Based upon the file format you select, the button marked ***Parameters*** may or may not be enabled. If the selected file format has supported options, you can control these by selecting button if it is enabled. If the button is not enabled, it means that the selected file format does not offer any user selectable options.

An example of a file format which allows you to enter options is the JPEG file format. pressing the button marked ***Parameters*** when the JPEG file format is selected brings up a modal dialog which allows you to enter the JPEG ***Quality*** setting.

The button marked ***Saver Info*** brings up a dialog which gives additional information about the selected file format's supported capabilities.

RENDER/Output Options/Defining Frames To Be Rendered

Using the four controls marked ***Start, End, Duration,*** and ***Step,*** you specify which frames of the current project will be rendered when you choose RENDER/Render Full Effect.

If you're working on a still project, you set the length of the project using the ***Duration*** text box. If you're working on a moving project, the maximum number of frames in the rolls you've specified defines the length of the project for you (and the ***Duration*** text box is inaccessible).

Using the ***Start*** and ***End*** text boxes, you specify which frames of the project are to be rendered.

If the ***Start*** and ***End*** text boxes correspond to the first and last frames of the project, the entire project will be rendered.

If, on the other hand, they don't refer to the first and last frames, the specified subset of the project will be rendered.

Note: ER's results are completely repeatable. If, for example, you misplace a frame out of the middle of an effect, you can re-render that frame (and that frame only) so long as nothing else in the project has changed.

Using the ***Step*** text box, you can automatically skip frames at a regular interval. A ***Step*** value of 1 means every frame from the ***Start*** to the ***End*** (inclusive) will be rendered. A value of 2 means every second frame, and so on.

This is handy for testing long effects without having to render each and every frame.

While there are better ways to perform the following: this can also be used to "slow down" a full motion effect for correct playback slower speeds. For example, if you've got footage shot at 30 frames-per-second, you can render out every other frame ***(Skip*** of 2) to run the correct length of time on a 15 frame-per-second playback device.

Moving Project - What Is It?
Still Project - What Is it?

A moving project is a project in which you've specified more than one image in a particular roll. It's called moving because the multiple images typically represent frames from moving footage.

A still project is a project in which each defined roll has exactly one image.
Since there's only one incoming image, it must represent something that's not moving, therefore "still".

Moving projects can have key frames. Still projects cannot.

The length of a moving project is defined by the number of images you place in each roll. The length of a still project is defined in the RENDER/Output Options dialog (Duration text box).

Read Me! Tips You Should Know

Elastic Reality, for all its power and flexibility, is quite straightforward to use. Straightforward, that is, provided that you're given some pointers to help get you started.

Please take the time to read each of the following sections as they contain tips which will get you started on the right track.

The right time to read these sections is after you've done the tutorials and are ready to strike off on your own creating Elastic Reality effects.

How Many Shapes Should I Draw?

Many beginning users of Elastic Reality don't have a feeling for how many shapes they should draw.

If you're creating a TransJammer effect (or DVE), skip to 2.

1. When creating warping or morphing effects:

The answer to this is not a particular number. But rather, it depends upon the contents of the pictures you're manipulating.

In the briefest of terms, you should have a shape to track most or all of the visually interesting features of the images you're working with.

If you're doing a morph between two faces, for example, many beginning users draw shapes only around both heads and stop.

That's only enough to force the outline of both heads to coincide throughout the effect but does nothing to line up the other visually interesting features of faces, including the mouth, eyes, nose, hair line and prominent facial wrinkles.

Another general rule for knowing when to add a shape: If you can ***SEE*** an obvious cross dissolve, you can probably eliminate it by drawing a shape over the features involved.

2. When creating TransJammer (or Digital Video) effects:

Typically, the shapes used in video transitions ***don't*** have any relationship to the pictures you're working with. For example, a "barn doors" transition has two rectangles revolving open no matter what pictures you're transitioning from or to.

Therefore, for creating DVEs or TransJammer style effects, the "right" number of shapes to draw usually depends solely on the effect you're trying to create.

Always Inspect/Adjust Correspondence Points

When you draw a shape, Elastic Reality always provides it with four correspondence points by default.

ER cannot know where the "right" place is to place these points so it uses a set of rules. These are:

- For shapes drawn with the circle tool, default correspondence point placement is at the diagonals (45, 135, -135, and -45 degrees).
- For shapes drawn with the square tool, default correspondence point placement is at the corners.
- For open shapes drawn with the pen or freehand tools, default placement is one at either end of the shape, with the other two spaced evenly between them.
- For closed shapes drawn with the pen or freehand tools, default placement is one at the top-most position on the shape, with the other three spaced evenly about the perimeter.

When joining two shapes, remember that you're joining two sets of default correspondence point placements.

It is therefore critical to achieving high quality results that you check the joined pair in correspondence mode to make sure that the mapping of one shape to the other makes sense.

Increase edge density as necessary to achieve a smooth fit.

Add additional correspondence points as necessary if there are specific details you want to line up.

Managing your correspondence information is easily overlooked. So don't.

Here's a simple example which should illustrate how important it is to ensure appropriate placement of correspondence points:

> Suppose you're morphing between two clock faces.
>
> On each clock, suppose the correspondence points are located at the 12, 3, 6, and 9 o'clock positions. This means that the 12, 3, 6 and 9 o'clock positions will line up perfectly since their locations along the perimeter of each clock face are directly linked to one another.
>
> This is enough to ensure that the 1 o'clock and 5 o'clock positions (and the rest of the clock face, for that matter, where there ***aren't*** correspondence points) will also line up.
>
> In effect, lining up the four default correspondence points at known and identifiable landmarks released you from having to explicitly establish a correspondence relationship along every point of each shape's perimeter.
>
> Now, imagine setting up one clock face as before, with correspondence points at the 12, 3, 6, and 9 o'clock positions. On the other clock, move the correspondence points so that they rest near the 1, 4, 6 and 9 o'clock positions.
>
> Now when you render the full effect, you'll see that everywhere between 6 and 9 o'clock comes together as before. But, the area from 9 to 12 o'clock on one clock maps to the area between 9 and 1 o'clock on the other clock...and the area between 3 and 6 o'clock on the first clock maps to the area between 4 and 6.

This shows both expansion and contraction along the second shape's perimeter. The 9 to 12 area expands to the 9 to 1 area on the second clock. The 3 to 6 area contracts to the 4 to 6 area on the second clock.

While effects like this are sometimes desired for artistic reasons, you can readily see how poorly aligned correspondence points would give fits to a clock maker trying to make a commercial about this year's new line of clocks.

Note: This tip discusses how important it is to check the correspondence relationship between two joined shapes. Proper alignment dramatically improves results.

Additionally, it is important to check correspondence relationships amongst many shapes, especially if multiple shapes in the same roll are close to each other. See Use Wireframe Preview To Look For Shearing for an important tip on how to do this.

Closed Shapes - What Are They?

A closed shape is one in which the start and end points are one and the same. For example, circles and squares.

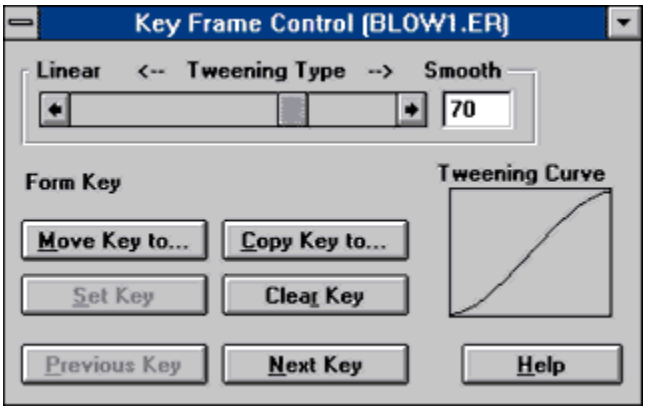
Open Shapes - What Are They?

Open shapes are ones in which the starting and ending points are NOT the same. Example: lines and squiggles

WINDOW/Key Frame Control...

The Key Frame Control dialog is displayed when this command is chosen or you press CTRL+K on your keyboard when an Elastic Reality document has input focus.

The Key Frame Control dialog is only accessible when you're working on a moving project.



Click on the controls in the above image for quick help. Or, read on for information on a more detailed level.

What Are Key Frames?

When working on moving projects, each frame in which you modify a shape's form or correspondence information becomes a key frame.

For each shape, non-key frames (in-between two key frames) take the shape's form and correspondence information from neighboring key frames.

Note that key frames are unique to each and every shape. That is, a frame that is a key frame for one shape, may not be a key frame for another shape.

What Are They Good For?

Key frames allow you to control a shape's form and correspondence information (over many frames) without having to set that information on each and every frame. Instead, a few ***key*** frames control many "tween" frames.

This means you can track or create complex motion over time without having to edit the shapes on each and every frame.

What Information Is Key Framed?

On a per-shape basis, key frame information is kept for a shape's form (its location and physical shape) as well as its correspondence information.

Typically, correspondence information isn't adjusted from frame to frame so, in general, there'll be just one correspondence key frame per shape.

On the other hand, any shape that is tracking an object in motion will require more than one form key frame.

How Are Key Frames Made?

Key frames are made in one of six ways:

1. Form keys are made when you modify the form or location of a shape using the Select Tool.

2. Form keys are made when you modify the shape's form using the Reshape Tool.

3. Correspondence keys are made when you modify a shape's correspondence information when using the Correspondence Tool.

4. Clicking the primary mouse button over the "Set Key" button in the WINDOW/Key Frame Control dialog creates a form key for the currently selected shape when in Select or Reshape mode.

   When in Correspondence mode, clicking the "Set Key" button causes the selected shape's correspondence information to become keyed on the current frame.

5. Clicking the primary mouse button over the "Move Key" button in the WINDOW/Key Frame Control dialog when in Select or Reshape mode. Note that this button is not accessible if the selected shape is not already form keyed on the current frame.

   Similarly, when in Correspondence mode, clicking the "Move Key" button makes appropriate change to the shape's correspondence information.

   The effect of this button is to remove the form or correspondence key (depending upon your current tool) from the current frame and added to the specified frame.

6. "Copy Key" in the WINDOW/Key Frame Control dialog is similar to "Move Key" except that the current key frame information is not destroyed.

How Are Key Frames Removed?

Key frames are removed only from the WINDOW/Key Frame Control dialog using the "Clear Key" button.

Note Every shape must have at least one key frame for both form and correspondence.

When you remove a key frame, the shape's form or correspondence information (depending upon the type of key frame you've removed) is re-tweened based upon neighboring key frames.

How Do You Recognize Key Frames?

When the Select Tool is active, form key frames can be recognized as those frames in which the "handles" of the shape's bounding box are drawn in white. On non-key frames, the eight handles are drawn in the same color as the shape.

When the Reshape Tool is active, form key frames can be recognized as those frames in which the control points are drawn in white. On non-key frames, the control points are drawn in same color as the shape. On both key and non-key frames, the selected control point is drawn in green.

In Correspondence Mode, correspondence key frames can be recognized as those frames in which the correspondence points are drawn in white. On non-key frames, the correspondence points are drawn in the same color as the shape. On both key and non-key frames, selected correspondence points are drawn in green.

Additionally, both form and correspondence keys are indicated in the Key Frame Control dialog, if it is currently displayed. On non-key frames, the box marked "Tweening Curve" is left blank and the "Tweening Type" control is inactive.

Form key frames may also be spotted in Wireframe preview. The Wireframe Preview dialog contains a check box which, if checked, causes Elastic Reality to draw for key frames in a stand-out color.

Moving From Key Frame To Key Frame

To move directly from one key frame (of the currently selected shape) to another, use the "Next Key" and "Previous Key" buttons in the Key Frame Control dialog.

Or, you can advance the document from one frame to the next, recognizing those frames on which the currently selected shape is keyed using the means described above.

Using Form Key Frames To Control Motion

Form keys explicitly control the form and motion of each shape.

If you're tracking the motion of an object, adjust each shape (ie: create key frames) every 30 frames or so. Then check the middle frame and adjust it is necessary, using a method of repeated halving as needed.

You can track many types of non-linear motion with fewer key frames by using the Tweening Type scroll bar, found in the Key Frame Control dialog.

What's The "Tweening Type" And "Tweening Curve" Do?

Remember the convoluted explanation of how to control a shape's acceleration given in the section on Motion and Transparency?

Here's some additional information they may clarify your understanding.

First let's restate some important points:

> The Motion portion of the Motion and Transparency Editor really controls in level of interpolation between a shape's source and destination.
>
> In a still project, controlling interpolation between source and destination is the same as controlling its motion (hence the historically named Motion and Transparency Editor).
>
> This is because still projects have one and only one key frame.

In a moving project, each shape can have more than one key frame. Each shape, whether it is a source or destination, is "tweened" from key frame to key frame.

On any given frame, the Motion and Transparency editor's Motion curve dictates how a source shape (on that frame) will be "tweened" with its destination shape (if it has one) on that frame.

So, there's two types of "tweening" being applied to shapes in a moving project.

1. Each shape is tweened between its own key frames. This tweening is what is controlled by the "Tweening Type" scroll bar in the Key Frame Control dialog.

2. ***Then,*** each joined shape is tweened with its mate. This is the tweening controlled by the Motion curve in the Motion and Transparency Editor.

When the Tweening Type scroll bar is set to its left most position (marked "Linear" and having a value of 0), the interpolation of the currently selected shape ***to its next key frame*** is a simple linear tween.

When the Tweening Type scroll bar is set to its right most position (marked "Smooth" and having a value of 100), the interpolation of the currently selected shape ***to its next key frame*** has an ease-out and ease-in represented in the curve shown in the Tweening Curve display.

Note: The setting for Tweening Type effects how this shape will be tweened to its ***next*** key frame.

Select Mode

 Select mode is entered either by clicking the primary mouse button over the select tool icon (shown here) or by pressing "s" on the keyboard when an Elastic Reality document has keyboard input focus.

Select mode is used for many purposes.

Selected shapes can be modified (and a form key created) in the following ways:

- You can drag selected shapes to a new location by clicking and holding the primary mouse button anywhere on one of the shapes and dragging them to a new location.

- You can resize selected shapes by clicking and holding the primary mouse button on one of the "handles" which are drawn in shape's select box. Dragging the handle to a new location causes the selected shapes to be rescaled to fit the new select box.

- If you resize shapes with the SHIFT key held down, the aspect of the original shapes will be preserved.

- You can rotate selected shapes by clicking and holding the primary mouse button on one of the corner "handles" drawn in the shapes select box and holding down the CTRL key.

Selected shapes can be cut, copied and deleted.

And, for many of Elastic Reality's non-modal dialogs, shape selection is what determines which shape is reflected in the dialog's information.

When using the Select tool to modify a shape's form, you can make use of the Snap To Grid mode to help in creating shapes with a specific alignment or spacing.

When Snap To Grid is active:

- If you select the shape itself (not its bounding box), you will be able to move the shape only according to the spacing defined in the Grid Control dialog.

- If you select one of the handles on the shape's bounding box, you can resize the shape only according to the spacing defined in the Grid Control dialog.

See Also: Shift Select, WINDOW/Grid Control

Reshape Mode

 Reshape mode is entered either by clicking the primary mouse button over the reshape tool icon (show here) or by pressing the "r" key on your keyboard when an Elastic Reality document has keyboard input focus.

Reshape mode is used to edit the individual control points which define a shape's form. You can also add and delete control points as well as close an open shape, or open a closed shape.

To edit a shape's control points, enter Reshape mode and click the primary mouse button anywhere on the shape you wish to edit. When you do this, the shape's control points will be displayed.

When a control point is selected, a pop-up menu is available with additional options. The operation of this menu is explained in The Reshape Pop Up Menu.

Clicking the primary mouse button on any of the displayed control points causes that control point to show its tangents (if it has any).

Clicking and holding the primary mouse button on the control point itself allows you to drag the control point to a new location.

Note: Dragging a control point to a new location is affected by whether or not Snap To Grid is enabled. When Snap To Grid is off, you can drag the control point anywhere. When Snap To Grid is on, you can drag the control point only according to the grid spacing defined in the Grid Control dialog.

Clicking and holding the primary mouse button on the control point's tangents allows you to edit them.

When editing a control point's tangents, several keyboard qualifiers affect how the edit takes place.

SHIFT Holding the SHIFT key down while editing a control point's tangent allows that tangent to be edited completely independently of the other tangent. This is how sharp corners are made.

CTRL Holding the CTRL key down while editing a control point's tangent allows you to edit the magnitude of that tangent independently of the magnitude of the other tangent. The angle between the tangents is maintained.

CTRL+SHIFT Holding both the CTRL and SHIFT key down while editing a control point's tangent, holds the angle fixed and allows the tangent's magnitude to be adjusted.

NONE Not holding down either of the two keys discussed above while editing a control points tangent causes the magnitude of the other tangent to be slaved to changes in magnitude of the tangent you're editing. The angle between the tangents is maintained.

Reshape mode is also used to add and delete individual control points.

To add a control point, enter Reshape mode. Push the CTRL key on your keyboard and then click the primary mouse button on the exact location you wish a new control point added.

When control points are added, they are automatically constructed so as not to change the overall form of the shape.

To delete a control point, select it by clicking the primary mouse button on it. Then press CTRL+D on your keyboard or make use of the Delete Control Point function in the Reshape Pop-Up menu.

When control points are deleted, the neighboring control points are adjusted to produce as close to the original shape as possible.

Closed shapes must have a minimum of 3 control points.

Open shapes must have a minimum of 2 control points.

When you add or delete a control point on one frame, note that an analogous control point is added to the shape on every other frame.

To open a closed shape, use the pop-up menu option "Break" when the control point at which you wish to break the shape is selected.

To close an open shape, drag one of the shape's ending control points over the other.

Note: You cannot break or close a joined shape.

See Also: Square Tool, Circle Tool, Freehand Tool, Pen Tool, Select Tool, Grid Control

Warping Kernel - What Is It?

Elastic Reality's warping kernel is the cold hard science that makes your reality so elastic.

DVEs - What Are They?

DVE stands for Digital Video Effect.

Cool transitions from one stream of video to another like those provided by TransJammer are examples of DVEs.

Elastic Reality is the desktop's first WYSIWYG (what you see is what you get) DVE generator and because it is resolution independent, it can do DVE style effects to images larger (or smaller) than video resolution.

What Is HIIP?

HIIP is Elastic Reality's Host Independent Imaging Protocol.

It's an amazing set of programs (that run identically on Windows, SGI, Alpha, MIPS, IBM PVS, Macintosh, Power Macintosh, and Amiga computers) that lets Elastic Reality's programmers ignore all issues relating to image file format conversion.

It also frees users of Elastic Reality's products from all worries and hassles associated with image file format conversion and file extension naming.

HIIP is available for licensing to other developers so that they, and their users, can also enjoy the benefits of getting HIIP!

Freehand Mode

 Freehand mode allows you to draw Elastic Reality shapes with the simplicity of using your mouse or digitizing tablet while still retaining the accuracy and precision of Bezier curves.

For many people who have not mastered drawing with Bezier curves, this tool is easier to use than the more precise Pen tool.

To enter Freehand mode, click the primary mouse button over the Freehand tool's icon (shown above) or press "f" on the keyboard when an Elastic Reality document has input focus.

To exit the tool, simply select another tool from the tool palette.

Double clicking the primary mouse button on the Freehand tool's icon brings up the Freehand Precision dialog.

This dialog can also be displayed by pressing CTRL+F on the keyboard when an Elastic Reality document has input focus or by choosing the WINDOW/Freehand Precision menu item.

The Freehand Precision dialog does not need to be displayed in order to use this tool.

To draw shapes in freehand mode, select the mode as described above. Then, depress the primary mouse button over the image area you wish to begin drawing from. Holding the primary mouse button down, trace out the shape you wish to create.

To create a closed shape, release the primary mouse button relatively close to your starting point. If you didn't end the shape close enough to its beginning to cause Elastic Reality to automatically close the shape, then you can click the button marked "Close Shape" in the Freehand Precision dialog.

Elastic Reality adaptively fits a Bezier curve to the curve you drew. Draw a simple curve, and Elastic Reality will fit it with just a few control points. Draw a complex shape, and Elastic Reality automatically selects more control points to reasonably fit it.

If you desire more or less control points than the number that Elastic Reality automatically chose, you can alter this precision by using the similarly named scroll bar in the Freehand Precision dialog.

Moving the scroll box to the left decreases the number of control points used to match the shape you just drew. This will decrease the precision of how well the Elastic Reality shape matches your drawn shape. But, on the other hand, fewer control points are easier to edit (especially when tracking a moving object).

Moving the scroll box to the right increases the number of control points used to match the shape you just drew. This will increase the precision of the match between the resulting Elastic Reality shape, and your drawn shape. But, this comes at the cost of more control points which can be a burden especially when tracking a moving object.

Note: You're only able to use the Freehand Precision dialog to add or decrease precision to the freehand shape you just drew. Once Elastic Reality turns the shape into a Bezier curve, you'd have to use Reshape Mode to modify its form.

Note: Although Elastic Reality's Freehand tool uses state-of-the-art adaptive techniques to fit your drawn shape with a Bezier curve, a skilled user of the Pen tool can always track a more complicated shape with fewer control points.

If you're unhappy with the curve you've just created, you can delete it by pressing the DELETE key on the keyboard or by pressing the button marked "Delete Shape" in the Freehand Precision dialog.

Note: Your satisfaction with using the Freehand tool is directly tied to the cleanliness of your mouse and mouse pad. If either are dirty, your ability to trace the shape you intend may be impaired.

Note: The Freehand tool is not affected by the state of Snap To Grid.

See Also: Reshape Tool, Circle Tool, Square Tool, Pen Tool

Pen Mode

 The Pen tool is used to draw Elastic Reality shapes by specifying Bezier curve control points directly, rather than simply tracing a shape as with the Freehand tool.

By becoming proficient with this tool, you will be able to trace curves nearly as quickly as with the Freehand tool, with higher precision and fewer resulting control points.

Select the Pen tool by clicking the primary mouse button over the tool's icon (shown above). Or, press "p" on the keyboard when an Elastic Reality document has input focus.

You can exit Pen mode by selecting another tool.

Note: If you select another tool while in the middle of drawing a shape with the Pen tool, that shape definition is terminated (leaving you with an open shape).

When in Pen mode, you begin defining a shape by clicking (and optionally holding) the primary mouse button.

The act of pressing the primary mouse button adds a new control point to the shape being defined. If you hold the primary mouse button down after clicking, you can drag out the tangents for that control point.

If you're tracing the contour of an object, you will generally want to click and hold the primary mouse button down on the exact edge of the object's contour where the next change in curvature of the contour starts.

Once the control point is placed (and you're still holding the primary mouse button down), you can drag out the tangents for this control point. Generally, you'll drag in the direction "tangent" to the contour you're tracing. For an example of this, use the Circle tool to draw any type of oval and then examine the control point's tangent's in Reshape mode.

You can take a break from adding new control points to adjust or correct previously drawn control points (on the same shape). If you click the primary mouse button on a previously drawn control point, you can edit it using the same techniques as in Reshape mode. When you're ready to continue on with the shape's definition, simply click the primary mouse button on the location of the next point.

Note: The Pen tool is not affected by the state of Snap To Grid.

See Also: Reshape Tool, Circle Tool, Freehand Tool, Square Tool, Select Tool

Adjusting Correspondence Points

Correspondence points are adjusted or set in correspondence mode by clicking and holding the primary mouse button over the correspondence point to be adjusted.

While holding the primary mouse button down over the point, drag it to its desired position.

A correspondence point cannot be moved beyond its neighbors.

Holding down the SHIFT key while dragging a correspondence point will shift all of the correspondence points on the shape simultaneously.

See Also: Correspondence Mode - What Is It?, Adding And Removing Correspondence Points, Correspondence Points - What Are They?

Pop-Up Menu - What Is It?

A pop-up menu is a menu which can be brought up under certain circumstances with a click of the secondary mouse button. Unlike primary Windows menus, pop-ups appear where the mouse cursor is located.

An example of Elastic Reality making a pop-up menu available is in Reshape Mode when a control point is selected.

Note: If you only have a single button mouse, or are using a digitizing tablet without a second button, you can use the ENTER key to simulate a secondary mouse button click.

The Reshape Pop-Up Menu

When in Reshape mode, and a control point is selected, a pop-up menu with additional options is available.

This menu can be accessed by clicking the secondary mouse button when a control point is selected.

Note: If you only have a single button mouse, or are using a digitizing tablet without a second button, you can use the ENTER key to simulate a secondary mouse button click.

The menu contains the following commands:

Break This breaks a closed shape so that it becomes open. You cannot break a joined shape.

Cusp This causes the control point's tangents to be drawn down to zero length making the control point a sharp point (in the literal sense).

Linear This causes the control point's tangents to be drawn out to point precisely at the control point's two adjacent neighbors.

Smooth This causes the control point's tangents to be repositioned so that they are parallel to the line between the control point's adjacent neighbors.

Delete Control Point The currently selected control point is deleted. Every shape must have at least three control points.

Cancel Removes the pop-up menu without deselecting the currently selected control point.

Use Wireframe Preview To Look For Shearing

The Wireframe Preview is handy for many things, including getting a sense for how your shapes are working together to create the finished effect.

It is also very useful for find the cause of shearing artifacts which are possible when two nearby shapes give conflicting instructions to the warping kernel.

As an example, take the case of a shape surrounding a face and a shape surrounding a right eye.

Assume that a correspondence point is located at the right-most point of the eye shape and that a correspondence point also exists on the right side of the face shape.

It's possible that in setting up a morph between this face and another object, the right eye might have to travel downward while the correspondence information in the face shape may stay put or even move upward.

As the eye moves down, and the face moves up, the pixels in-between will be progressively stretched to a point where they may not produce attractive results.

This sort of sliding or shearing of one shape relative to another is often easily solved (by adjusting or adding correspondence points) if you know where to look.

Use the Wireframe Preview to spot these potential trouble areas.

Turning on "Correspondence Points" shows you not only how the individual shapes are going to move, but also what influence each shape's movement will have on its nearby pixels.

Seeing a correspondence point head in one direction and a nearby correspondence point head in another direction, is the red flag to look for.

In the example problem, one solution is to place the correspondence point on the right side of the face (vertically) even with the right-most correspondence point of the eye in both the source and destination shapes.

This way, as the eye moves downward, the correct part of the face moves downward along with it by the right amount. Shearing eliminated.

Using Elastic Reality As A Format Converter

Elastic Reality, being a HIIP enabled application, has very flexible image file format handling capabilities.

You can use Elastic Reality as a format converter simply by starting a new project and placing the images to be converted into the A roll, setting output options, and then "rendering" the full effect.

Since you've added no shapes, no warping will occur.

Elastic Reality will read in each image in the A roll, size it to the size specified in the Output Options, and write it out in for format and under the naming convention you've specified in Output Options.

Remember that you can use the Windows File Manager to select images quickly and easily using Drag-and-Drop.

You can go even further with this idea and use Elastic Reality to perform bulk composites.

For example, if you had a logo you'd like to add to the bottom corner of every image, create an image file with the logo properly sized and positioned. Place this image in the B roll.

Create an alpha channel mask properly sized that's white everywhere and black where the logo is. Place this image in the Matte roll.

Specify Matte Roll as the Morph Compositing Source in the Render Options dialog and select desired Output Options.

Now, when you select RENDER/Render Full Effect, the A, B, and Matte roll will be read in and sized according to your output options. The A and B roll will be combined using the image from the Matte roll and the results will be written out.

There are many more ways you can use Elastic Reality for format conversion functions that you'll discover with experimentation and imagination!

Defining Output File Name Template

Defining the name of the images to be output is accomplished by manipulating four variables comprising the File Name Template.

You can enter the template directly. Or, you can use 3 check boxes to automatically insert variable names into the template.

At all times, an example file name is shown in the Output Options dialog so that you can see exactly how your settings will result in output file names.

The [ext] variable is replaced with the string entered into the Extension text box. Typically, this is set automatically when you select an output file format.

The [num] variable is replaced with the current output frame number. You can specify the number of digits to be used by entering that value into the text box marked "Number Of Digits".

When [num] is replaced, it will start counting from the value you place in the text box marked "Initial Frame Num". Additionally, you can specify that the frame number be incremented by a value other than 1 by entering that number in the text box marked "Frame Num Skip Count" accessible by clicking the button marked "Advanced >>".

Negative numbers are permitted in "Frame Num Skip Count" so that you can output files "backwards" by placing a value larger than one in the "Initial Frame Num" text box and counting backwards.

For example, if you wanted to output 30 frames "backwards", you would specify a value of 30 in the "Initial Frame Num" text box and a value of -1 in the "Frame Num Skip Count" text box. The first rendered frame would be assigned a value of 30, the second would be 29, and so on.

The [base] variable is replaced with a prefix of the current project's name.

As many letters as the DOS file name limit of 8.3 characters permits will included, after taking into account the file extension and number of digits.

SE/Image Menu

This menu contains commands which relate to the management of images within the Sequence Editor. From here, you can add images to a roll, and create and delete stamp files.

Related Commands:
Insert...

Make Stamp
Delete Stamp

SE/FILE/Preferences...

Choosing this menu item brings up a dialog which allows you to choose what textual information will be displayed in each cel/frame.

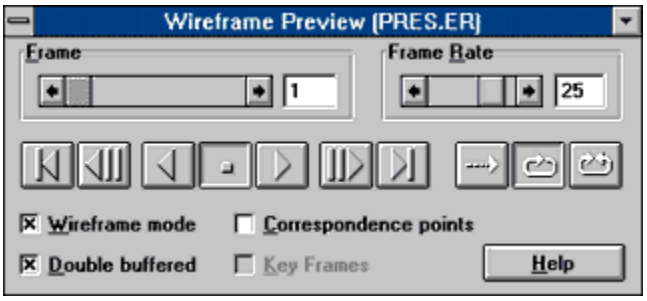
If you choose "File name," the root name (the file name without its full path) will be displayed.

If you choose "Time code," each frame will be listed by a zero relative time code. The time base is determined by the value you pick for FPS (for Frames Per Second).

If you choose "Frame number," each frame will be listed with its sequence number within its roll.

WINDOW/Wireframe Preview...

Choosing this menu item brings up the Wireframe Preview dialog and places Elastic Reality into Wireframe Preview mode.



Click on a control in the image above for quick help, or read on for more detailed information.

You can return to the normal effects-editing environment either by closing the Wireframe Preview dialog (thereby making it act like a modal dialog) or by unchecking the Wireframe Mode check box in the dialog.

The latter leaves the Wireframe Preview dialog displayed but returns Elastic Reality to normal (thereby behaving like a non-modal dialog).

Wireframe Previews are really handy to help you visualize how your shapes are working together to create the full effect. For a discussion on one of the larger benefits of Wireframe Preview mode, see Use Wireframe Preview To Find Shearing.

There are 10 buttons across the middle of the dialog split into 4 groups. From left to right, these are:

Go to first frame
Go back one frame

Play backwards
Stop
Play forwards

Go forward one frame
Go to last frame

Play through just once
Play through then loop back to other end
Ping-pong back and forth

When the "Double buffered" check box is checked, the wireframes are drawn in such a way that there's no flickering. While this slows down the maximum frame rate, the display is much smoother.

When the "Double buffered" check box is not checked, the wireframes will be drawn at top speed, but they'll flicker madly if there are a lot of them.

Wireframes play fastest when your display is in 256 color mode.

When the "Correspondence points" check box is checked, each shape's correspondence points will be drawn giving you some potentially vital information (discussed in Use Wireframe Preview To Spot

Shearing).

Drawing correspondence points slows down the Wireframe preview slightly.

Checking the check box marked "Key Frames" causes form key frames to be drawn in a stand-out color. This feature can help you zero in on key frames in large projects.

The scroll bar marked "Frame Rate" establishes a target frame rate which Elastic Reality will attempt to hit.

If it can't draw all the necessary wireframes quickly enough, it will drop frames so that the effective frame rate is exactly what you've specified.

The scroll bar marked "Frame" performs two functions. First, it lets you slide over to a particular frame in the Wireframe preview. Second, it keeps you updated as to which frame is being displayed at any given moment when the Wireframe preview is playing.

Things You Can Do While Wireframe Previews Are Running

Note: Wireframe preview mode has been designed to let various other things happen even while the Wireframe preview is playing.

You can zoom in and out while the wireframe is playing.

You can pan (scroll) around while the wireframe is playing.

You can bring up the Groups dialog and the Motion and Transparency dialog while the wireframe is playing. This let's you fiddle with the motion curves and get real time feedback as you're doing it!

Stamp - Short for "Postage Stamp"

In Elastic Reality, the word stamp is used to mean a small iconic representation of a larger image.

Change In Curvature - What's That?

Imagine the letter "S". Starting from the top and tracing downward, the curvature (or the "trend" in the curve) is counter-clockwise.

When you reach the vertical mid-point of the "S", the curvature changes to clockwise.

You can represent any variation on the "S" shape with three Bezier control points. One at either end, and one at the mid-point, where the curvature changes.

FILE/Project Description...

Choosing this menu item displays a non-modal dialog providing you with a means of entering and editing text of your choosing.

This text is displayed by Elastic Reality's TransJammer program in its "Description" area. If you're creating effects for TransJammer, you should avail yourself of this capability to provide descriptive information about what happens during your effect and whether or not the effect can be reversed, etc.

If you're not creating effects for TransJammer, you might use this text area to enter notes to yourself or others who may be collaborating with you.

Note: Since the project description text is physically stored in the project file, you must save the project (document) after making changes to the descriptive text.

TransJammer - What Is It?

TransJammer is a stand-alone program by Elastic Reality, Inc. which makes adding sophisticated transition effects to your presentations fast and easy.

TransJammer is very easy to use. Simply choose an effect, choose images, specify output choices, and tell it to go.

TransJammer is an open system...it uses Elastic Reality project files to instruct it how to create transition effects. If you also own Elastic Reality, you have an infinite source of custom transitions which can be created and edited with WYSIWYG ease.

RENDER/Render TransJammer Sample

Choosing this menu item causes Elastic Reality to render 8 representative (though tiny) frames from the current project (document).

These images are not written directly to disk as they would be if you had chosen Render Full Effect. Rather, they are stored internally and are written out as part of the project file the next time you FILE/Save or FILE/Save As.

As the text "Render TransJammer Sample" implies, these images are used by Elastic Reality's TransJammer program.

TransJammer effects are actually Elastic Reality project (document) files.

When you select an effect in TransJammer, it reads the corresponding Elastic Reality project file to fetch descriptive information as well as the sample created by the "Render TransJammer Sample" command.

If a sample is present in the selected project file, it is animated in the TransJammer user interface so that you have not only a description of how the effect works, but a visual example of it as well.

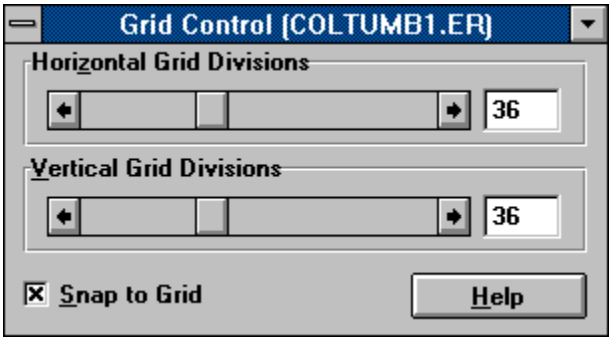
Note: Since the sample is physically stored in the project file, you must save the project (document) after rendering it.

WINDOW/Grid Control

Choosing this menu item brings up the Grid Control dialog.

While this dialog is itself non-modal, it is used to place the current project into Snap To Grid mode.

The keyboard accelerator to display this dialog is CTRL+L.



Click on the controls in the above image for quick help. Or, read on for more detailed information.

When the check box marked "Snap To Grid" is checked, the Select, Reshape, Circle, and Square tools are modified so that they operate only upon the grid system currently defined by the Grid Control dialog.

Defining a grid layout in Elastic Reality is a little different that in other software programs.

In many programs, you might define a grid in terms of pixel width and height.

But, in Elastic Reality, all shapes (and the effects they produce) are resolution independent. This means that the area enclosed by a certain number of pixels high and wide is subject to change depending upon how the shapes that you draw are rescaled for use with new pictures.

To allow for resolution independence, you instead specify a grid by how many grid boxes you want to overlay over the width and height of your image.

The specific size of the grid boxes are free to change with the specific size of the images they are being overlayed over. What remains constant, is how many grid boxes exist in each vertical column and horizontal row.

You determine these values using the scroll bars marked "Horizontal Grid Divisions" and "Vertical Grid Divisions".

At a value of 1, there is 1 grid box in the horizontal or vertical dimension. (This leads to an easy way to draw a rectangular shape that perfectly surrounds your image - see the Square tool for more information)

At a value of 2, there are 2 grid boxes in the specified dimension, each occupying 50 percent of the available space.

And, at a value of 100, there are 100 equally space grid boxes each occupying 1 percent of the available space in the specified dimension.

Since the Grid Control dialog is non-modal, you can leave it displayed all the time and activate and

deactivate Snap To Grid when ever and where ever you'll find it helpful.

When Snap To Grid mode is on, grid demarkations will appear along the periphery of the image in the Elastic Reality document window.

Snap To Grid is very helpful when creating TransJammer effects. This is because TransJammer effects often utilize shapes organized on a grid basis. Certainly, rectangles which precisely fit the entire image are used very often in TransJammer effects.

Point Motion And Dissolve

This is an advanced topic.

In Correspondence mode, a pop-up menu is available when you click the secondary mouse button over a correspondence point.

Note: If you only have a single button mouse, or are using a digitizing tablet without a second button, you can use the ENTER key to simulate a secondary mouse button click.

This menu allows you to place a single correspondence point in a shape into a different group from the rest of the shape.

If the two groups have different motion curves, parts of the shape will accelerate at a different rate from the rest of the shape, leading to more organic looking motion.

For example, this technique is used to add the slight page turn effects to corners of the columns in the "COLTUMB2" TransJammer effect. In this case, a correspondence point at one corner of each shape was added to the next "faster" group. This causes the affected corner to lead the rest of the shape, creating a warp effect which looks like the start of a page turn.

If the two groups have different transparency curves, parts of the shape will dissolve (assuming that the All Groups Matte is used) at the different rate from the rest of the shape, leading to more subtle and sophisticated morphs.

Using this technique you can create dissolves which start at one part of a shape and expand outward to encompass the entire shape, making it even more difficult to spot the actual dissolve. This technique is used in creating the "Odo" character on Paramount's Star Trek: Deep Space Nine.

If you choose "Cancel," the pop-up menu is removed without making any changes.

If you choose "Shape's Group," then the correspondence point is returned to whatever group the shape belongs.

The other choices are the names of the groups you have defined. Selecting one of them places the correspondence point into that group.

WINDOW/Show Matte

As you know, mattes are very important to Elastic Reality and its users.

The Show Matte command in the WINDOW menu lets you visualize each of the potentially many mattes that you might use.

When the View Preview button (in the Elastic Reality workspace) is not pushed in, you'll be shown whatever matte information is contained in the A roll image or the B roll image (depending upon which roll you're viewing) when you choose the Show Matte command.

That is: to see any matte information which is contained in the A roll image, ensure that the View Preview button is not pushed in, click the A roll button, and choose the Show Matte command.

And, to see any matte information which might be contained in the B roll image, ensure that the View Preview button is not pushed in, click the B roll button and choose the Show Matte command.

The Show Matte command is a toggle, by the way. Choose it again, or use its keyboard accelerator (CTRL+L) to return to the regular image.

To see one of the computed mattes, temporarily select the matte you'd like to see in the Mattes/Save area of the Render Options dialog. Then, perform a preview render. Doing so has the effect of "pushing in" the View Preview button. When you toggle the Show Matte command now, you'll see whatever matte you had selected in the Render Options dialog.

What means what in a matte?

Fully white areas mean the A roll will be completely visible for mattes used in the Morph Composite step. In mattes used for Background Compositing, fully white means the results from the previous step will be fully visible.

Fully black areas mean the B roll will be completely visible for mattes used in the Morph Composite step. In mattes used for Background Compositing, fully black means the Background roll will be fully visible.

Using Elastic Reality To Augment Other Programs

As you know, Elastic Reality is an enormously powerful and flexible tool. While its principal focus is warping and morphing effects, you've seen how you can use it for animation, matting and compositing, digital video effects, and other applications.

Elastic Reality can give a powerful boost to other programs as well, particularly programs which do video integration and the more fully featured paint and compositing systems.

Use Elastic Reality to prepare mattes, especially full motion mattes.

While Elastic Reality provides some unique compositing capabilities found nowhere else, programs such as Altimera Composer and Specular Collage are specifically designed for compositing functions. As such, they can be better suited for many general compositing tasks than Elastic Reality.

You can leverage off of Elastic Reality's unique strengths in making soft edged mattes for objects requiring complex motion tracking and for which automatic matte making techniques (such as blue or green screening) cannot be performed.

The simplest method of using Elastic Reality for the purpose of creating mattes (for use in other programs) is to outline the shapes you wish to matte, then select the automatically generated Cookie-Cut matte for saving in the Matte Saving area of the Render Options dialog.

To create mattes in external files without actually saving the image you're using to create the mattes (since you already have them), make sure that the Save Morph check box is ***not*** checked and that Save Matte Externally ***is*** checked in the Advanced Area of the Output Options dialog.

If you require mattes to be added directly into the image file you're working with (as a forth - or alpha - channel), make sure that Save Morph ***is*** checked, and that Save Matte Externally ***isn't*** checked (the opposite of the settings mentioned above).

You'll also need ensure that that the output format you've selected supports imbedded alpha channels. You can do this by clicking on the Saver Info... button after selecting the output file type you wish to use.

If the file format you've selected supports saving an imbedded alpha channel, the words "Supports Alpha" will appear in the Saver Info.

Instead of selecting to save the Cookie-Cut matte, you can create and save more complex mattes with variable transparency using the All Groups Matte. For this case, again simply outline the shapes you with to create mattes for. Then place those shapes in the appropriately configured groups to create the variable transparency settings you with to achieve.

Another use of Elastic Reality to create mattes for use in other programs is to create mattes from shapes which don't bear any relation to the images you're working with. For example, you use Elastic Reality to create star-shaped mattes which dance across the screen. Use Elastic Reality to create a super soft edged wipe, etc. Many TransJammer effects are examples of this.

You can then import these animated mattes into video integration programs like Adobe Premiere and In:Sync's Razor, extending the usefulness of those programs.

Of course, keep in mind how TransJammer (and using Elastic Reality to create TransJammer style effects) tremendously expands the flexibility of programs like Premiere and Razor.

Use Elastic Reality For Format Conversion

While this subject is covered in another tip, we do want to emphasize that the image formats supported by Elastic Reality include some of the most important formats to the professional videographer and cinematographer. Some of these formats are currently supported nowhere else under Windows.

If you need access to high-end formats such as Cineon and SoftImage, keep Elastic Reality in mind.

Use Elastic Reality for Texture Manipulation

Users of 3D modelling programs are heavy users of texture images. You can use Elastic Reality to spice up and add interest to textures by using Elastic Reality to animate them, or pre-warp them to match a particular distortion.

An example of using Elastic Reality to animate textures for 3D purposes is one of the computer generated creatures in the premiere season of Babylon 5, the hit science fiction series.

The creature's "skin" (a texture) needed to look like breathing pores were opening and closing at random all over its body. The skin texture was loaded into Elastic Reality and then warped with lots of expanding and contracting circle shapes giving the desired effect. The results, when mapped onto the creature by a 3D modelling package were very convincing.

Another example of manipulating textures is the use of Elastic Reality to add expression to textures used for faces, eyes, and other details. This has a similar effect to the technique described in the next tip, but has the advantage of working on the 2D texture before it's mapped into 3D (and then down to 2D again in the finished image). Because you're able to manipulate the texture before it hits 3D, you'll be able to benefit from the animated texture interacting with the 3D object (being subjected to lighting and shadows, for example).

Use Elastic Reality for Fine Motor Animation and Animatronics

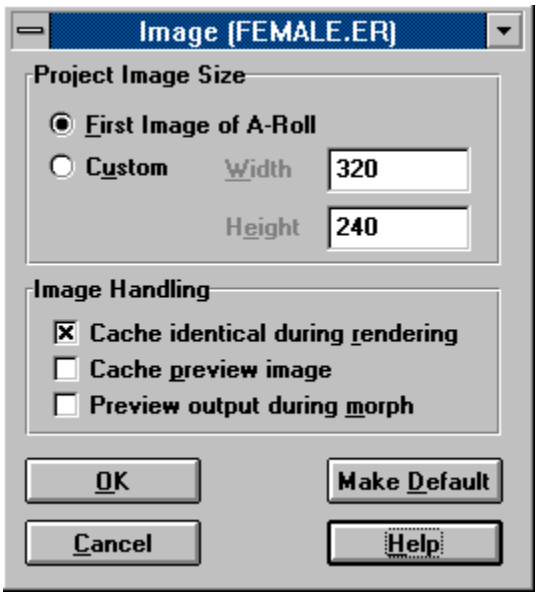
Again for people doing 3D work (and also applicable to Animatronics professionals) is using Elastic Reality to evoke fine motor control over 3D objects and/or puppets.

A good example of this is the MGM Grand Hotel in Las Vegas commercial. The effects magicians at Boss Films created an animated a golden lion in a 3D package. Elastic Reality was used to add fine muscle movement to the lion as a post-process. This proved to be simpler and more effective than creating finely detailed movement within the 3D package itself. (Elastic Reality was also used to morph the recumbent lion into the Hotel itself.)

In this way, Elastic Reality amplified the power of their 3D package and enabled them to create effects which greater visual complexity in less time.
You too can benefit from mixing warping and morphing effects with effects created with 3D modelling programs.

FILE/PREFERENCES/Image...

Selecting this command brings up a modal dialog which allows you to define how Elastic Reality deals with images in its user interface.



Click on the controls in the above image for quick help. Or, read on for more detailed information.

Project Image Size

Elastic Reality is resolution independent. In fact, it actually works with three different resolutions at any given time.

The first resolution is that of the images you're working with as they appear on disk.

The second resolution is that at which you choose to operate the user interface - this is the resolution determined by this dialog.

And finally the third resolution is that of the final rendering. This is determined in the RENDER/Output Options dialog.

As mentioned, this dialog determines the image size at which the Elastic Reality GUI operates.

Checking "First Image of A-Roll" means that Elastic Reality will scale all images used in the graphical user-interface to match the size of the first image in the A roll.

Checking "Custom" allows you to enter width and height values of your own choosing.

If you're working with a very small image, it may become difficult to resolve small detailed shapes without constantly zooming in. Use this dialog to set a larger GUI image size than the files really.

If you're working with really large images, it takes time and memory to load each image at its full size. And, the image might be so large, that you find yourself constantly zooming out to see enough of it. Use this dialog to set a smaller GUI size to reduce operating memory or to allow you to see more of the image without having to zoom out.

Image Handling

If you have memory to spare, turning on these options will speed your work, or provide additional convenience.

If you're short on memory, turning these options off decreases virtual memory paging by Windows and increase the image sizes you can work with (without running out of total memory).

Cache identical during rendering

If checked, Elastic Reality will notice cases where the next frame to be rendered re-uses one of the images being used in the current frame, and keep the image in memory, eliminating the need to reload it.

This results is faster rendering times for projects which have consecutively repeated images in them. This comes at the expense of requiring additional memory during a RENDER/Render Full Effect

Cache preview image

If checked, Elastic Reality will remember the last preview you've done even after you've shifted back to your work images. This allows you to toggle back and forth to your last preview render whenever you wish.

When not checked, Elastic Reality will forget the preview image as soon as you return to your work images. This saves on memory since the preview image buffer isn't maintained all the time.

Preview output during morph

If checked, Elastic Reality will display a copy of each finished image during a RENDER/Render Full Effect at the expense of additional memory and the amount of time it takes to prepare image data for screen display.

If not checked, Elastic Reality will not display each finished frame during a Render Full Effect.

Note: The performance penalty for previewing images during a full render will be significant if the output size does not match the GUI size. This is because Elastic Reality must scale each finished image to match the size of the GUI images before it can display them.

Again, if you are outputting images at a different output resolution than your GUI resolution, the performance penalty for previewing images while rendering a full effect will be significant.

See Also: RENDER/Output Options, FILE/PREFERENCES/GUI, FILE/PREFERENCES/Brightness and Contrast

SE/EDIT/Multi-Paste

Is used to add multiple copies of any frames in the clipboard into the current roll.

Keyboard: CTRL+M

See Also: SE/EDIT/Paste, SE/EDIT/Cut, SE/EDIT/Copy, and SE/EDIT/Delete

Matte Sources Defined - 0 Percent Matte

This is a special purpose matte source which creates a constant 0 intensity matte.

This matte is used principally in two ways:

1. It is used in the Morph Composite stage as a means of ***previewing*** only the B roll component of a morph.
   Sometimes in preparing a morph, you may suspect that a particular problem is confined to the B roll. By setting the 0 Percent Matte as the matte used during the morph compositing stage, only the results of the B roll warp will be passed through that stage, providing you a means of seeing only the B roll during a preview render.

2. It is used in the Save Matte stage to force a 0 intensity matte into an output file.

Matte Sources Defined - 100 Percent Matte

This is a special purpose matte source which creates a constant 100 intensity matte.

This matte is used principally in two ways:

1. It is used in the Morph Composite stage as a means of ***previewing*** only the A roll component of a morph.

   Sometimes in preparing a morph, you may suspect that a particular problem is confined to the A roll. By setting the 100 Percent Matte as the matte used during the morph compositing stage, only the results of the A roll warp will be passed through that stage, providing you a means of seeing only the A roll during a preview render.

   This is essentially the same as temporarily clicking the "Don't Generate B Roll" button in RENDER/Render Options, with the exception that the full computation (including the B roll warp) does take place.

2. It is used in the Save Matte stage to force a 100 intensity matte into an output file.

Additional Image Saving Options

This area of the Output Options dialog contains four check boxes which allow you to set some additional image saving options:

Save Effect

This item is usually checked since it informs Elastic Reality that you'd like to save the finished results of each frame's computation.

If you uncheck this box, Elastic Reality will perform its full computation but the final results will not be saved.

You might uncheck this box if you're only interested in saving one of the intermediate stages (such as the warped A or B rolls as described below).

Save Warped A Roll

If this box is checked, the intermediate results of the A roll warp will be saved with the same name, path, and parameters as specified in your output file name template with the exception that an "a" will be prepended to the output file name.

This feature is useful if you wish to preserve the intermediate steps of a morph so that the rolls can be composited elsewhere.

Save Warped B Roll

This check box is accessible only when you're working on a morph document (ie: a document with both an A and B roll).

If this box is checked, the intermediate results of the B roll warp will be saved with the same name, path, and parameters as specified in your output file name template with the exception that a "b" will be prepended to the output file name.

This feature is useful if you wish to preserve the intermediate steps of a morph so that the rolls can be composited elsewhere.

Save Matte Externally

If you have specified a matte to save, and the output format you've selected supports saving an imbedded alpha channel, you can check this box to force Elastic Reality to save the selected matte externally, rather than imbed it in its output files.

If not checked, the matte you've selected to save will be imbedded directly into the output files (assuming, again, that the format you've specified supports imbedded alpha channels).

If the format you've selected does not support imbedded alpha channels, then you're only choice in saving an alpha channel is to save it externally. Therefore, this check box isn't accessible.

Setting Color Reduction Options

If the file format you've selected supports writing indexed color files, these controls determine how the full color imagery processed by Elastic Reality will be turned into a low color rendition.

These controls are not accessible if the selected format cannot output indexed color images.

An example of a format which supports both true color and indexed color is the BMP format.

An example of a format which supports only index color is the GIF format.

An example of a format which supports only true color is the SGI RGB format.

If the selected format supports both indexed and true color output, you can choose either 24 for true color or 8 for indexed color from the Depth text box.
If you choose 24, the other choices become inaccessible.

Note: When outputting AVI files, you may want to keep the color depth set to 24 and let the CODEC used by Video For Windows determine how best to reduce the color information if necessary.

However, Elastic Reality does support directly writing index color AVI files.

Dithering is a technique which enables an image to give the impression of more colors than it actually contains. It does this by using groups of pixels in combination to produce the appearance of colors which are actually not present in the image's palette.

Currently, Elastic Reality supports four basic, though high quality, dithers.

These are:

None	No dithering will take place. Color banding is likely except in cases of primarily monochromatic images.
Ordered Faster	An ordered dither which produces good results for animation purposes.
Ordered Better	An ordered dither with higher quality (at the expense of slightly slower execution) which produces good results for animation purposes.
Floyd	An error diffusion dither which produces good results for still imagery but may introduce visible artifacts when used in animations.

To reduce a true color image down to relatively few colors, a color picking step must be performed. The aim of this step is to choose a small palette which is visually representative of the colors contained in the true color image.

Elastic Reality currently provides 3 methods for color picking.

These are:

Fixed	One of two fixed palettes will be used depending upon the state of the "Preserve Windows Palette" check box. This setting provides the highest performance since no actually color picking computations are performed.
Octree	This method of color picking performs best when the source true color imagery contains relatively few colors. Computer generates images, for example, and close-ups of faces.

Median	This method of color picking performs best when the source true color imagery contains a huge number of colors. Scans of natural images like landscapes and such, for example.

After deciding how the colors will be picked, you must determine where the colors that are used to do the picking will come from.

This is determined in the "Get palette from" area.

If you click "First Frame," Elastic Reality will build its computed palette based upon the first frame of output. If the colors present in the first frame are radically different from the colors present in the last frame, the ending frames will suffer. If this is the case, you might want to use one of the Fixed palettes which give satisfactory results in general.

If you click "Every Frame," Elastic Reality will build an optimal palette for each and every frame. This will consume extra time during rendering but always picks the best colors for each image.

Note: If you're writing AVI files, be aware that most AVI players, including the standard ones provided by Microsoft, do not support palette changes per frame.

RENDER/Render Options/Rendering Area

In this area there are three check boxes which turn on and off various processes within the warping kernel.

For doing typical warping or morphing work, you get the best results by turning on all three of these bells-and-whistles at the expense of some additional execution time.

Antialiasing

Much of Elastic Reality is based upon warping. Pixels are warped, or moved, from where they started from to some other location.

When this check box is not checked, Elastic Reality moves pixels only by integral amounts. As a result, significant stair-stepping or aliasing can result because each pixel's movement is restricted to integral pixel boundaries.

When "Antialiasing" is checked, Elastic Reality can move pixels with an accuracy far greater then that of integral pixel boundaries. The results is an elimination of stair-stepping or aliasing artifacts.

Getting the benefit of Elastic Reality's antialiasing technology is almost always worth the additional execution time it incurs.

Smother Folds

This check box refers to the antialiasing which Elastic Reality can perform along the edges of folds. As such it only comes into play when you're sliding
some shapes behind others.

It's pretty inexpensive to leave this check box checked all the time.

Soft Edges

This check box controls the antialiasing which Elastic Reality can perform along the perimeter of each shape.

If you're rendering in the Cookie Cut or Jigsaw styles, checking this option means you'll get each shape smoothly dropping off into the black background area.

The Cookie-Cut matte always has soft edges. So, if you're using the Cookie-Cut matte to composite, as well as the Cookie-Cut or Jigsaw warping style, you should not check Soft Edges, since two sets of soft edges will result in some black creeping into the compositing results.

Shifts Wireframe preview one frame backwards in time.

Sliding to the left goes backwards in time.

Sliding to the right goes forwards in time.

Shifts the Wireframe preview one frame forwards in time.

Displays the frame number that the Wireframe preview is currently showing.

You can directly enter a frame to view in this text box.

Clicking this reduces the frame rate (by one frame-per-second) that the Wireframe preview plays at.

Sliding to the left makes the Wireframe preview play at a lower rate of speed.

Sliding to the right makes the Wireframe preview play at a higher rate of speed.

Clicking this makes the Wireframe preview play one frame-per-second faster.

Displays the current frame rate (in frames-per-second) at which the Wireframe preview is playing.

You can directly enter a new frame rate in this text box.

Go to the first frame.

Backs up one frame.

Plays the Wireframe preview backwards.

Stops the Wireframe preview.

Plays the Wireframe preview forwards.

Goes to the next frame in the Wireframe preview.

Goes to the last frame of the Wireframe preview.

Plays the Wireframe preview just once.

Plays the Wireframe preview (either forwards or backwards) and then loops back to the other end (and starts again).

Plays the Wireframe preview backwards and forwards, reversing each time it hits either end.

Toggles Wireframe preview mode in the current Elastic Reality document (let's you leave this dialog displayed and still edit shapes).

Shows correspondence points in the Wireframe.

Shows form key frames during the Wireframe preview.

When checked, draws with reduced flicker, but at lower peak frame rate.

Displays this page of the help file.

Decreases the selected shapes edge density.

Slide to the left to decrease the selected shape's edge density.

Slide to the right to increase the selected shape's edge density.

Increases the selected shape's edge density by one.

Displays the currently selected shape's edge density.

You can enter a new edge density directly in this text box. Allows a value of 1 to 50.

If checked, motion from one side of the shape will ***not*** be transmitted to the other side.

Makes the current settings into the default settings for this dialog.

If checked, the selected shapes will participate in the Cookie-Cut matte.

If checked, the selected shapes will participate in the warping phase.

Shifts the selected shape's tweening curve towards linear.

Shifts the selected shape's tweening curve towards "curvy."

Slide to the left to make the selected shape's tweening curve more linear.

Slide to the right to make the selected shape's tweening curve more "curvy."

Displays the selected shape's tweening type value; a number between 1 and 100.

You can enter a value directly into this text box.

Shows the effect of the selected shape's tweening type value.

Copies the current key to another frame.

Moves the current key to another frame.

Makes the current frame a key.

Removes the key from the current frame.

Changes frame to the shape's next key frame.

Changes frame to the shape's previous key frame.

Click to decrease the precision of the match between the freehand shape you drew and the Bezier curve Elastic Reality creates to represent it.

Click to increase the precision of the match between the freehand shape you drew and the Bezier curve Elastic Reality creates to represent it.

Increasing the precision comes at the expense of more Bezier control points.

Slide to the left to decrease freehand fit precision.

Slide to the right to increase freehand fit precision.

Displays the number of Bezier control points that the current Precision value would produce.

Displays the current precision value as a number between 1 and 100.

You can enter a value in this text box directly.

Displays a count of the number of mouse (or pen) samples Elastic Reality took in capturing your freehand shape.

Closes the freehand shape you just drew.

Removes the freehand shape you just drew.

Decreases the number of horizontal grid division.

Slide to the left to decrease the number of horizontal grid divisions.

Slide to the right to increase the number of horizontal grid divisions.

Displays the number of horizontal grid divisions.

You can also enter the number of horizontal grid divisions in this text box directly.

Decreases the number of vertical grid divisions.

Slide to the left to decrease the number of vertical grid divisions.

Slide to the right to increase the number of vertical grid divisions.

Increases the number of vertical grid divisions.

Displays the number of vertical grid divisions.

You can also enter a value in this text box directly.

When checked, Elastic Reality is in Snap-To-Grid mode.

Increases the number of horizontal grid divisions.

Displays the group's motion and transparency curves. These curves are editable.

Displays the name of the group currently being edited.

Displays which curve is being edited (motion or transparency).

Displays the style of the currently edited curve. Either spline or linear.

If your pointing device is currently over an editable control point, this is its time value.

If your pointing device is currently over an editable control point, this is its value.

Creates a new group.

Deletes the group currently selected in the group list.

The group currently selected in the group list moves up one notch. Read about "depth" to find out why this is needed.

The currently selected group moves down one notch. Read about "depth" to find out why this can be important.

Enables you to copy the selected group's motion and/or transparency curve to other groups.

Brings up the motion and transparency editor for the selected group.

All of the shapes belonging to the currently highlighted group are selected.

Any shapes which are currently selected are added to the group that's highlighted.

Shapes belonging to the currently highlighted group are removed from view (not from the project).

If you wish to rename the currently highlighted group, enter the new name here.

This is the list of defined groups. The order in the list is important. Read about "depth" to find out why.

Decreases the brightness of the selected roll.

Slide to the left to decrease the brightness of the selected roll.

Slide to the right to increase the brightness of the selected roll.

Increases the brightness of the selected roll.

Decreases the contrast of the selected roll.

Slide to the left to decrease the contrast of the selected roll.

Slide to the right to increase the contrast of the selected roll.

Increases the contrast of the selected rolls.

Displays the contrast setting for the selected roll.

You can also enter a contrast value in this text box directly.

Displays the brightness setting of the selected roll.

You can also enter a brightness setting into this text box directly.

Sets both the brightness and contrast settings back to the neutral value of 50.

Selects which roll (A, B, or Both) you'll affect the brightness and contrast for.

All GUI images are scaled to match the size of the first image in the A roll.

All GUI images are scaled to match the specified size.

Use some additional memory to make rendering full effects go faster.

Use some additional memory so that the preview rendering can stick around.

Use some additional memory so that you can see each frame as it is completed during a full render.

Dispatch this dialog, accepting all of its settings.

Dispatch this dialog, resetting all of its settings to the values they had before you made any changes.

Make the current settings the default settings for this dialog (when creating new projects).

Decreases the size of the margin

Slide left to decrease the size of the margin.

Slide right to increase the size of the margin.

Increases the size of the margin.

Displays the current margin size setting. This is a percentage of the image's width and height from 0 to 300.

Decreases the drawn width of shapes.

Slide left to decrease the width of the shapes drawn in Elastic Reality.

Slide right to increase the width of the shapes drawn in Elastic Reality.

Increases the drawn width of shapes.

Displays the drawn thickness of the shapes in Elastic Reality.

The minimum (1) draws single thickness shapes and goes fastest.
The maximum (3) draws triple thickness shapes and is real easy to see.

Draws shapes with greater accuracy when set to high.

Uses larger tool icons. Great for high res display card owners.

Uses smaller tool icons and therefore less space on lower resolution display cards.

The pixel values in the file are used as an index into a table of prepared color values.

Since relatively few colors can be held in the prepared table, a palette choosing step must be performed.

And, since many colors will not be found in the resulting table (due to its small capacity, generally 256 colors), some method, a technique called dithering can be employed to give the impression of more colors.