

# **Pictures To Exe Version 5.0**

## A USER GUIDE

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## 1. INTRODUCTION

Are you one of those people who, when they get a new software package, immediately run it and play around with the features to see how they work? Or perhaps you are more the studious type who opens the manual first and reads it from beginning to end before you try the actual software. Well whatever your inclination, this guide is for you, the new (and perhaps not so new) user of PicturesToExe Version5 (PTE).

This guide is not a detailed “How To” document and it does not contain much information about the creation of the large range of special animation effects that are possible with PTE. Nor does it supersede many of the excellent tutorials which are available as either video or written guides. If you go to the Wnsoft user forum at

<http://www.picturestoexe.com/forums//index.php?s=543c9ee3ba42d6270860f7838409d10f&>

you will see that one of the sub forum topics is “Tutorials”. Here you will find references to a large range of information and “How to” articles about different aspects of using PicturesToExe, Version 5 (PTE). Remember also that the forum is a wonderful resource of helpful and knowledgeable people who are only too anxious to help you.

So then you ask, what is this guide for? Well we have written it to provide a combination of user manual and reference guide to the many wonderful features of PTE. Our idea behind writing the guide was to identify all of the features and controls available in PTE and describe their operation and function. The concept is that you will start to use PTE and then find some feature or control whose function you do not understand. Out will come the Guide and you will be able to look it up in the detailed contents list. The Guide was written using a bookmark feature. So you can open the “Bookmarks” tab of Adobe Reader and click in the contents on the subject you wish to look up. This will take you directly to the relevant page and you can find out how the feature works.

Perhaps you are a completely new user. In this case we recommend that you read the section on Basic Operation first. This will give you a good idea of how PTE works. Then you can progress to using some of the special animation features and, hopefully, improve your slide shows.

However, knowing that some of the concepts of the new version of PTE, in particular the animation functions, are fairly complex, we could not resist adding “how to” material as appendices. So far there are two. One giving standard shortcut key strokes and the other a detailed explanation of understanding and using keypoints.

So far this guide is a sort of “work in progress”. In its present form, it covers all of the aspects of the operation and functions of PTE. Nevertheless, we may well add further appendices in the future and will, of course amend and re-issue the Guide if any errors need correcting or other topics adding.

One final comment. This Guide was written as a collaborative effort for the members of the PTE forum by two authors, one American and one English and the English language version of the program is American English. So you will find a mixture of national spelling and mannerisms in the text. We leave you, dear reader, to make of these what you will. We hope an international flavour to the whole design exercise that is **Pictures To Exe**.

## 2. SCOPE

The latest version of "Pictures To Exe", Version 5.0, was launched in June 2007. It contains many new features and tools compared to the previous version, Version 4.48, and provides a much more sophisticated way of making slide show presentations. Briefly the features included in Version 5.0 are as follows :

### Key features of version 5.0

- New graphical engine which uses all power of your video card.
- Burning of DVD-Video disc with your slide shows right in PicturesToExe.
- Pan/Zoom/Rotate effects in real-time with high quality. Sharp picture and smooth animation. Special option "Perspective correction for Zoom" to reach natural looking zooming.
- Completely new editor of objects and animation. Proportionally scalable objects. Improved Text objects, drop shadow or glow can be applied for any object. Seven skins for Button objects.
- New cool view of Navigation bar.
- Tree of folders in main window of PicturesToExe.
- PNG images support.
- Improved quality of music player.
- Improved support of Windows Vista (in main program of PicturesToExe).
- Undo/Redo feature.

## 3. BASIC OPERATION

### 3.1 General

We start the main part of this guide by describing the window which opens up when you run the exe program for PicturesToExe Version 5 (PTE). This file is **Apr.exe** and its usual location on a windows computer is :

**C:\Program Files\WnSoft PicturesToExe\5.0**

When you run PTE, the main window will open, giving you access to all the basic functions necessary to select a number of slides and import them into PTE. Within the main window are all the necessary controls and functions to select slides, change their order in the show, set the main show parameters such as time for each slide, type and time for the transition effects between each slide, add an associated sound track and control animation functions. These will all now be described in the following sections of this guide.



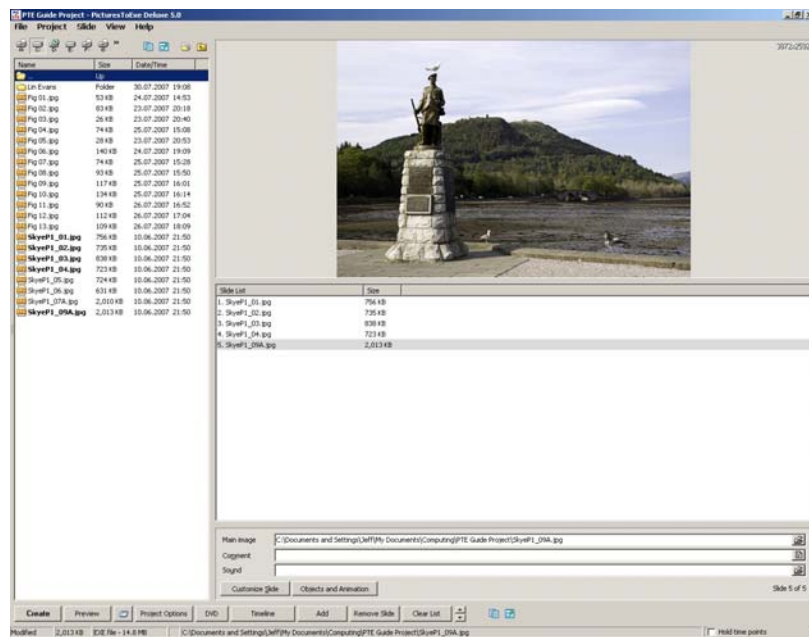
### 3.2 Main Window View

The main window has a number of controls which affect the appearance of this **Main Window** and there are three different standard view modes :

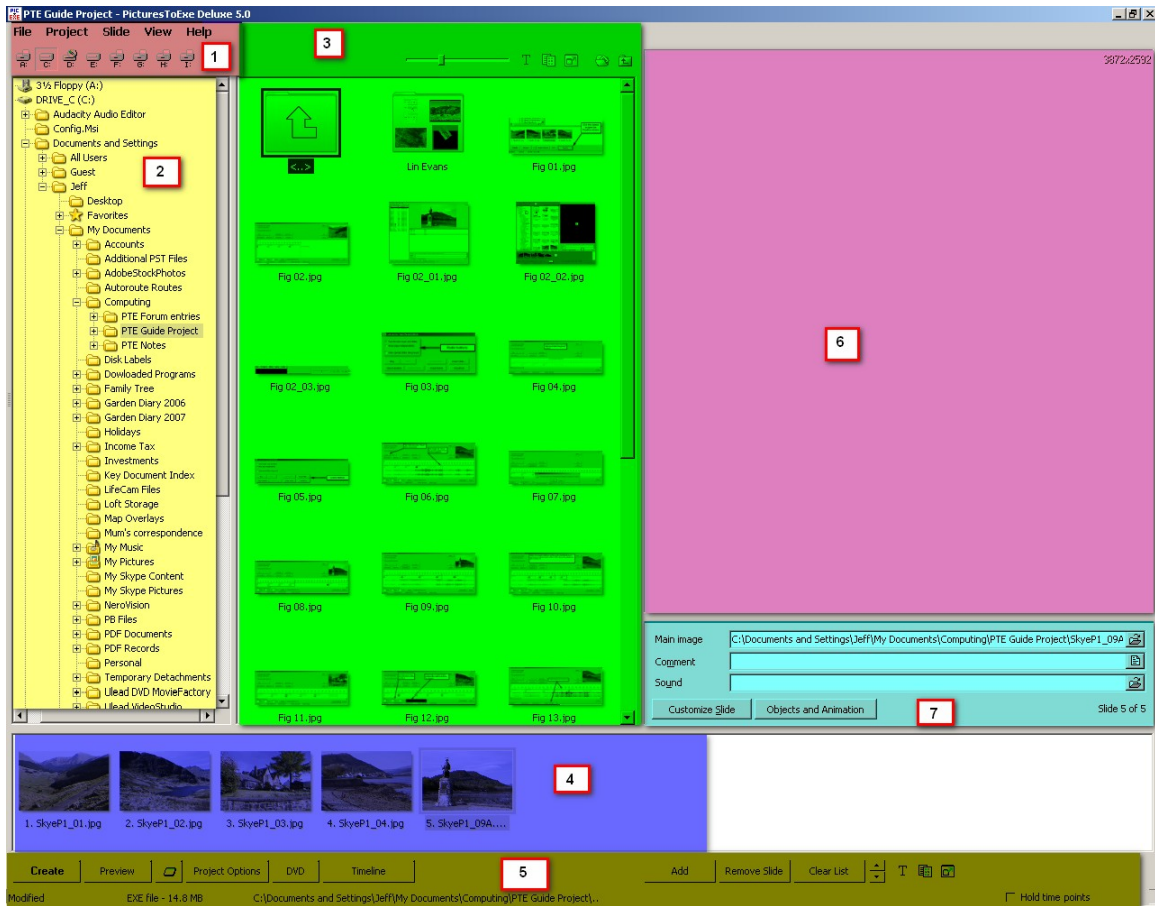
- Classic view
- Horizontal view
- Vertical view

Figure 3.1 shows the layout of the basic as an example. Section 3.3.1.4 explains how to select the other view arrangements.

Figure 3.1










However this view is not the most useful one for the purposes of describing the various elements, and so Figure 3.2 below shows a more useful version of the main window which we will use to describe its various attributes.



**Figure 3.2**

This window is obtained by using the “View” option “Horizontal View” and switching on the “Tree” option which shows a directory tree of files on your computer. The window is divided into seven sections as shown above. The seven sections have been numbered and colour coded for ease of reference in this guide. The seven sections of the window are :

- |  |   |
|--|---|
| 1. The window menu and drive selector                      |  |
| 2. The file directory tree                                 |  |
| 3. The selected directory window and view controls         |  |
| 4. The slide list  |  |
| 5. Control buttons and status bar                          |  |
| 6. The preview window for selected slide in the slide list |  |
| 7. Function controls for a selected slide                  |  |

Each of these seven window sections with their associated attributes, will now be described

### 3.3 Window Sections

#### 3.3.1 Section 1 : Menu

Figure 3.3 shows the menu section of the main window.



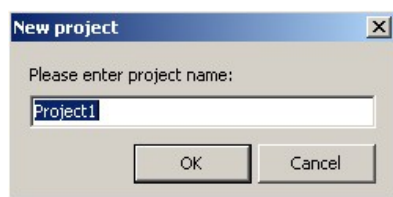
Figure 3.3

This window section consists of 5 menu options plus a number of drive icons. The number of drive icons depends on how many drives you have installed on your computer. In the example shown, there are 8 drives installed. Drive C: is selected as the main computer drive.

##### 3.3.1.1 File Menu

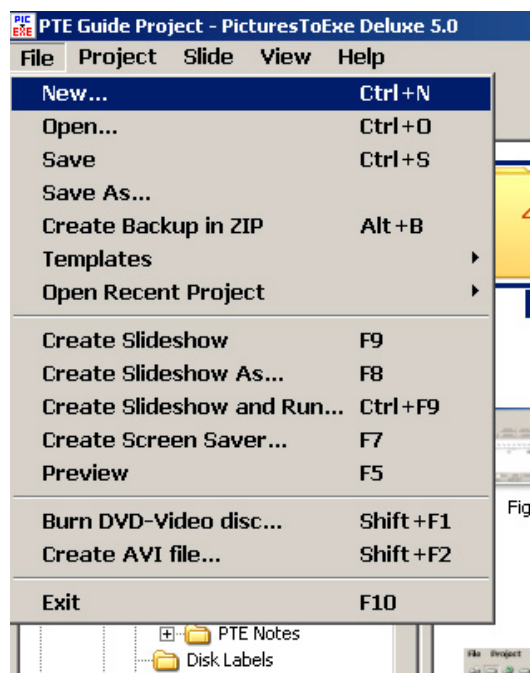
The file menu has 15 options on it as shown below. The functions of each of these options are as follows.

The **New** option is used to open a new PTE project. If you click this option, a dialog box will open like this



Clicking the **OK** button will accept this name and a blank project window will open. Of course you can just type in your own name. But remember you must then save the project with this name or the name will be lost.

The **Open** option will open a typical Windows “open” dialog box where you can select a directory and a previously saved PTE project file. All PTE project files have the extension “.pte”/

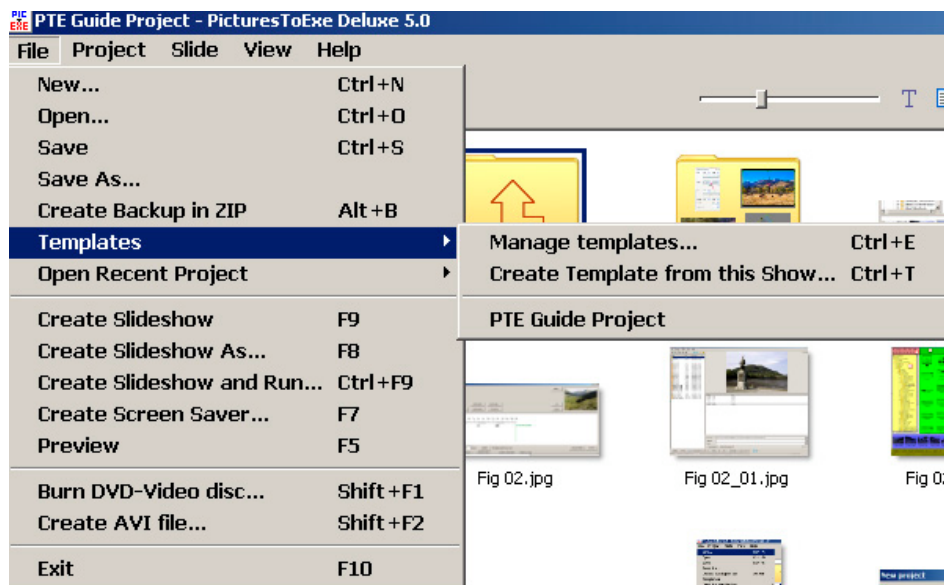


The **Save** and **Save As** options do just that. Save an existing project under its originally saved name or under a new name that you specify.

The **Create Backup in ZIP** will take all the files which the project is using, even if they are not all in the same directory , and put all these into a standard ZIP file. This is a very useful facility as it enables you to collect all the files which the project uses and put them all in the same place.

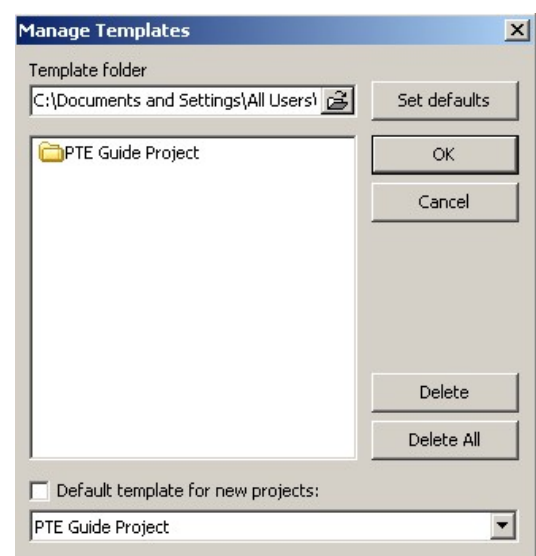
The **Templates** option is a feature which was provided in Version 4.48 and has been continued here. It is virtually superseded by the **Create Backup in ZIP** option but works in a different way. Using this option will enable you to create a directory (template directory), into which will be copied all the files

used in a PTE project. The files will not be zipped up as in the previous option, but will exist as separate files in the template directory. Selecting this option will bring up the following dialog box.



This shows a further two options, plus a list of any templates you have previously created. You can see from the above figure, that there is a template called “ PTE Guide Project”, which was created whilst writing this guide.

The **Manage Templates** option brings up another dialog as follows : The **Set Defaults Button** allows you to set the default directory for storing templates. The default setting is in :  
C:\Documents and Settings\All Users\Application Data\PicturesToExe\Templates



The function of the other buttons are obvious. The check box at the bottom left of the dialog box allows you to create a standard template for all your shows (for example with default slide timing and transitions) and then use this as a basis for future shows. Start a new project and set all the **Project Options** to the values you want. You do not need to add any slides. Use **Templates, Create Template from this show** options to save the project as your default template. Make sure you check the button in the **Manage Templates** dialog box. Now when you open PTE, the project settings will be the ones you have set up.

The **Create Slideshow** and **Create Slideshow As** options allow you to create an executable file (.exe file) when you have completed your PTE project. These options will create an “.exe” file which will run on computers having a “Windows” operating system without a copy of the PTE program being present. This is in effect compiling the code produced by PTE when you create a project into a form which will run independently from the original source code and source image and sound files. All the information to run the show is contained in the .exe file. The **Create Slideshow and Run**, does just that. It creates the .exe file and then the show runs.

The option **Create Screensaver** will create a “.scr” file instead of an “.exe” file. This file can be used to produce an animated screen saver based on your PTE project.

The **Preview** option enables you to preview your show. Using this function, the preview always starts from the beginning of the show.

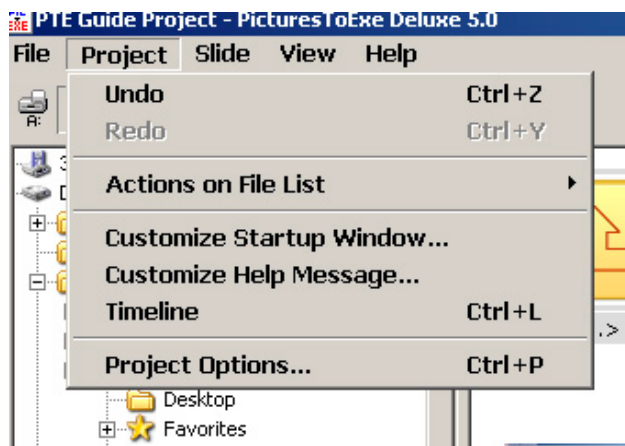
The **Burn DVD-Video** disk option is only available in the deluxe version of PTE. This option allows you to transfer your completed show onto a DVD disk or create a video disk. The next option allows you to create an AVI file which you can then import into other video editing programs. A description of these functions is given later in this guide.

Finally the last option **Exit** enables you to exit PTE.

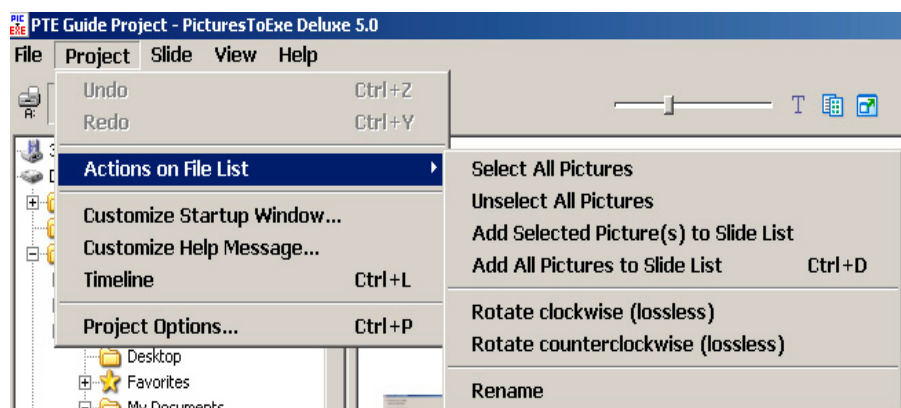
### 3.3.1.2 Project Menu

The project menu has a number of options as shown below.

With the exception of the **Actions on File List** which will be explained shortly, the other options are self explanatory. With the customize functions you can control the appearance of a window that appears when the .exe file is run. You can also configure the format of any special “Help” instructions. The **Timeline** option opens the timeline window and **Project Options** gives access to all the particular options that you can set as defaults for your project. The facilities provided by **Project Options** requires a detailed explanation and this is provided in Section 5.5.

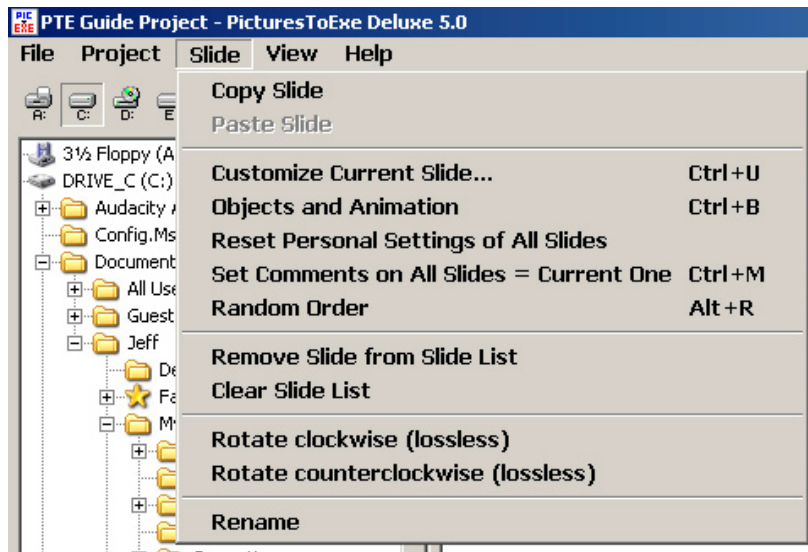


If you click on the **Actions on File List** the following dialog box opens. The options available apply to images in the selected file directory in the **File Directory Tree** which is discussed below. The action produced by the various options should be self-evident and require no further explanation.



### 3.3.1.3 Slide Menu

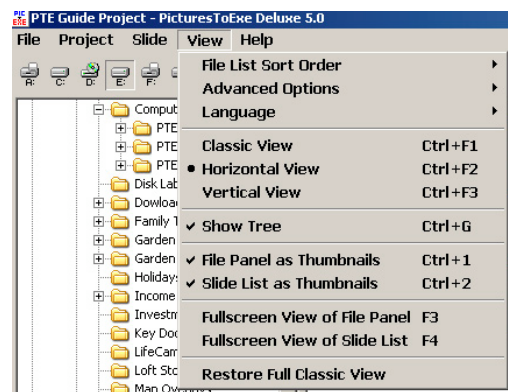
The **Slide Menu** provides a series of options to apply to any slide images which have been entered into the **Slide List** which is described in Section 3.3.4 below. The various options which are available are shown in the screen dump print below.



The functions of these options are fairly obvious. The options **Customize Current Slide** and **Objects and Animation** are described in detail in Sections 5.6 and 0 later in this guide.

### 3.3.1.4 View Menu

The **View Menu** has a number of options as shown in this screen dump. There are three different possible arrangements of the main window as previously discussed. The screen dump shows that the **Horizontal View** is currently selected and this is the view shown in Figure 3.2 above. To see what the other views are like, just try selecting each one until you get an arrangement which suits your personal preference. All view provide the same window facilities. It is just their arrangement on of the screen which alters.



The **Show Tree** option enables you to look at the **File Directory Tree**, and options 8 to 11 control how images in the file tree and slide list appear. Again just try these to see which arrangement suits you.

The **Language** option allows you to select the working language of PTE from a choice of 21 options and the **File List Order sort** option gives you a choice from six different sort options.

Finally the **Advanced Options** give you a wide range of choices for setting a number of program parameters. The expanded menu options are shown below.

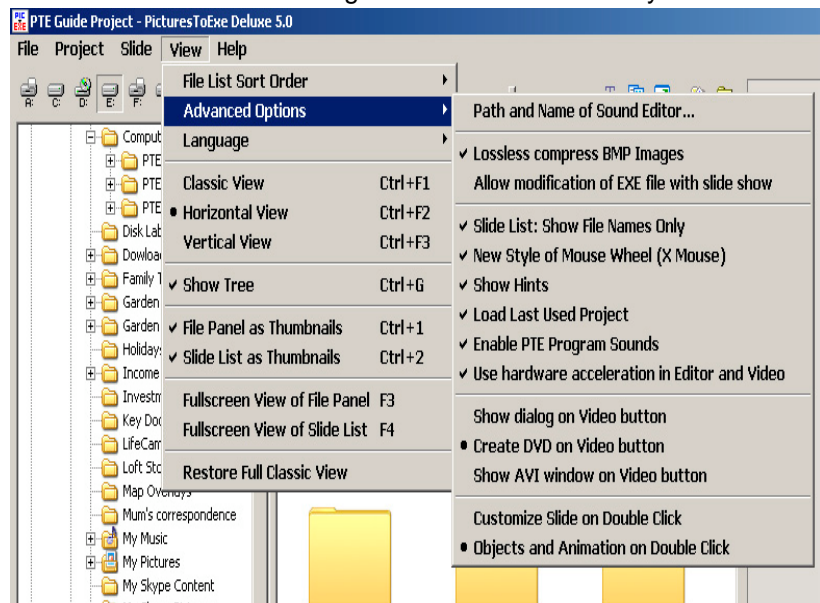
The **Path and Name of Sound Editor** allows you to enter the location and name of your favourite sound editor. This feature only works if you have added a sound file to an individual slide. This feature is discussed in Section 3.3.6.

The **Lossless Compress BMP Images** provides a feature to compress these images if you use bmp image files. Note that the use of jpg and png image files in PTE is recommended. However it is recommended that this feature is selected.

The **Allow modification of EXE files with slide show** is a special feature which has been added by request to allow modification of an EXE file using special tools to cater for the possibility that it might be infected by a virus or damaged due to incorrect downloading. This feature is not likely to be used by the average user.

The **Slide List : Show File Names Only** removes the whole path from slides in the **Slide List** if the view for this list is arranged to show image files as a list only without the thumbnail.

The **New Style of Mouse Wheel (X Mouse)** allows you to scroll any window by just placing the mouse pointer over that window without selecting the window. With the option deselected, you have to make a window the focus for the mouse by clicking in it before you can scroll. This is a useful feature and should be selected.



The **Show Hints** feature is not enabled and will be removed in a future update of PTE.

The **Load Last Project** if selected results in the last project you worked on being loaded automatically into PTE when you open the program. This is useful if you are working on a project over a period of time and want to load the last version up on starting PTE.

The **Enable PTE Program Sounds** feature, if selected, will give sound feedback when certain PTE functions are used.

The **Use hardware acceleration in Editor and Video** should normally be selected so that you can use the new animation features to their best advantage. If however you have a limited performance graphics card, you may want to switch this feature off.

The three options to change the label and subsequent dialog boxes for DVD, video and AVI, control the legend on the DVD/Video button described later. The functions which you can access via this button are described later in this guide.

The final two options in the **Advanced** menu control how you can access the two features of customising slides and gain access to the animation editor.

### 3.3.1.5 Help Menu

This menu provides access to the usual **Help** facilities which are available for most Windows type programs. No further explanation is necessary.

### 3.3.2 File Directory Tree

In the horizontal arrangement of the **Main Window** as shown in Figure 3.2 the **File Directory Tree** is shown on the left hand side of the screen (Item 2). Figure 3.4 shows a repeat view of part of this window. This section of the window is a standard Windows file browser window in which all of the file directories (or folders) present on the various hard drives on your computer can be shown. It is essentially similar to the left hand pane of Windows Explorer. Note that by clicking on a drive letter at the top of the screen, you can show the directories that are located on that drive. Once a directory(folder) is selected, all the images in that directory will appear in the **Selected Directory Window** described next.

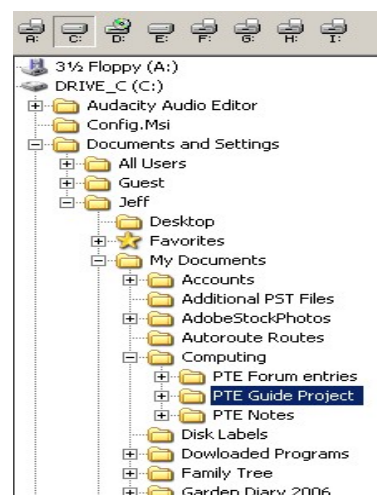


Figure 3.4

### 3.3.3 Selected Directory Window

Figure 3.5 shows a portion of this window. The image files located in the directory selected in the **file Directory Tree** window appear in the window. There are some controls at the top of the window which affect the appearance of this window as follows.

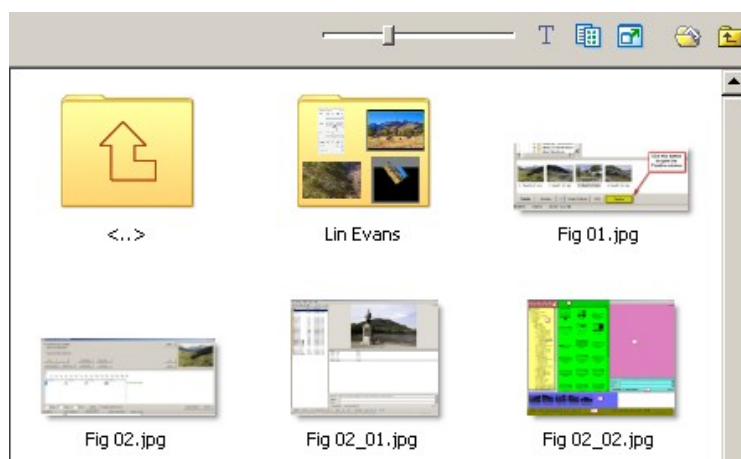





Figure 3.5

The slider control alters the size of the image thumbnails.




The  icon control switches off the filenames under each image file.

The  icon changes the layout of the window from a table to thumbnails.

The  icon changes this window into a full screen view. In this full screen view, you cannot drag and drop any of the image files to another position. Image files which have been added to the **Slide Window** have their filename in bold type.

The  icon is a shortcut to open "My Documents" as a quick way to find image files.



And finally  the icon moves to the next higher directory.

### 3.3.4 Slide List

The **Slide List** is the area in the **Main Window** where slides selected for the show are placed. It is important to understand that the actual image file for each slide remains in its original directory. When you click on a directory containing your images, these images appear in the **Selected Directory Window**. Now if you double click on a slide image, or select a slide and click the **Add** button at the bottom left hand side of the screen, the slide will be added to the **Slide List** as a reference entry, i.e. a reference will be created to that slide in the list identifying its filename and source directory. Figure 3.6 shows part of the **Slide List** window and the two image files which have been added in the **Selected Directory** window with their filenames highlighted in bold.



Figure 3.6

The images which appear in the **Slide List** window form the PTE slide show and the order of the images in the window is the order they will appear in the show. Note that when referencing these slides in the **Timeline** window, the numbers used are the numbers 1, 2, 3, 4 etc. in the **Slide List** and not the actual individual slide filenames. A description of how to see all of the slides in the list is given in the following section, but it is worth noting that many of the actions which you might want to perform on individual slides or a group of selected slides, can be obtained quickly by selecting a slide(s) and right clicking with the mouse. This produces a quick menu as shown in this screen dump. The actions can be applied to one slide

Copy Slide	Ctrl+C
Paste Slide	Ctrl+V
Remove Slide from Slide List	
Clear Slide List	
Move to Top	Ctrl+Home
Move to End	Ctrl+End
Random Order	Alt+R
Open picture	Ctrl+W
Customize Slide	Ctrl+U
Objects and Animation	Ctrl+B
Rotate clockwise (lossless)	Ctrl+F
Rotate counterclockwise (lossless)	Alt+F
Edit sound comment	
Rename	F2
Start Preview from the current slide	Ctrl+R

or a number of slides except for the items highlighted in yellow which can only be applied to individual slides. When selecting slides in the list, use the usual Windows key strokes of **Ctrl** for individual selections and **Shift** for selecting consecutive slides.

There is an important issue about slides in the slide list which you need to be aware of if you are using the **Create Backup in Zip** option under the **File** menu. In Figure 5.1, the **Objects and Animation** window is shown. Note that there is a tick in the radio box named **Main image** What this means is that the image in the **Slide list** is the main image which is being edited for animation. However it is possible to remove this tick and delete the image in the animation editor and insert a different image. If you do this the original image will remain in the **Slide List** but will not appear when you run the show. Instead you will see the image(s) you have inserted in the animation editor. Why would you want to do this. Well imagine that you want a slide with a black background and some text on it. You can create this in the animations editor but you need a marker slide in the **Slide List** in order to define where this text slide is to appear in your show. So you insert a marker slide, remove the **Main image** tick and delete the slide. However this marker slide will not be included in your zip backup file, and when you unzip it, the marker slide will still be referenced to its original position. Thus if you move the zip file to another computer, the marker slide will be missing.

### 3.3.5 Control Buttons and Status Bar

Figure 3.7 shows the **Slide List** window with a series of buttons and icons below it. At the bottom is the status information bar. This status bar shows the information for the last slide in the **Slide List**.



Figure 3.7

We shall now describe the functions of the various control buttons and icons.

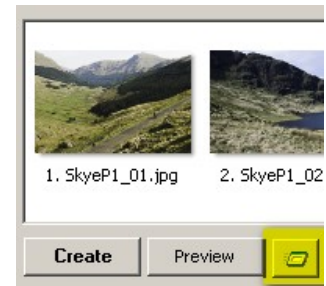
#### 3.3.5.1 Create button

When you have finished preparing a PTE show, you may wish to create an EXE file version so that you can transfer the show to another computer (say at your photo club), or just as an easy way to keep the show on your computer in a form you can easily run it. Clicking on the **Create** button performs this action. However take note of the following important information.

1. If you have finished a show and click the **Create** button, an exe file will be created with the name and in the directory that you choose.
2. Now if you change the show and press the **Create** button, the previous EXE file will be overwritten. To avoid this, you must use the **Create Slideshow As** option on the **File** menu.
3. If you have the **Project Options – Main Tab** option set to create a screen saver, then the **Create** button will create an .SCR file instead of an .EXE file.

### 3.3.5.2 Preview button.

Click this button will start a preview of the complete show from the beginning. If you want to start the preview from a slide part of the way through a slide show, then select the slide and click on the little icon to the right of the **Preview** button as shown in yellow in this screen shot.



### 3.3.5.3 Project Options

This button opens the project options dialog boxes with a large number of settings and adjustments that you can apply to your slide show. A detailed explanation of the features available is given in Section 5.5.

### 3.3.5.4 The DVD button

As described in Section 3.3.1.4, this button can be set to initiate creation of a DVD, a video disc or an AVI file. The legend on the button thus depends on which of these options you have selected. If you have purchased the deluxe version of PTE, you will be able to create a DVD version of your project and thus this is the option you will probably select. However you may have your own video editor and thus wish to import an AVI file produced from PTE and do further editing. A description of the functions available from this button is given in Section 6.

### 3.3.5.5 Timeline button

A description of the functions available from this button is given in Section 4.

### 3.3.5.6 Add Button

Further along the control buttons are three more buttons, some icons and a radio box. The **Add** button is the first of these. This button is used to add slides from the **Selected Directory Window** into the **Slide List**. Select the slides you want to add (remember using **Ctrl** allows you to select non-adjacent slides and **Shift** allows you to select blocks of slides) and click the **Add** button. Another way to add slides is to double click the selected slides.

### 3.3.5.7 Remove Slide button

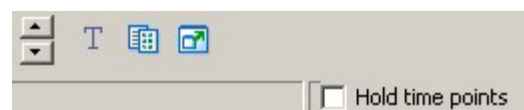
This button removes selected slides from the **Slide List**.

### 3.3.5.8 Clear List button

This button removes all slides from the **Slide List**.

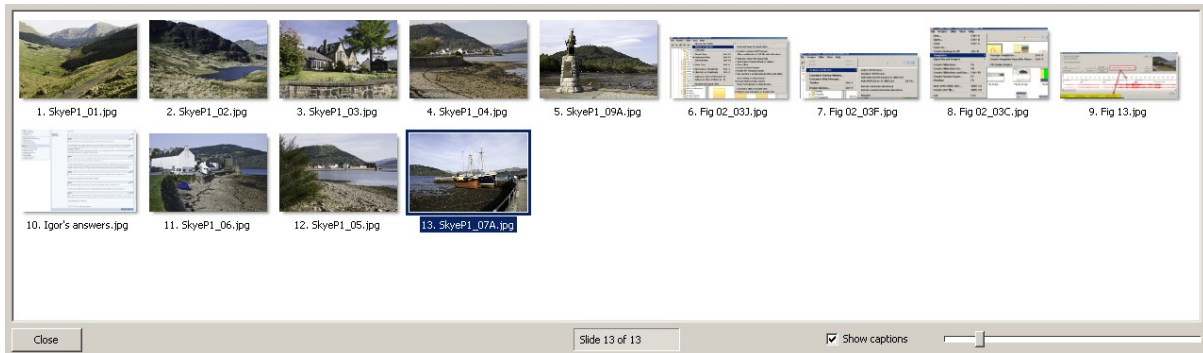
### 3.3.5.9 Icons

There are four icons beyond the last button on the control panel. The function of the up and down arrows is to scroll through the slides in the slide list. Despite the fact that the arrows are vertical, they work whether the **Slide List** window is vertical or horizontal. (See under the **View** menu).



The function of the other icons is exactly the same as the identical icons on the **Selected Directory Window**. When you click the full screen button however, the full screen shows all of the slides in the **Slide List** and this time, you can drag and drop slides into different positions. This is a very useful

feature to allow you to see all the slides in a show on a single screen and also to reorder them manually. The full screen version of the **Slide List** is shown below.



### 3.3.5.10 Hold Points

At the far right hand side of the bottom of the screen is a small radio box for which the default setting is “unchecked”. This is a feature which controls what happens to the subsequent slide positions when you insert a slide into the **Slide List** window. If the box is unchecked, then all slides following the position at which you inserted the new slide, will be moved along the timeline to make room for the new slide. The amount by which they will be moved is equal to the default time setting for the inserted slide. If you tick the **Hold Points** box, then the new slide will be inserted without the subsequent slides moving. **There appears to be an error in this function at present in which the “Hold Points” function is dependent upon the selection of the “Auto adding of new transition points for new slides” function in the Timeline window. This possible conflict has been notified to Wnsoft.**

### 3.3.5.11 Status Bar

Along the very bottom of the **Main Window** is the **Status Bar** as shown below.



The first box contains the word “Modified” immediately you change any part of a show without saving it. If you save a show, this word will disappear. The next box contains the size of any slide which is selected. The next box contains the anticipated size of any EXE file created from the current show. The next box is normally blank. However if you customize a slide, the letter “P” will appear in this box as shown in yellow above. Note that for some reason, the box remains blank if the only change is to the time length of a slide and you do not check the box in **Project Options, Main** tab titled “Scale keypoints in objects (on time change).”

### 3.3.6 Preview Window and Function Controls

Figure 3.8 shows the **Preview Window** which includes a section for information on the current slide, adding comments and sound and the function controls of **Customize Slide** and **Objects and Animation**. A view of the current slide appears in this window when a slide is selected, either in the **Slide List** or the **Selected Directory** window. The only difference being that a slide selected in the **Selected Directory** window does not have the small icon for initiating a preview from that slide for obvious reasons. Note also that that you can click anywhere in the window to view the slide in full screen, not just on the words at the top left of the window.

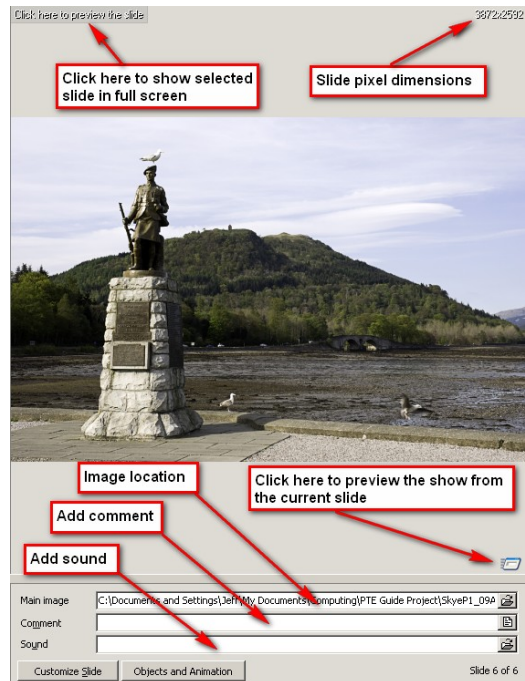


Figure 3.8

The three entry boxes at the bottom of the window need some further explanation. The first box labelled **Main Image** shows the current path to the file whose image is shown in the **Preview Window**. In the second box marked **Comment**, you can either type a comments to be added to a slide in the box, or click on the little icon at the right hand side to open a dialog box into which you can type a suitable comment. The comment will appear on the slide in a position determined in the **Project Options, Comments** tab. Adding a comment in this box results in the comment only appearing for that slide. To add comments which will appear on all slides, you need to use the options in **Project Options, Comments**. The final box marked **Sound**, allows you to add a sound file to a particular slide. One reason for doing this may be to add some commentary just for that slide. Clicking on the icon on the right hand side of the box opens a typical windows file dialog box where you can select the relevant sound file. Note that on the **Project Options, Music** tab, there is a radio check box which allows the sound to continue beyond the current slide should you wish it to do so. (See further comments in Section 5.5.3.

## 4. MAIN TIMELINE OPERATION

### 4.1 Introduction

The main timeline facility in PTE is a graphical tool which displays slides inserted into the **slide window** in the form of a horizontal timeline, starting at time=0 on the left and ending with the last slide on the right. Each slide is shown for its specified duration which includes its transition time (shown as a grey strip at the beginning of each slide).

The primary function of the **Timeline** is to assist in the co-ordination of slides with an associated sound track. This may be achieved in a number of ways as follows :

- Slides spread at equal time intervals along an associated sound track
- Slides arrange to coincide with particular points in an associated sound track, e.g. slides whose position is dictated by points in the sound track
- Slides whose duration and time location are selected to match an accompanying sound track which includes commentary (and perhaps also music)

Of course a slide show may have no supporting sound track (although this would perhaps be an unusual situation). In this case, the **Timeline** merely shows the slides and their transitions.

Although the functioning of the **Timeline** in Version 4.48 of PTE is very similar to that in Version 5, there are two significant differences. In Version 4.48, the **Timeline** display is not available until a sound track is added to the PTE project via the **Project Options – Music** tab. However in Version 5, the **Timeline** display is available immediately after adding just one slide to the **Slide List**, whether or not an associated sound track has been added. Also in Version 5, the default project setting is that the slides and soundtrack are **synchronised** – see the **Project Options, Main** tab, where under **show settings**, the **synchronise music and slides** radio button is ticked.

Before beginning an explanation of the timeline functions, some further explanation of the term “synchronise” may be useful as there can be a great deal of confusion about this term. In PTE, the term **synchronisation** is used to describe the linking of slides with an associated sound track file. Lets take an example. Suppose a slide show contains 30 slides each set to a duration of 10 secs (including the transition time for each slide). The total length of the show will thus be  $30 \times 10 = 300$  secs. Now suppose that a sound track whose length is 600 secs is added to the project. If the **Timeline** window is opened, it will be seen that the slides end after 300 secs, even although the **synchronise music and slides** radio button is ticked. To ensure that the slides are equally distributed over the 600 sec duration of the sound track, the **arrange all points** button in the **Timeline** window needs to be clicked (see later for a description of this function). The slides will now be distributed at 20 sec intervals equally over the 600 sec sound track and the show will be considered to be synchronised, although the only “synchronisation” is that the slides and sound track have the same overall duration.

Lets look at another example. Consider another scenario where a combined music plus commentary sound track has been created to enhance a series of slides. In this example, the composite sound track is added to the project and slides are added at time intervals which match their associated

commentary. This show is truly “synchronised” as the slide positioning matches defined points on the sound track.

So what about “un-synchronised” shows? Well these might consist of a series of slides and a sound track which bears no time relationship to the slides. The sound track might be the same piece of music repeated, or it might not last for the same duration of the slides. Or different sound tracks might be added to specific slides using the facility previously described to add a sound track to a particular slide. In these cases, the **synchronise music and slides** radio button should be un-ticked.

## 4.2 Opening the Timeline Window

Figure 4.1 shows part of the main opening window of PTE with some of the control buttons shown at the bottom. The **Timeline** button is shown highlighted in yellow. Clicking this button will open the timeline window as shown in Figure 4.2 below. This figure shows that 4 slides have been added to the show. Each slide has a duration of 4 secs, including a 1.5 sec transition (the grey shaded areas at the beginning of each slide). These are the default setting values in PTE but of course they can be altered. At the 16 sec point on the horizontal time line there is a vertical green line. This indicates the end point of the last slide. No sound track can be seen at present. This will be added and described later.

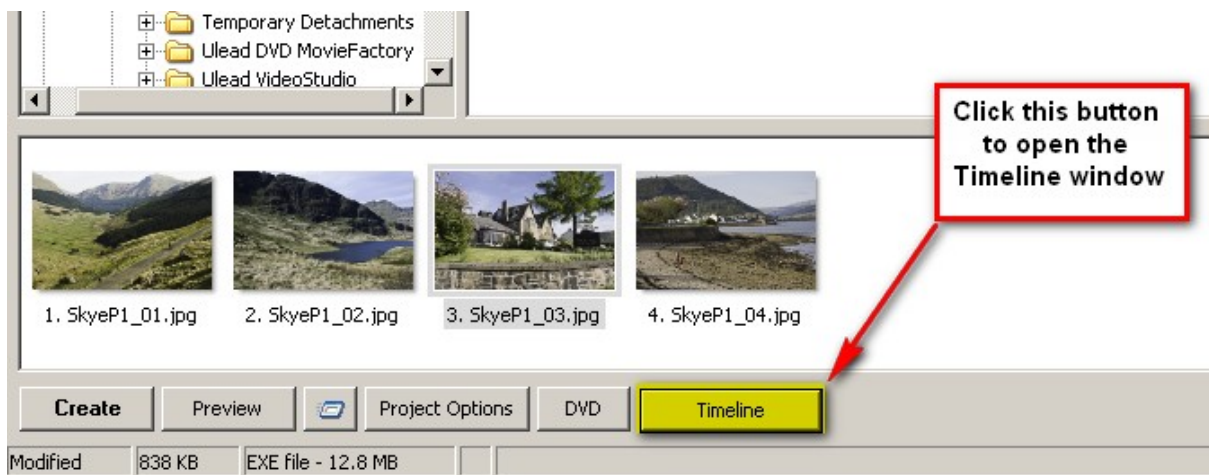
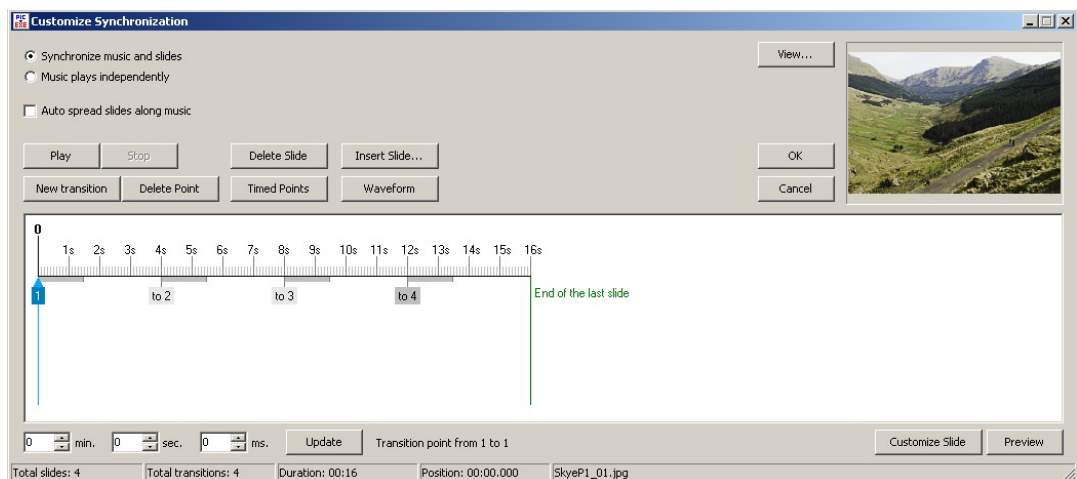


Figure 4.1

Figure 4.2



A number of buttons, radio buttons, status information and a preview pane can be seen. The first slide is highlighted and a preview of this slide can be seen in **preview pane** in the top right hand side.

You can try this yourself as follows. Open PTE and start a new project. Add 4 slides and click the **Timeline** button. The **Timeline** window should open looking the same as in Figure 4.2 above. Now click with your mouse on the timeline, just below the “0” position. A blue triangle with a vertical line will appear. Click and hold on this blue triangle and drag it to the left. The show will start to play and a preview of the various slides will appear in the **preview pane** as the blue triangle passes each slide. This is a simple demonstration of how the **Timeline** works. Note that you can change the position of any slide on the timeline by clicking and dragging with the mouse on the slide number. Note also that you can change the length of a slide transition by positioning the mouse over the end point of a transition. The mouse pointer will change to two vertical parallel lines and the end point of the transition can be dragged either longer or shorter. The functions of the various buttons and indications will now be described below.

### 4.3 Radio Buttons

At the top left hand slide of the timeline window, there are three radio buttons as shown in Figure 4.3.

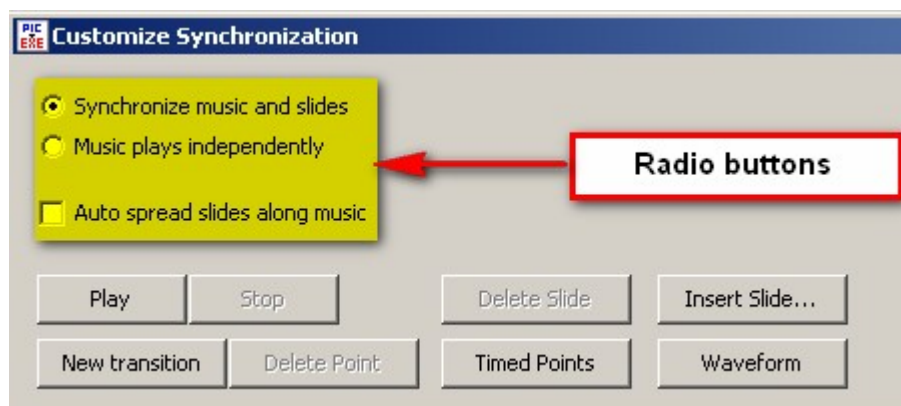


Figure 4.3

The first two buttons control whether the slides and sound track are synchronised or not (see the previous comments on synchronisation). Clicking either of these radio buttons also controls the **synchronise music and slides** radio button in the **Project Options, Main** tab. Note that once you have created a synchronised show, say by distributing your slides at equal intervals along a music track, clicking on the **Music plays independently** button will not reset the slide timing. Generally this button will only be used if you know from the beginning that you want an un-synchronised show. This type of show may be the exception rather than the rule.

The **Auto spread slides along music** button will do just that. However the position of the slides on the timeline will not change. Clicking this button will cause the **Timeline** window to be greyed out. But the effect will be to spread the slides equally along the sound track. There is another way to do this as we shall see shortly. Figure 4.4 shows the window greyed out with an information comment in blue to indicate that the slides are effectively spread out along the music track.



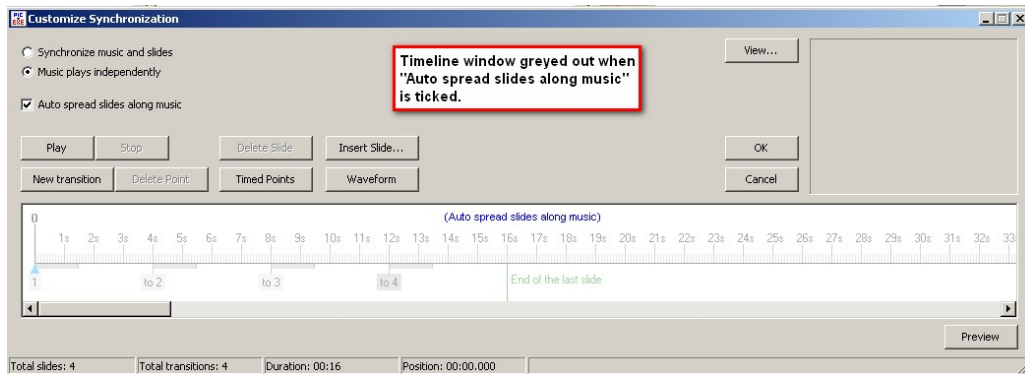


Figure 4.4

## 4.4 Control Buttons

Figure 4.5 shows the 8 control buttons which are used to control the playing of a preview of a show and the insertion, deletion and control of slide positions and transitions.

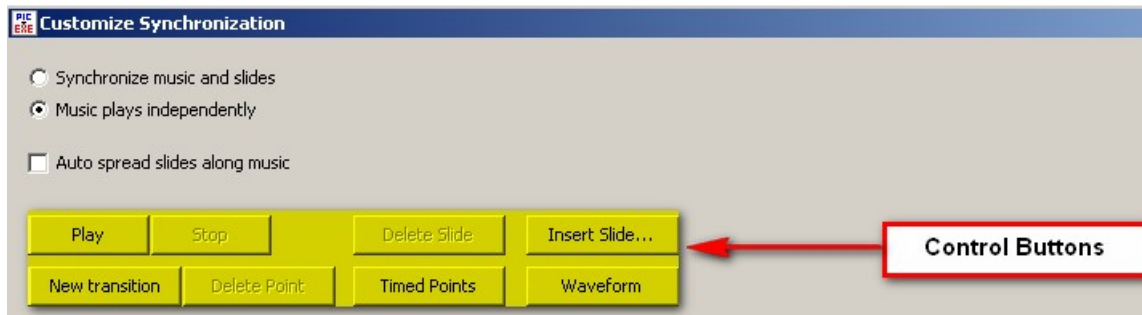


Figure 4.5

### 4.4.1 Play/Stop/Pause buttons

These two buttons control playing, stopping and pausing a preview of a slide show in the **Timeline** window. However this playing preview function will only work if a sound track has been added to the project. Once a sound track has been added, clicking on the **Play** button will start the preview from the beginning and the **Play** button legend will change to **Pause**. A blue triangle with a vertical blue line will appear at the beginning of the timeline and will start to move to the right. As the blue triangle passes each slide position, that slide will show in the small preview window at the top right of the **Timeline** window. Figure 4.6 below shows this situation during an actual playing preview.

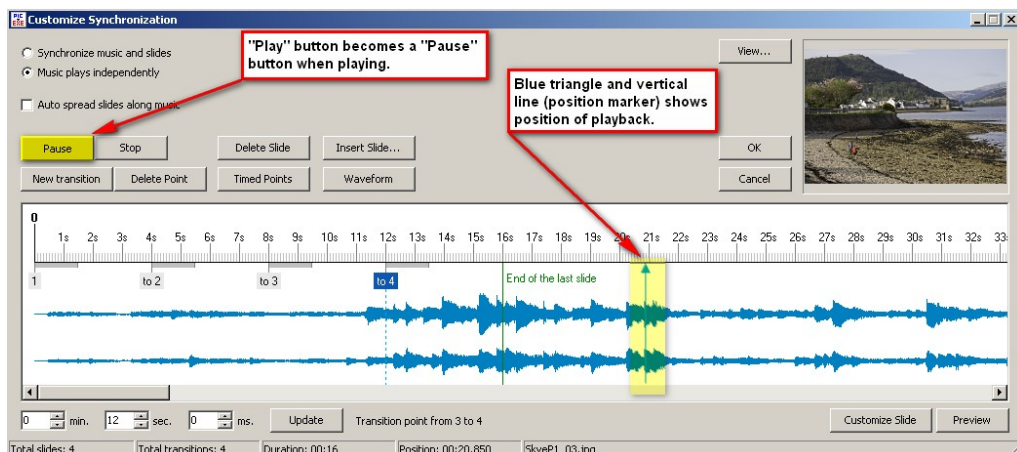


Figure 4.6

Obviously clicking on the **Stop** button will stop the preview and the blue **Position Marker** will remain in its current position. Also clicking the **Pause** button will pause playback and the button legend will change back to **Play**. Clicking the **Play button** will continue playing the preview from the current position.

It is important to note one feature of this playback function which can cause some difficulty. The **Play** function always starts playback from the beginning of the timeline. Thus if you want to play part of a long show from a position part the way through, it is necessary to :

- Click the **Play** button to start playback
- Immediately playback starts, click the **Pause** button.
- Now click with the mouse on the timeline where you want playback to start from. The **Position Marker** (blue triangle and line) will appear at this point.
- Re-click the **Play** button and previewing will start from the **Position Marker** point.

#### User Example :

You have created a show with a number of slides and have recorded an associated commentary plus background sound track and added this sound track file to the project. You want to check that Slides 30, 31 and 32, which have commentary associated with them are synchronised with the relevant commentary. You enter the **Timeline** window and start playing the preview. Quickly you click the **Pause** button to pause playback, then scroll the window along until you can see Slide 30.. Now you click on the timeline just before the beginning of Slide 30. The **Position Marker** will appear. Click the **Play button**. Preview playback will commence from this point and you can check that words and slides are lined up correctly. If the slide/commentary is not synchronised, you can manually move slides to match the appropriate sound track positions.

#### 4.4.2 Delete Slide/Insert Slide buttons

These two buttons enable you to insert and delete slides into a show. Normally the **delete** button will be greyed out until you click onto a slide. The button will now become active and clicking **Delete** will result in the slide disappearing from both the timeline and the **Slide List**. If you want to insert a slide, click on the timeline to position the **Position Marker**, then click the **Insert** button. This will open a window which will show all images in the directory selected in the **File Directory** window. Choose an image and, either double click it, or click on the **Add** button. The window will close and the selected slide will be added to the timeline at the point indicated by the **Position Marker**.

Again there is an important point to note about the use of these buttons. Inserting and deleting slides using these buttons, has no effect on the position of the other slides in the timeline. Try inserting and deleting slides in the timeline window and you will see that the other slides stay in their original positions. However if you insert and remove slides from the **Slide List** all slides after the insertion point will move along to allow the new slide to be inserted. Also if you remove a slide from the **Slide List**, the other slides will move back to fill the empty position. The actual way that this works is dependent on a check box **Hold time points** in PTE main window, as described in the **Main Window** description, Section 3.3.5.10.

### 4.4.3 New Transition/Delete Point buttons

These two control buttons are functions which have been carried over from Version 4.48. Due to a change in the method of operation between Version 4.48 and Version 5, their function is redundant. Their original function was to enable slides to be deleted and added from the timeline whilst still keeping the slides in the **Slide List**. However in Version 5, you can add and delete slides from the timeline using the **Delete Slide/Insert Slide** buttons described in Section 4.4.2 above. The operation of the **New Transition/Delete Point** buttons is rather counter-intuitive and deleting a slide does not always delete the slide selected and unexpected results can be obtained. Therefore I recommend that these buttons are not used. However, if all slides are deleted (see Section 4.4.4.7), then the **New Transition** button can be used to add slides one at a time in the same order as they appear in the **Slide List**.

### 4.4.4 Timed Points button

The **Timed Points** button, provides a facility to adjust the various slide insertion points. The button has 8 options as follows :

1. Add Arranged Points
2. Arrange All Points
3. Arrange Selected Points
4. Shift Points
5. Set Time Of Points
6. Shift All Points To The Right
7. Import Points From Another Project
8. Delete All Transition Points

#### 4.4.4.1 Add Arranged Points

When this option is selected, a confirm message will appear as shown in Figure 4.7.

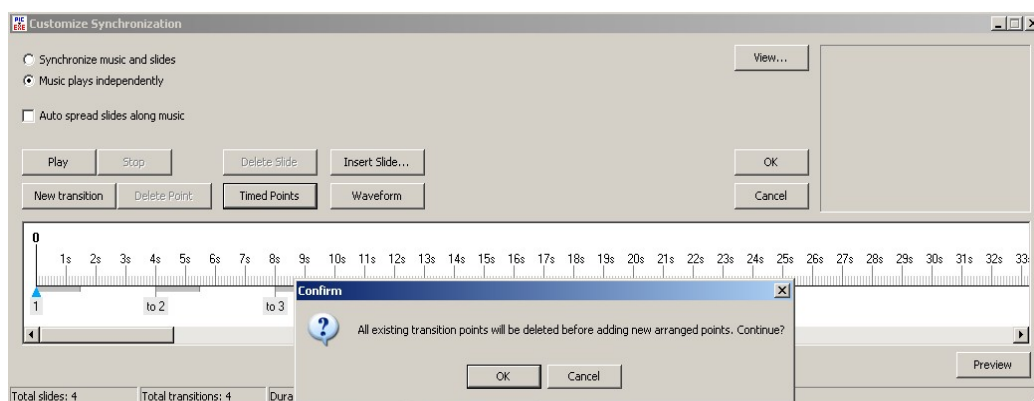


Figure 4.7

If the **OK** button is clicked, all the existing slides and transition points will be deleted and all the slides currently in the **Slide List** window will be added at equal intervals over the length of the soundtrack.

In Version 4.48 as has been previously mentioned, it was possible to arrange that slides were either automatically added to the **Timeline** or added manually. In Version 5, slides added to the **Slide List** are always added to the **Timeline**. Thus the use of this function is really redundant in Version 5, since you can always change the **Slide List** content and use the **Arrange All Points** function below.

#### 4.4.4.2 Arrange All Points

This is similar to the above, but arranges all the points without deleting them first.

#### User Example :

You decide to create a show with some slides you have taken. You choose the slides and add them into a PTE project file. You choose some background music of a suitable length and attach this to the PTE project. Now in the **Timeline** window, you select **Timed Points**, **Arrange All Points** and the slides will be distributed at equal intervals over the length of the background music track.

#### 4.4.4.3 Arrange Selected Points

This function arranges selected points at equal intervals along the timeline. To function, at least three points (i.e. slides) need to be selected. When the **Arrange Selected Points** button is clicked the slides will be spread at equal intervals between the first and last points. Note that slides can be individually selected or selected in a block using the **ctrl** and **shift** keys as in normal Windows operations.

#### User Example :

Figure 4.8 shows a timeline with 5 slides. Slides 1 to 4 are arranged at equal intervals. Slide 5 has been set at 26 secs to coincide with a particular point in the attached soundtrack and it is desired to distribute Slides 2 to 4 at equal intervals between Slide 1 and Slide 5. This can of course be done manually. However using this function makes the re-distribution very easy.

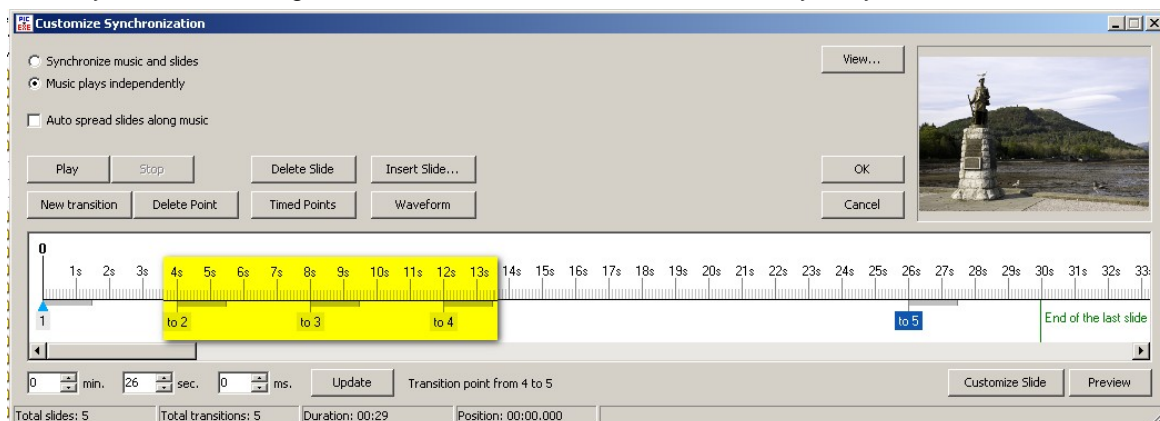


Figure 4.8

Select Slides 1 to 5 and click on the **Arrange Selected Points** button. The slides will be equally distributed between Slides 1 and 5 as shown in Figure 4.9.

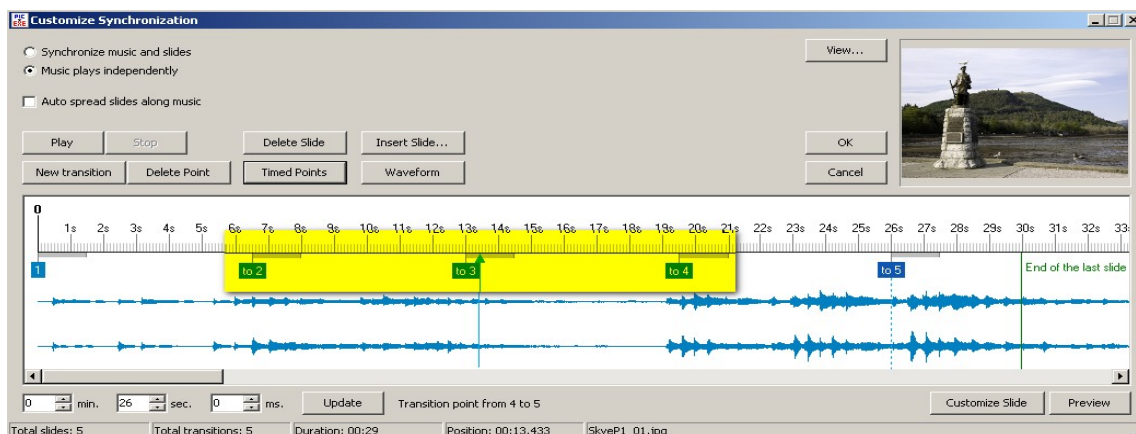


Figure 4.9

#### 4.4.4.4 Shift Points

This function allows all or a group of selected slides to be moved, either right or left, by a specified time interval. It is useful if a block of slides needs to be moved to the right to allow another slide or slides to be inserted and then moved back to the left into position.

#### 4.4.4.5 Set Time of Points

This function allows all the slide timings to be reset to a specified uniform setting. Suppose the slides have been synchronized to a music file and then need to be re-organised to a uniform time setting. This function allows this to take place, either on all slides or only on those slides which are selected.

Using this function has an unexpected result. Looking at Figure 4.9, the 5 slides are all equally distributed along the timeline. Now select Slides 2 to 4 and, using the **Set Time of Points** button, change their time duration to 4 secs (4000 ms). The result is shown in Figure 4.10 where Slide 5 moves back along the timeline due to the reduction in duration of Slides 2 to 4.

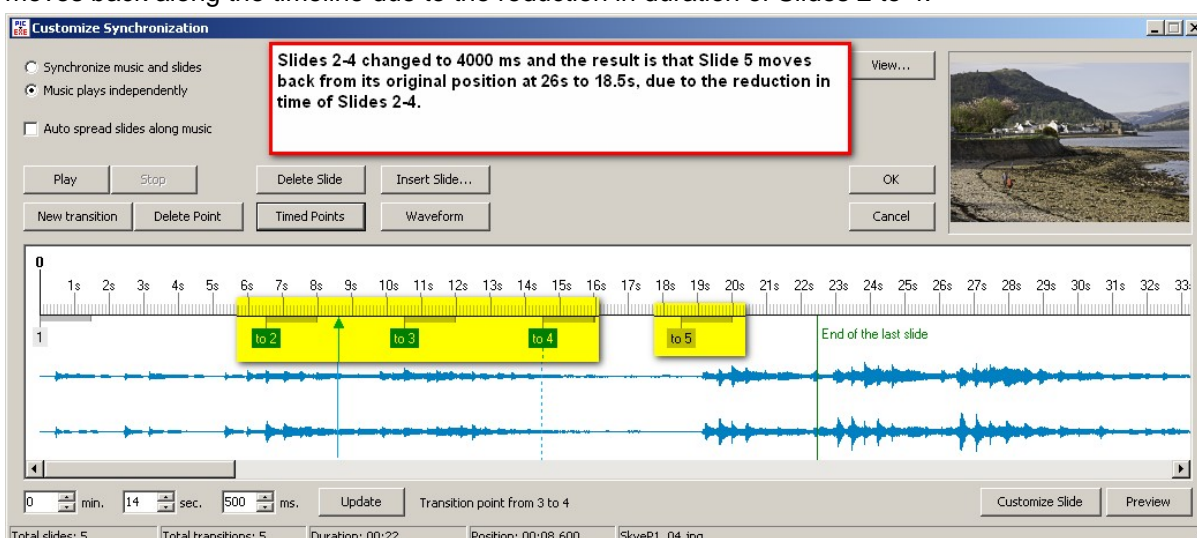


Figure 4.10

#### 4.4.4.6 Import Points From Another Project

This facility allows you to import points from another PTE project. To do this you need a new project which has the same number of slides as the project you are going to import the points from. Open the

**Timeline** window and select **Timed Points, Import Points....** You will be requested to identify the other project name and the timed points of this project will be automatically applied to the current project.

#### 4.4.4.7 Delete all Transition Points

This function deletes all transition points but leaves the slides in the **Slide List**. This can be a useful function if the arrangement of slides has got out of hand and you want to start again without removing the slides from the **Slide List**.

#### User Example :

Suppose you have realised that the slide order is wrong and want to start again. You can delete all the existing slides. Then go to the **Slide List** and re-arrange the slide order. Now go into the **Timeline** window and use **Add Arranged Points**. All the slides will be added and then manual arrangements can be used to select the position of individual slides.

#### 4.4.5 Waveform button

This button adds the soundtrack graphic into the **Timeline** window. In Version 5, the soundtrack waveform appears as soon as a soundtrack file is added to the project. As example of a typical soundtrack waveform graphic is shown in the blue waveform of Figure 4.10

#### 4.4.6 View button

The **View** button has 7 options as follows :

1. Don't Use Auto Scrolling
2. Auto Scroll – Style 1
3. Auto Scroll – Style 2
4. Auto Adding of Transition Points for New Slides
5. Zoom In
6. Zoom Out
7. Colour of Waveform

The scroll features alter the way the timeline moves across the window if the overall duration is too long to fit into a single window. **Style 1** gives a sudden change to the next portion of the window whilst **Style 2** gives a continuous scroll.

The **Auto Adding of Transition Points for New Slides** feature is redundant in Version 5 and performs no function.

The **Zoom** features enable the user to zoom in and out of the timeline to allow more accurate slide placing or to see more of the overall timeline.

Selecting the **Colour of Waveform** button brings up a typical colour picker chart from which various colours can be selected.

#### 4.4.7 Preview button

At the bottom right hand side of the **Timeline** window is a **Preview** button. Clicking this button without selecting any slide will result in a full screen preview starting from the first slide. If you select a slide and then click the **Preview** button, the full screen preview will start from that slide.

#### 4.4.8 Customise Slide

When you click on a slide in the **Timeline** window, an additional button appears at the bottom right hand side of the window as shown in Figure 4.11.

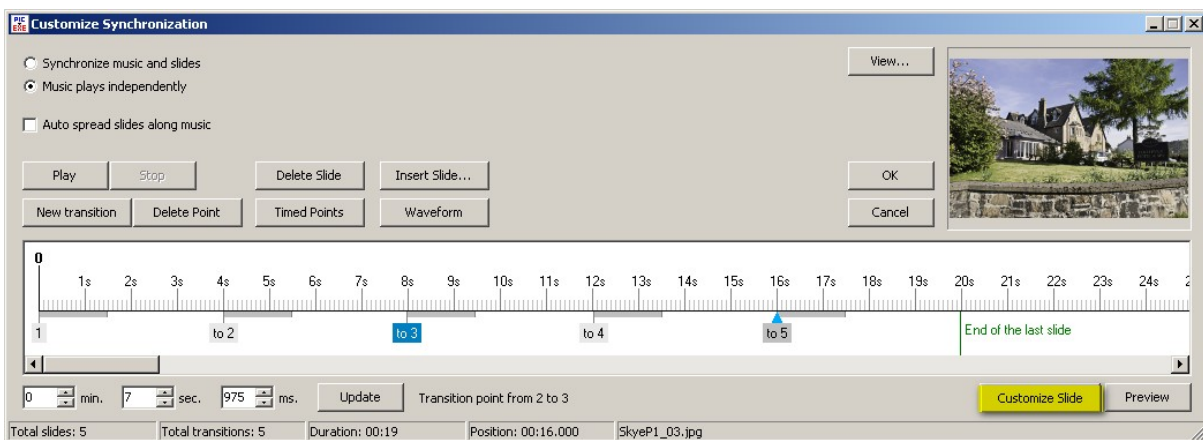


Figure 4.11

This button provides access to a set of tabbed dialog boxes in which the parameters for an individual slide can be altered. An explanation of how this function works is given in Section 5.6 on the Objects and Animation Editor.

#### 4.4.9 Update button

At the bottom of the **Timeline** window, there are three parameter adjustment boxes and an **Update** button. Figure 4.12 shows these features.

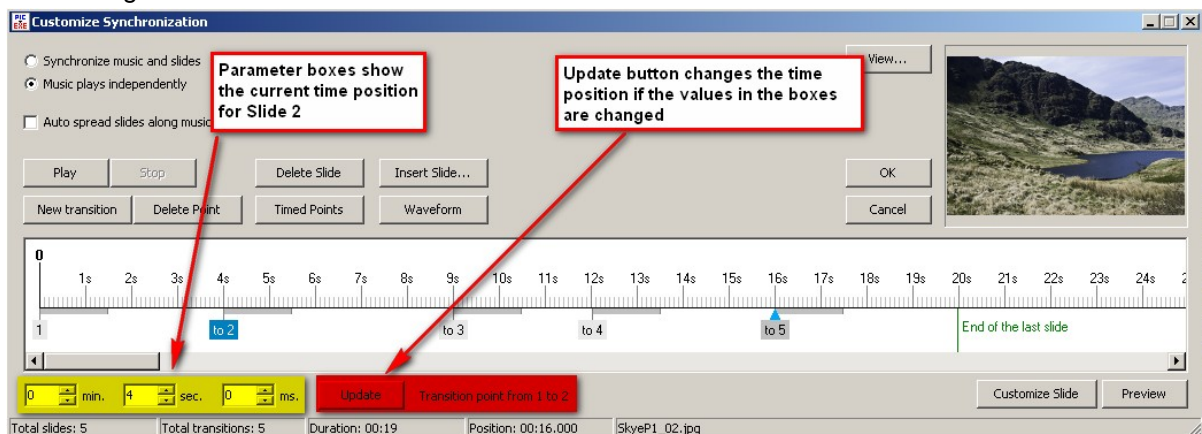


Figure 4.12

The parameter boxes contain the actual time on the timeline for the selected slide. By altering the values in one or more boxes and clicking on the **Update** button, the selected slide time point will change to the new time position. This is a useful facility if you want to set the time position of a slide accurately.

## 4.5 Status Indications

Figure 4.13 shows the **Status Bar** indications at the bottom of the **Timeline** window. This bar shows the number of slides and transitions, the total duration of the slides (does not include the sound track duration) and the position of the **Position Marker**.

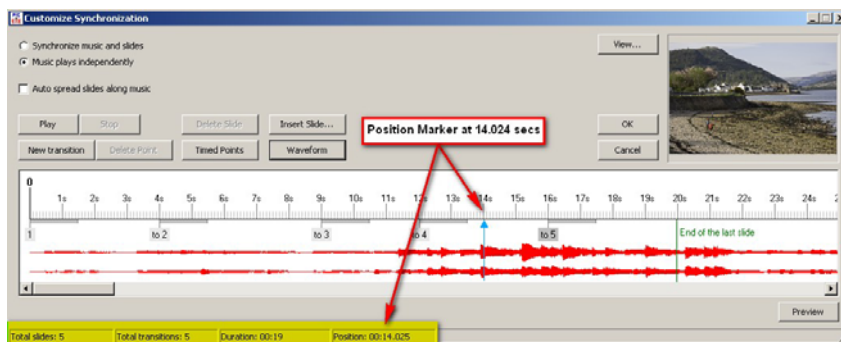
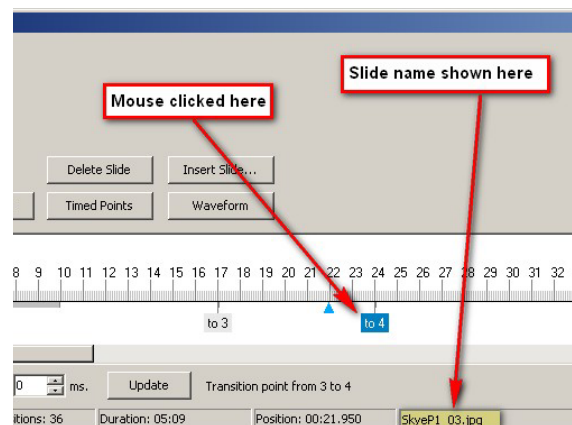
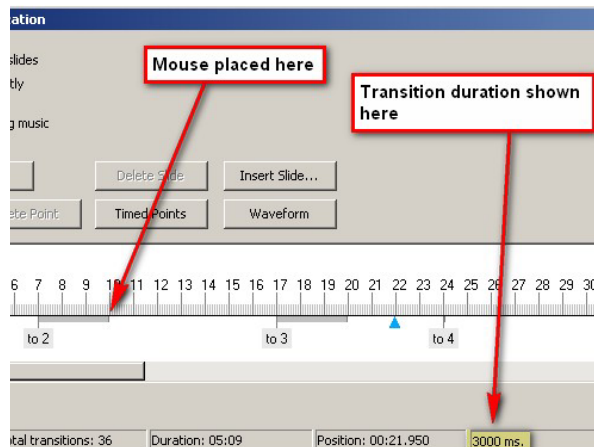


Figure 4.13

There are also two other status indications as shown in the screen dumps below. If you click the mouse at the end of a grey transition strip, the length of the transition will be shown in the status bar. Also if you click on a slide, the slide name will also be shown in the status bar.





## 5. OBJECTS AND ANIMATION EDITOR

### 5.1 Main Window

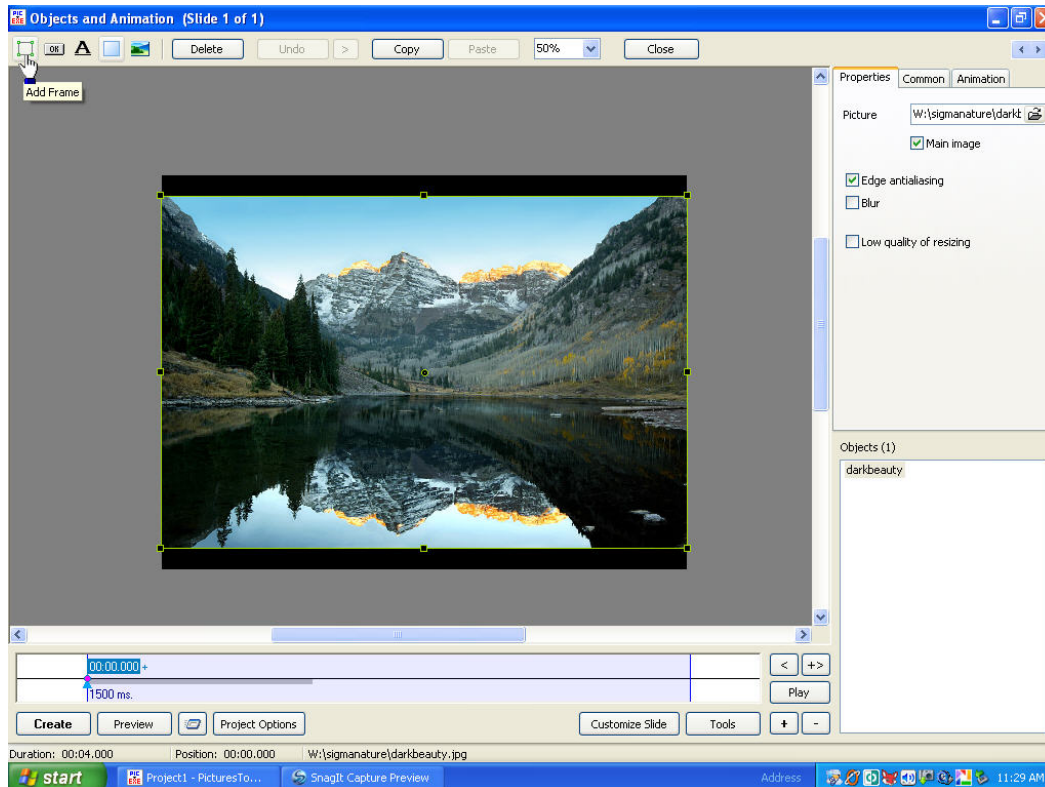
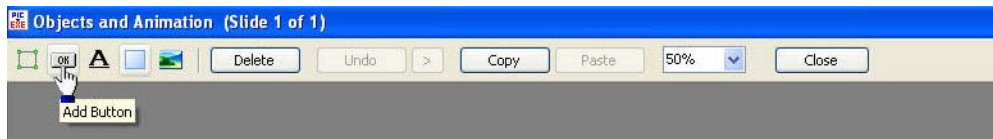


Figure 5.1

Figure 5.1 shows the arrangement of the **Main Window**. By clicking on the Objects and Animations tab on the Main Screen, we reach the area of PicturesToExe (PTE) 5.0 where we can create movement and dimensionality with our images. Along the very top of this screen we see an information bar in blue which tells us which slide we are working with. Of course in most cases we can tell by simply looking at the image on the screen, but the information also tells us how many slides and which of the total this particular slide represents. To the far right we see the normal Windows minimize (*the minus sign*) maximize and exit (*white "X" in red box*) icons. There are two ways we can exit from the Objects & Animation (O&A) screen and return to the main slide list screen. We can left click our mouse on the "X" or we can left click on the "Close" button located immediately beneath the blue bar to the right of the screen percent selection button. To be certain you don't accidentally exit the program, the "Close" button is preferred.

Beneath the blue information bar is a tool bar containing a series of icons that perform various functions. Some serve as "shortcuts" for features also available via right click in the Objects list while others have specific function we shall discuss. Figure 5.2 is a screen capture of just this area.

Figure 5.2



The first icon to your left (*the small green rectangle*) when clicked automatically elicits a "frame". Frames, like their solid counterparts "rectangles," are convenience items which can be used in several interesting ways. If you click on the frame tab which adds a frame and highlight the frame in the Object's List by left clicking the mouse with the cursor on the word frame, then subsequently add images, the frame becomes the "parent" and each image added to it become "children" of this frame which inherit zoom or pan animations applied to the parent frame. The frame itself can reside outside the visible area of the screen or it may be made transparent leaving its opacity at the default zero. A frame with 100% opacity becomes essentially a "rectangle".

Frames and rectangles are very convenient in animations where you want to simultaneously control the size or movement of multiple "objects". By making them "children" of the frame or rectangle, you can animate a single object (*the frame*) and make any number of other child objects behave likewise. Child objects, however, may have their own animations and positions independent of their "parents".

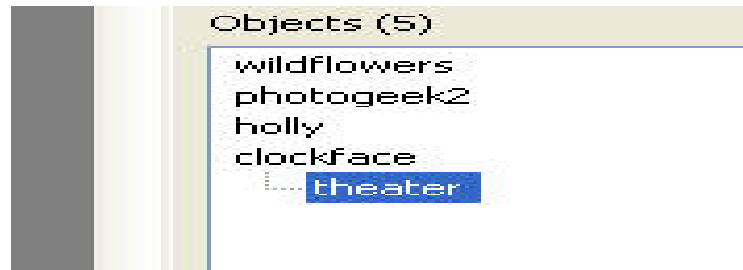
The next small icon to the right of the frame is the "Add Button" convenience selection. By clicking this icon you can add a "button" to your screen. Buttons can have a number of attributes. A button, when clicked, may be used to perform some desired action such as to exit the screen, send an email, run some other executable file such as another slideshow, or any of a number of interesting possibilities. Buttons can be adjusted for transparency, size, color, shape and so on. The text on the button can be changed in color or font, etc.

The third icon identified with a bold "**A**" is a shortcut to add text to your screen. Text can be of any available font, size and color and can be assigned mouse click "actions" like buttons. Text can be animated or have any opacity just as any other object. Text can also have completely adjustable drop shadows, etc. If you are using some unusual font not likely to be found on other computers and are making an executable slide show, it's best to use the "rasterize to PNG" feature to make your text into a graphic file which is immune to the presence or absence of a particular font on the computer being used to play the executable slide show. Under the properties tab you will find a box to check if you wish to "rasterize" your text and make a PNG file of it to be used as an object rather than simply as text.

The fourth button is the "rectangle" button. Rectangles, like their frame counterparts may be used in a variety of ways to facilitate animations. They may also have various opacities as well as gradients and colors so may also be used advantageously as backgrounds for other objects or images.

The fifth icon is the "add image" icon. Clicking this button allows you to browse for a desired image. If you want the image chosen to be an "independent" object, that is to have no affiliation in a parent/child relationship with other objects, then be sure that you click below any objects so no object in the objects list is highlighted before clicking on the "add image" icon. You can tell whether an object is independent or affiliated with another by its relative position in the Objects list. Figure 5.3 shows an example of each so you may more easily tell the difference:

Figure 5.3



In Figure 5.3, the images wildflowers, photogeek2, holly and clockface are independent objects while the object theater is a child of the object clockface. So if the objects are left justified in the Objects list they are independent of other objects. If they are inset, they inherit the attributes for pan and zoom from their parent above.

The sixth icon is the "delete" icon. When an object (*any image, text, etc., in the Objects list*) is highlighted, and you click the "delete" icon, this object is deleted from the Objects list. The object is not deleted from your computer or affected in any way, it's simply removed from the Objects list. If the object has "children" the children are also deleted. You can tell when an object is "selected" in the objects list because it will be surrounded by either a color or grey box as seen above. "Theater" is selected. If you were to click on "delete" then "theater" would be deleted.

The seventh icon is the "undo" icon. If you inadvertently delete something or perform any change, clicking on the "undo" button will revert to the previous state. So it essentially reverses the prior action. The "undo" remembers keystrokes so you can "back up" if you make mistakes.

The eighth icon that looks like a forward "arrow" is a "redo" icon to "undo" the "undo". Experiment with them to see how they interact.

The ninth and tenth icons are "copy" and "paste". Anything "selected" may be copied and pasted. Copy not only copies an image or object, but also copies all attributes such as keypoints, transitions, etc., associated with the object. These may be used very effectively to save much time especially if you are animating a series of repetitious actions or animations.

For example, let's say you had five objects in the Objects list and wanted to use them with another slide. You could select all of them at once (*click on the first object to highlight it, then hold the keyboard shift key down and click on the last object*). All objects will become highlighted. Next click on "copy" then go to the desired slide, place the cursor in the desired position where you want to duplicate the objects and animations selected and click "paste". That's all there is to it! This is a very effective way of quickly duplicating a particular set of animations for a different slide or even using all or a portion of a slide show in a different slideshow. This will be covered later.

The eleventh icon is a very important one, so we will spend a little more time with it. Figure 5.4 shows a quick screen capture of the "Percentage of View" icon.



**Figure 5.4**

As you can see above, the Percentage of View has screen views running from 500% to 10% as well as the default "Auto". This wide range is necessary for a number of reasons. For example, when you pan a large and wide panorama image, you might not be able to actually see the little square "handles" for manipulating the screen size if you had the percentage set to 100% but you could easily see them if the percentage were 10%. What if you wanted some objects residing just off screen to scroll across or up at some specified time on the timeline? Then by setting a small percentage you actually "see" the grey area outside of the viewable screen represented by the black rectangle. You can then easily position the objects where you wish making it convenient to move them via the keypoints along the timeline to appear later on and perform the desired animation.

The high percentages are very helpful when you wish to "match" precise positions and object sizes from one slide to the next. An example of this might be that you decide to zoom in tight on one of your panorama shots. But you can only zoom to about 100% of the original then if zooming further, you begin to lose resolution and sharpness. But what if you had decided to make a few mini-panoramas using a longer focal length lens of specific areas of detail interest shown in more distant views from the large panorama? Then you might want to zoom to 100% at one of these interest areas then seamlessly make a transition to the mini-pano closeup but perfectly match the 100% zoom from the main panorama before continuing the zoom in for yet more detail. This is easily accomplished by temporarily adding the mini-pano (*which will eventually represent a separate slide*) as an "object" along with the main panorama. Set each to 50% opacity so both can be seen simultaneously, then zoom and pan the mini-panorama to precisely overlay the main panorama at the point of interest. Then copy the pan and zoom numbers and apply them on the following slide containing only the mini-panorama so that a perfect transition with precise match occurs when you continue the zoom seamlessly on the following slide. Once the numbers are copied you can then delete the mini-panorama as an object, return the main panorama to 100% opacity, and by virtue of the extreme close-up afforded by the higher percentage zoom such as 500% you have accomplished what would otherwise be difficult or impossible.

Finally we come to the next to last icon, the "close" icon. As recommended earlier, this is the "preferred" way to leave the O&A screen and return to the Main slide list screen.

Last, but certainly not "least" on the tool bar we come to the two tiny right and left arrows just underneath the small red box with the white "x". These are your navigation icons to move forward and backward in the slide list. When you click the right arrow you go to the next slide in the slide list but without leaving the O&A environment. Likewise when you click the left arrow you go backward a slide sequentially until you reach the first slide. By observing the blue information bar on top you will know exactly which slide you are on. This concludes the top tool bar explanation.

## 5.2 Properties, Common and Animation Tabs

### 5.2.1 Properties Tab

Let's begin with the "Properties" tab. The Properties tab shown in Figure 5.5 gives you information about the image or object. It tells you where it is located (*in which folder*) on your computer, whether it's the "main" object on the objects list, allows you to set edge antialiasing (*recommended*), lets you decide whether to apply blur or not and set the "quality" of resizing.

The edge antialiasing is a good feature to simply leave checked. In fact there would be very few times when not using it would be desired.

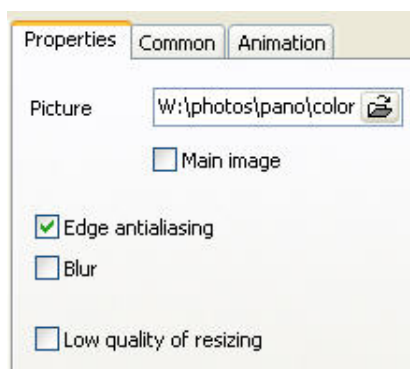


Figure 5.5

Blur is a feature which is very handy to minimize the flicker or "pulsing" which happens when we zoom on a very sharp image. With animation, when an image is zoomed there are actually multiple intermediate images created. Some of these images are of sizes which show what is commonly referred to as "aliasing". By slightly blurring the image it becomes possible to zoom without seeing this flicker or pulsing as the image passes through these critical sizes. If you wish to pause at the end of the zoom and show a close-up with an extremely sharp rendition of this image, simply duplicate the slide in the slide list and use about a one second fade transition to the new slide without the blur in the second side. The change will be virtually undetectable except the image will become very crisp and viewers will be unaware that the slide was actually duplicated.

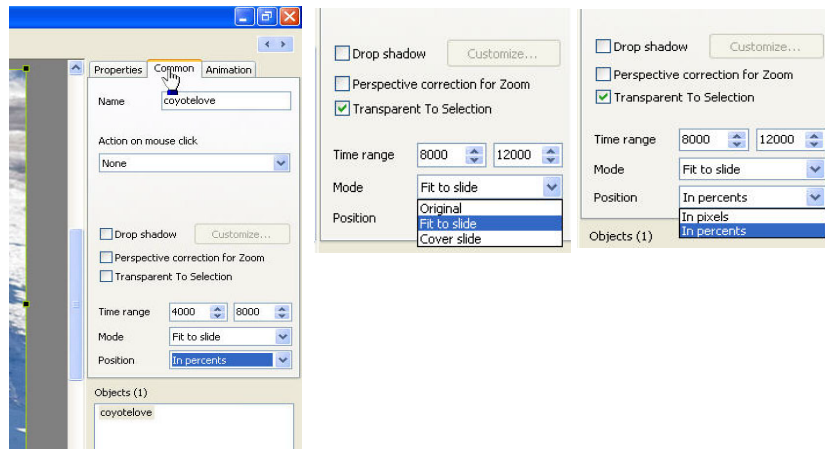
Low quality of resizing is a feature which is useful if you are finding small white troublesome lines above or below your image during transitions. The "low quality of resizing" is actually more accurately called "nearest neighbor" resizing. It isn't so much "low quality" as it is "imprecise" resizing. Since it stops at the pixel level rather than the sub pixel level of accuracy this line is eliminated in some cases. For most this feature need not be used.

### 5.2.2 Common Tab

Figure 5.6 shows another screen shot showing the second tab of three, the "Common" tab. The common tab shows the name of the selected file, lets you set any actions you desire on a mouse click for that object and gives you the opportunity to apply and customize a drop shadow if desired. It displays the time range for the slide displayed in thousandths of a second and even though it has up and down arrows, you shouldn't try to change the time here but rather do that through "customize slide". It also allows a choice of mode. The mode defaults to "Fit to Slide" but you can also choose

"Cover slide" or "Original". The "Original" mode is the full size of the slide and is not normally something one would want to use because it would vary depending on the screen resolution of the computer the show was played on. Cover slide and Fit to Slide are preferred in most every case.

Figure 5.6



You may set the position in either pixels or percent. Percent is the default but if you need precise positioning match you may want to experiment with using "Pixels".

The "Perspective Correction for Zoom" block lets you essentially simulate a movie camera zoom. It's best to experiment with this along with linear and non-linear zooms to get the desired effect.

Finally, the block "Transparent to Selection" is one which similar to "Ignore Objects Not Selected" feature (*found under the Tool tab at the bottom of the screen and explained later*) lets you click on an object to select it then manipulate it with the bounding green rectangle without affecting other objects. In short, it's a very convenient feature allowing precise selectivity for moving and zooming objects when there are multiple objects on the Objects list. The difference is that this works in the slideshow as well as in the editor. So if there is an object below and thus invisible from the main screen and the main screen is set to "transparent to selection" that object beneath can be selected and "activated" if it has an action attribute set.

### 5.2.3 Animations Tab

Figure 5.7 shows a screen shot of the third tab, the **Animations** tab. Under the this tab we deal with Pan, Zoom, Rotate, Center, Opacity and Keypoint time.

### 5.2.3.1 Pan Values

Pan and Zoom each have horizontal and vertical aspects, that is we can move the object left and right or up and down. As you see the animation tab screen, the block on your left for the Pan deals with left and right (X axis), while the block on the right deals with up and down ("Y", axis). When an object is first placed in the "Objects list" the pan values are defaulted to zero. A positive value in the left or "X" axis block indicates that the object has been shifted to the right as seen from the observer's perspective. A negative value (*preceded by a minus sign*) indicates that the object has been shifted to the left. The small "up" arrow increases the shift to the right while the small "down" arrow increases the shift to the left for the "X" axis.

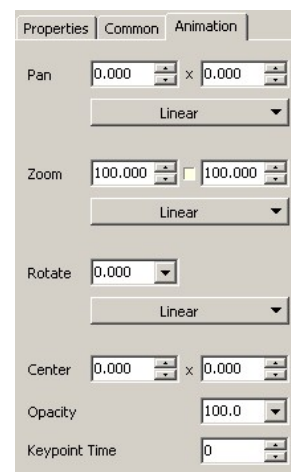
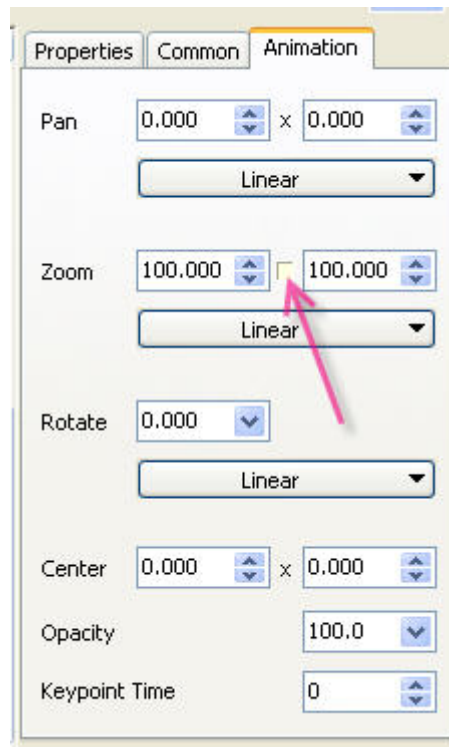


Figure 5.7

The block on the right deals with the vertical, or up and down "Y" axis. A positive number lowers the object on the screen while a negative number raises the object. The small "up" arrow serves to increase the positive number or "lower" the object and the small "down" arrow raises the object. This may seem counter-intuitive, but this is how it works. As with all number blocks, values may be typed in, changed by using the up and down arrows or will automatically change to reflect the current position of the image (*object*) when it is visually manipulated with the green bounding rectangle or moved via mouse click and hold inside the green bounding rectangle.

### 5.2.3.2 Zoom Values

The zoom block works as the pan block in that you may either use the up and down arrows to change values, type them in or they will automatically change when you use the bounding rectangle to manipulate the zoom. The default is always 100. This number simply reflects the fact that the image has not been altered with zoom and is exactly as is was when the object was added to the "Objects list". The small blue arrows raise or lower the zoom values. The up arrow makes the image larger, the down arrow makes it smaller. In the default mode it doesn't matter whether you use the "X" or "Y" axis to change the zoom up or down because they are coordinated perfectly. Changing one changes the other in perfect synchronization. There is, however one very important difference between the Pan and Zoom feature. There is a small square box (*see red arrow*) between the "X" and "Y" axis for zoom. This box can have two different appearances. The default is shown in the screen capture and is looks like a small depression. But when the left mouse button is clicked while the cursor is on this box, the depression changes to an upraised "button" appearance.

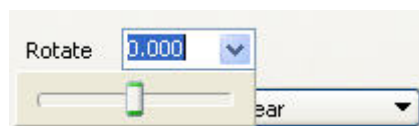


As explained above, when in the default depression appearance, zoom values for the "X" (*horizontal*) and "Y" (*vertical*) size are precisely coordinated. So regardless of whether the up and down arrows are clicked or the bounding rectangle around the object in the "View," is manipulated or values typed in, the object will get larger or smaller accordingly in perfect proportions. But if this little square is

clicked on so that it looks like a "button" then the "X" and "Y" axis are separated and may be manipulated independently. This means you can either "squish" or "elongate" on either the axis. This amazing feature allows 3D simulations that make PicturesToExe a very powerful program. For example, it's possible to simulate flipping a coin, turn pages, or any animations which requires distortion on the "X" or "Y" axis by using this feature to change the perspective. With the "X" and "Y" axis separated, the "up" arrow spreads the image horizontally or vertically while the "down" arrows compress the image. As with the Pan feature the left side deals with the "X" axis while the "Y" axis deals with the "Y" axis.

### 5.2.3.3 Rotate Values

Clicking on the "rotate" arrow produces a "slider" which may be used to rotate the object up to 360 degrees clockwise (*slide to right*) or counterclockwise (*slide to left*). In addition, you may alternatively type in "any" value in degrees in the box above.



So there is no practical limit to the amount of rotation possible to set for any object. Below, when the "center" is discussed, more about rotate will be revealed.

### 5.2.3.4 Center Values

Center is both a simple and an extremely complex feature. With PTE the center can be moved without moving the image or its possible to change the values and move both the image and the center. Before continuing, let's discuss a bit about what the "center" feature is all about and how it relates to the "rotate" feature. The default of "zero" for the center refers to the center of the rectangle that describes any graphic image. When the center is at zero and any rotate function is used, the image rotates about this imaginary center point. The center point is graphically indicated by a small green circle as seen below:



As seen by the red arrow, the default is to have the center in the center of the rectangle that exists with any computer image. This rectangular "box" is not always seen, such as when a GIF or PNG image with transparency is used and the "objects" appears to float on the screen without seeming to have a rectangular block attached, but even though this rectangle is sometimes invisible, it really does exist and the "center" always defaults to the center of the rectangle, invisible or not. This means that the center of rotation may not be exactly where you want it to be. For example, if you have a PNG image of a coin and you wish to rotate this coin, if the coin is not centered in the invisible box in the PNG file the default rotation might not be perfectly symmetrical. But you can always "visually" see where the program puts the center by this small green circle which appears in the "View" inside the green bounding rectangle.

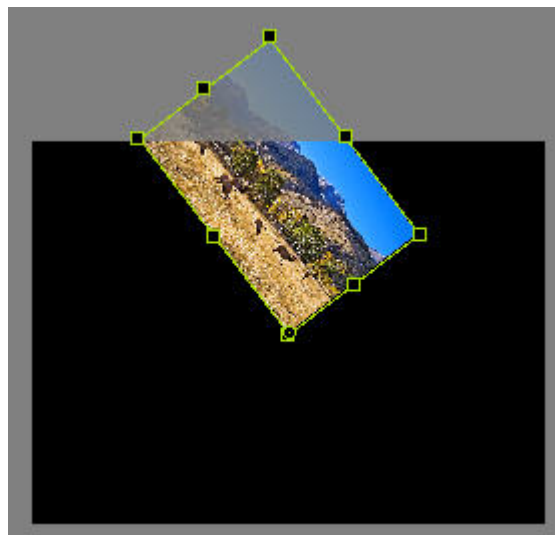
Being able to change the center anywhere on or off the visible area of the screen is an extremely powerful feature; actually one not found in other presentation slideshow software programs. This



feature allows complex motions and even bezier curve simulations. When used with the unlimited opacity feature, parent/child relationships and rotation, it's possible to have precise and complex animations such as objects circling the screen while rotating on their own axis, etc.

To move the center of rotation while keeping the object or image centered on the screen, place the mouse cursor over this small green circle, hold down the left mouse button and Keyboard Shift key simultaneously and "drag" the center visually anywhere you wish. The numbers in the left and right boxes beside the "center" indicator will change accordingly. If you change the numbers manually either by using the up and down arrows or typing in values, the image itself will probably shift.

Using the "up" arrow on the left set of center boxes moves the image to the left while keeping the green circle in the center of the screen. Using the "down" arrow moves the image right while keeping the green circle in the center of the screen. Using the "up" arrow on the right side moves the image up while keeping the green center circle centered on the screen and using the "down" arrow on the right moves the image down while simultaneously keeping the green center circle centered on the screen. The result



of placing the number 100 in the box on either side then rotating the image is shown below. The image itself was reduced in size for the example. As can be seen, the centering circle remains in the center so that when the image is rotated, it pivots on its bottom right corner. Had minus 100 been entered into the two blocks, the image would rotate on its top left corner. If minus 100 were placed in the left box and positive 100 in the right box the rotation point would be the bottom left and conversely if negative 100 were entered in the left box and positive 100 in the right the image would rotate on the top right corner. So it's entirely possible to get any kind of offset rotation desired by manipulating these numbers or leaving the image centered and moving the center as described above. The best way to truly learn this feature is by experimentation because the possibilities are endless when you consider multiple keypoints along with being able to change the center for each keypoint.

### 5.2.3.5 Opacity Value

The opacity can have any value between zero and 100. The default is 100%. Opacity can be changed between any keypoints so the image can be made to fade out completely and become invisible or any combination between. By having two images occupy the same space on separate layers and having each set to some less than 100% opacity, it's possible to make many interesting effects. By having the capability to set opacity to zero it's possible to have an object which is in a child relationship to another invisible object and occupying the same position perform the animation of the hidden (*invisible*) parent while simultaneously performing its own animation. This is how it's possible to have an object circle the screen while performing its own independent rotation, etc. It's also possible with this feature to create invisible menus and other sophisticated and very interesting actions.

### 5.2.3.6 Keypoint Time Value

This feature, explained in detail in the Keypoint section, determines the actual time from the beginning of the current slide for any highlighted (*selected*) keypoint. This differs from the time displayed on the keypoint itself, which indicates the time from the beginning of the slideshow rather than from the beginning of this individual slide. The value in this block is in thousandths. So a number 1000 would

represent 1 second, 4000 would equal four seconds, 500 would equal a half second, etc. Numbers can be typed in, the "up and down" arrows may be used or they will change automatically to reflect the proper time as keypoints are entered or slide along the timeline.

### 5.2.3.7 Animation Linearity

The default for any movement or animation between keypoints is linear, but this can be set to an infinite number of non-linear values. There are three non-linear presets that can be *programmed* (*smooth, accelerate or decelerate*) or the user may elect to alter the values to create any number of custom appearances. Before getting into the "how to" of this, first it may be useful to explain the presets. The default - linear - means the motion begins, happens and ends at a consistent speed. Sometimes there is a problem with this because of human perception. As objects get smaller but move at a linear speed our perceptions tend to make us think that they are speeding up. Conversely, when objects get larger yet move at consistent speed such as in a zoom, we tend to perceive that they slow down. Also, there is the issue of sudden movement. That is with a linear start to movement as well as the linear stop, things appear to "jerk" or happen very suddenly. In fact, they do indeed start and end abruptly. By pulling keypoints for the start and end of a motion into the ending or beginning times for the previous or next slide, it's quite possible to use linear motion without the viewer seeing an abrupt start or stop, but if one chooses to not do this, then perhaps one of the non-linear movements would be preferred. In practice, and by statistical survey, the majority of users either use linear or "smooth" non-linear, but the other options are there if desired.

First let's discuss "smooth". Smooth starts very slowly and ends very slowly with a somewhat linear movement in the center. Because timing between keypoints is precise, the slower motion for the start and end must be compensated in the middle. So the actual visual "curve" of a smooth non-linear motion is a sloping curve at the start (*uphill*) and a sloping curve at the finish (*downhill*). The center is a bit shorter of duration (*faster in time*) than a linear motion. So the image begins to move very slowly then accelerates, reaches stasis and finally decelerates.

Next let's discuss "accelerate". Accelerate begins slowly and continues to increase in speed until an abrupt ending. This may be useful for certain effects. The curve for this is a linear line beginning at zero and continuing upward until the end.

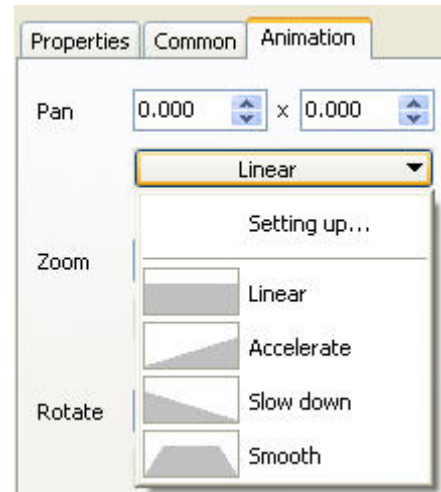
"Decelerate" is the opposite of accelerate. The motion begins abruptly at full speed then slows more and more until it ceases. The curve for this is a linear line beginning high and sloping downward to a point at the end.

### 5.2.3.8 How to set non-linear motions

It's beyond the scope of this documentation to explain all the background and reasons why this is necessary, but suffice it to say that following is the "easiest" way found to set non-linear motions. Though it's "possible" to set non-linear motions on a single slide of differing types between different keypoints, it is not advised unless the user has thoroughly experimented and is completely familiar with the results which may indeed be unexpected. So for the purpose of this guide, the assumption will be that a single non-linear effect will be used on a single slide between keypoints.

First let's look at what we see **when we click on any keypoint** and determine that we wish to use a non-linear effect. For the purpose of this guide, we will use only "smooth" as an example. Setting accelerate or decelerate are done in an identical manner but instead of clicking on "smooth" click on either accelerate or decelerate where this instruction indicates "smooth"

Following is a screen sample obtained by clicking on the down arrow to the right of the word "Linear" in the Animations tab. Since linear is the default, nothing need be done to choose it, just place keypoints, adjust pan zoom and rotate as desired and that's it. In the sample being used, an image has had the original plus three keypoints set. The image has been zoomed in on the first keypoint, then cloned to hold the zoom for a time and finally zoomed out. Here's what is seen first when clicking on the down arrow. Observe the graphics and it's evident by the slopes exactly what each non-linear function does.

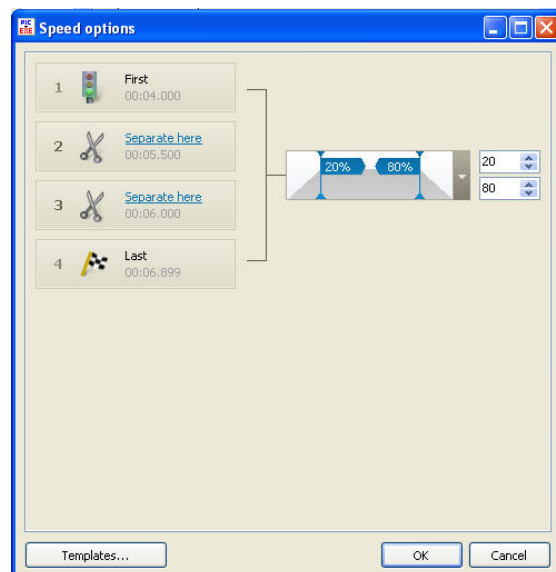


The next step is to place the mouse cursor over the "smooth" curve in the block containing the word "Smooth" under the "Pan" blocks and left click. The next part may be counter-intuitive, but necessary as will be explained shortly. Click on the down arrow next to Zoom and do likewise as well as for Center.

The reason this is done for pan, zoom and rotate, even if using only "one" of the three in the animation is that these are frequently interconnected. For example, if using the bounding rectangle to zoom an image, invariably you will move it a bit sideways. Even a "tiny" bit of movement will change the pan numbers. Even the slightest change in rotation will change the rotate numbers. If these numbers are changed in any way and we have not also set them to smooth, the results will be unexpected and frankly "ugly". So just do it! When "smooth" is clicked on, the text indication will change from "Linear" to "Smooth". When all three (*pan/zoom/rotate*) say smooth, we are ready for the next step. **The next step is extremely important and can not be ignored unless there are only two keypoints in your animation.**

Again click on the down arrow starting with "Pan", this time next to the word "Smooth" and open the drop-down menu once again and it will look exactly like the above except the button which said "Linear" will now say "Smooth" Once you have the Pan drop down then click under the "Pan" button on "Setting up..." and the following pop-up will appear:

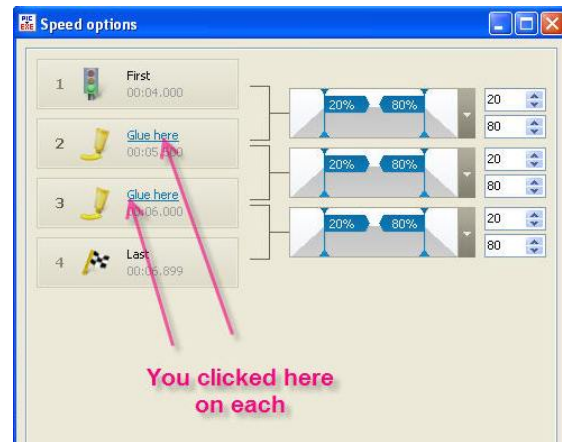
This pop-up shows four keypoints references numbered one through four. The top one has is marked "first" and the final one is marked "Last". There will be a different number of keypoints corresponding to the number in your own individual case. There will always be a first and last, but the number of intermediary keypoints will vary greatly for complex animations. The curve at the right tells the viewer that with a slope at the beginning and at the end and the percentage of 20% at the start and 80% at the end is standard for a "smooth" non-linear action. As will be explained shortly, one "can" change the slope, but probably will never need to do so.



Notice the small scissors icons on keypoints 2 and 3. These plus the bracket connecting the first and last tell you that they are "glued" together. To make the "smooth" non-linear motion we need to separate these. Once they are separated, they will say "glued". This is a bit counter-intuitive once again. If you look at the bracket instead of the scissors or glue it will make more sense. In any case,

we need to place the mouse cursor over the "separate here" text and left click. When this is done the following will appear:

The red arrows indicate where you clicked on "separate here" and now the text has changed to "glue here". Notice that the brackets now indicate that the keypoints have been "separated" into their three groupings of 1-2, 2-3, 3-4. The slopes indicate that between each keypoint we now have a "smooth" non-linear motion programmed.

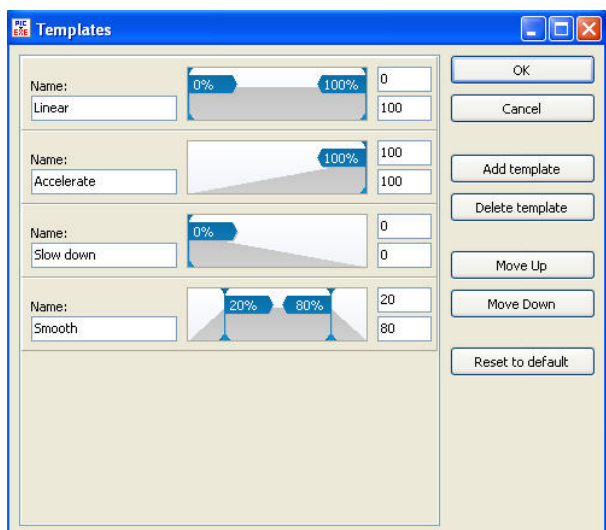


We now must do the same for Zoom and Rotate. That is click on the "smooth" button, click on "setting up" then separate all keypoints by clicking on each "separate here" line. This is extremely important. Do this for Pan, Zoom and Rotate. **Remember that a keypoint must be highlighted before you do any of this.**

Once this has been done for each of Pan, Zoom and Rotate, the indicator which said "Smooth" will have changed to now say "Custom". The "only" time this will not happen is when there is only two keypoints (*first and last*). If the logic for this escapes you, you are not by yourself, but that's the way it is programmed so deal with it and you will soon be enjoying non-linear motion as well as linear motion. Remember, do this for Pan, Zoom and Rotate regardless if you have only used one of the three in your animation. Again, it's only necessary to highlight one keypoint before doing this and it doesn't matter which one.

It may have been noticed that it is possible to change the curve at the front or at the rear of the action. It's a very powerful feature and once thoroughly familiar with the process you may want to experiment. If you create a particular custom curve that you want to save, just click on the "template" button at the bottom left and the following will appear:

You may create any custom template you wish and save it by just clicking on "add template". When you do this another block will appear on the bottom of the existing four and the curves may be manipulated any way desired and saved to be used in future animations. It's also possible to delete any template added using the "Delete template" button. These are advanced features that will take some experience and experimentation to become thoroughly familiar with.



Everything covered using the "Smooth" non-linear function applies to "Accelerate" and "Decelerate" as well. The procedures are identical for each.

## 5.3 The Objects List

The "Objects list" found on the bottom right of the screen provides a place to see, add, delete, select and manipulate objects. There are three ways to add objects to the Objects list.

1. Put the mouse cursor beneath any listed objects and left click in the white area. Then right click, and from the drop-down menu add objects (*text, images, etc.*).
2. Right click in the grey area of the screen view and choose "add" from the drop-down list.
1. Click on the top tool bar "add image" icon as explained earlier.

In the "Objects list" as explained earlier you can add or delete objects, but you can also manipulate their relative positions on "layers" and set their respective parent/child relationships. PTE has a very sophisticated layer capability which is manipulated here in the Objects list. Figure 5.8 shows samples of multiple objects in the Objects list and how to manipulate them:

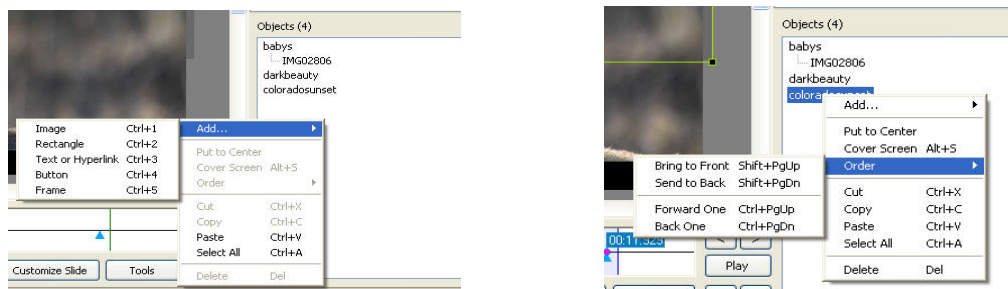


Figure 5.8

As seen above, by first left clicking then right clicking in the white area with no objects selected you can bring up a menu that lets you add things (*objects*) to your Objects list. You can also use the keyboard shortcuts of Ctrl 1 through Ctrl 5 to add respectively an image, rectangle, text or hyperlink, button or frame. You get the identical popup box by right clicking in the grey area outside any green bounding rectangles on the screen view. This is easiest if you have a low percentage such as 10% set.

On the right side above, notice that one of the objects was highlighted and the "Order" feature was selected. This feature lets you move objects in the list to different layers. The object first in the list from top to bottom will be visible. Objects beneath will only be visible if the top layer is smaller in physical size or if its opacity is set to less than 100%. But when objects are smaller than the viewable area of the screen and moved about by pan actions they will pass in front of and behind each other depending on their respective layers. So you can select an object by left clicking on it then moving it to the front, back or forward or backward a layer at a time. You can also use the keyboard shortcuts Shift+PgUp to bring to front, Shift+PgDn to send to back, Ctrl+PgUp to move up a layer and Ctrl+PgDn to move down a layer. You can also cut, copy, paste, select all or delete via this menu. Though you can select several rather than all by using Ctrl left click you can't manipulate more than one simultaneously other than copy/paste.

## 5.4 The Timeline and Associated Choices

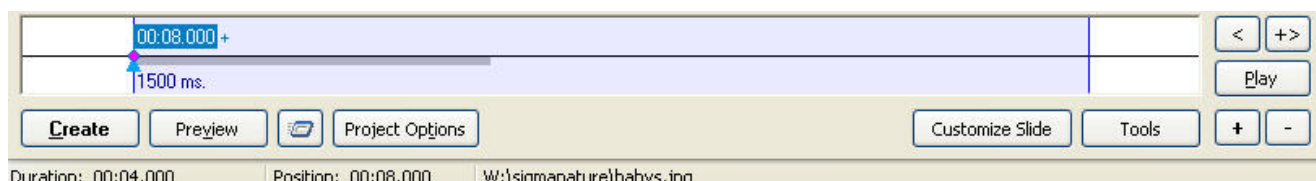
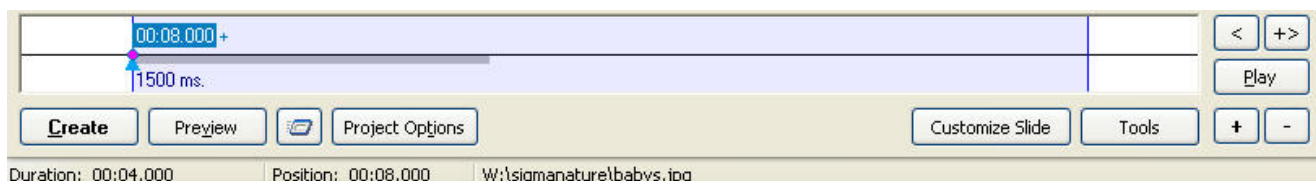


Figure 5.9

As seen in Figure 5.9, the timeline has a number of features that we will first describe then examine in some detail. On the top we find a light blue rectangle divided into two parts by a horizontal line. On the top left we find a small blue rectangle with white numbers inside. This is the starting keypoint which begins with the very first image in the slide list. A keypoint at zero time is automatically inserted and this is where everything begins. In the sample the indicated time is eight seconds because this isn't the first slide in the list. Underneath notice the small blue "arrow" pointing upward and the 1500 ms indication. The small blue arrow marks time along the timeline beginning with in this case at 1500 ms. The default transition time is set to fifteen hundred milliseconds. This represents a precise time of 1.5 seconds for whatever transition has been set. The grey bar extending to the right stops precisely 1.5 seconds after the start point. Should you change the transition duration the grey bar will change size to reflect that exact period on the timeline where a transition is occurring.

To the far right you will find two icons. One has a left arrow and the other a plus sign and a right arrow. When keypoints are added, clicking on the right arrow will advance the cursor to the right highlighting each keypoint further along the timeline in succession. When you manually move the mouse cursor in advance of the starting keypoint and click, then clicking the left arrow will move the cursor to the left highlighting each successive keypoint until it reaches the first one. This is a very convenient way to move through keypoints when they are extremely close to one another as they sometimes may be depending on the animation timings you set. When two keypoints coincide exactly, the keypoint turns red to warn you. You may click on any keypoint and hold down the left mouse key and "drag" the keypoint anywhere along the time line. Notice that the numbers indicating the precise time represented by the keypoint's present position change in accord with the movement. You may also click on the small upward pointing blue arrow and drag it along the timeline. Any animation associated with the currently selected object will occur so you can actually cause them to happen manually by sliding the blue arrow along the timeline. Whenever a plus sign is seen along with small right arrow, clicking on the right arrow will automatically insert an ending keypoint at the end of the timeline. **For clarity, Figure 5.9 is repeated below.**



Underneath the small arrow boxes you will find a button marked "Play" Clicking on the "Play" button or pressing the letter "p" on the keyboard will "play" the animation on only the current slide. If there is music associated with the slide you will not hear it play. Using the "Play" button is a quick and convenient way to test the animation of the chosen object or image. Each object in the Object list has its own timeline. So when you click on a different object in the objects list, the keypoints and animations associated with only the chosen object are displayed.

Below the timeline we see a button marked "Create". Clicking on the "Create" button brings up a browse menu and allows the creation of the executable file for your slideshow without having to close the O&A window and return to the Main screen where it can be done a couple ways. You may also press the keyboard "c" key which has the same effect and will elicit the browse menu to select where to place the executable file and finish the command to create it.

The "Preview" button is next beside the "Create" button. Clicking on the preview runs your slideshow from the beginning or first slide complete with music and all audio and animations.

Beside the "Preview" button is a small icon. When you click on this icon it begins the preview from the current slide and plays the remainder of the show including any music, audio per slide and animations. The music begins where it would normally be when the current slide is displayed in the slideshow or full preview.

Before going to the next button, note the information bar at the very bottom of the screen. It tells you the duration, position and location for the present slide or object.

## 5.5 Project Options Button

### 5.5.1 "Main" Tab

The "Project Options" button is important enough that we will give it its own section. Figure 5.10 shows the dialog box which appears when clicking the "Project Options" button:

As seen in Figure 5.10, the first two blocks of the Main tab determine whether the user wants to make an executable slide show or a screen saver. The default is for an executable slide show. If instead you want to make a screen saver, then click inside the appropriate radio button.

The next block is to allow the use of a custom icon file. If you have one or wish to make one, then you can use either the 32x32 or 16x16 buttons to find it and apply it for your personalized slideshow. Most will simply ignore this.

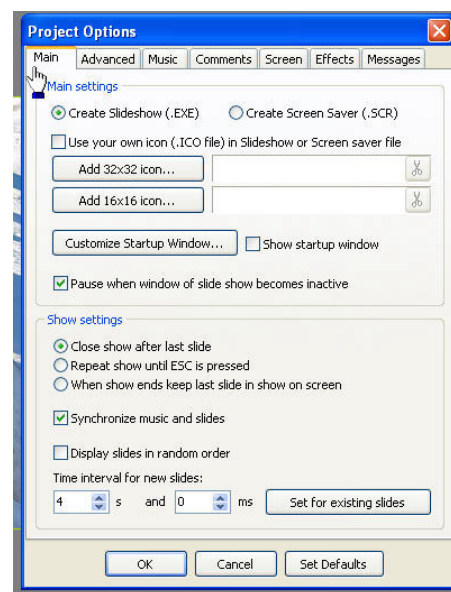


Figure 5.10

The next block allows customization of the startup window and also whether you actually want a startup window. Finally whether you wish to pause or not when the slide show window becomes inactive. Check as desired.

The next block of radio buttons is quite self-explanatory. Close the show after the last slide, repeat the show until ESC is pressed and whether to keep the last slide on screen when the slideshow ends. Next is a block to synchronize music and slides. This by itself doesn't automatically spread the timing of the slides to fit the music, but rather provides the program with the intent of the user to synchronize slides and music. By opening the "Timeline" from the Main slide screen then checking the box marked "Auto spread slides along music" you may automatically have the music and slides end together at

the end of the slideshow. Otherwise you can manually synchronize the music with great precision via the music/image timeline through the Main slide screen.

If you wish, you can check the box marked "Display slides in random order" and you can set the time for universal slide display using the "Time interval for new slides" feature. Don't forget to click on "Set for existing slides" if you wish this to be universal for all slides. Finally, click on the "OK" button or "Cancel" if you change your mind. You may also return to the defaults at any time by clicking the "Set Defaults" button.

## 5.5.2 Advanced Tab

Figure 5.11 shows the **Advanced Tab**.

The first two selections are for the left and right mouse buttons respectively. To set the function for the left mouse button, click on the down arrow in the blue block to the right of whatever is presently displayed (*in this case it says "none"*). When you do this you will see a drop-down menu like this: Choose from the seven choices. Then when your slideshow is running and you press the left mouse button, whichever choice you have selected for the left mouse button will elicit that response. The drop-down menu is identical for the right mouse button. So you may choose a function for either, both or none.

The next block concerns only the Screen Saver. If you wish the Screen Saver to go away when you move the mouse, put a check in the appropriate block. Otherwise you will need to press ESC to cause the screen saver to go away and

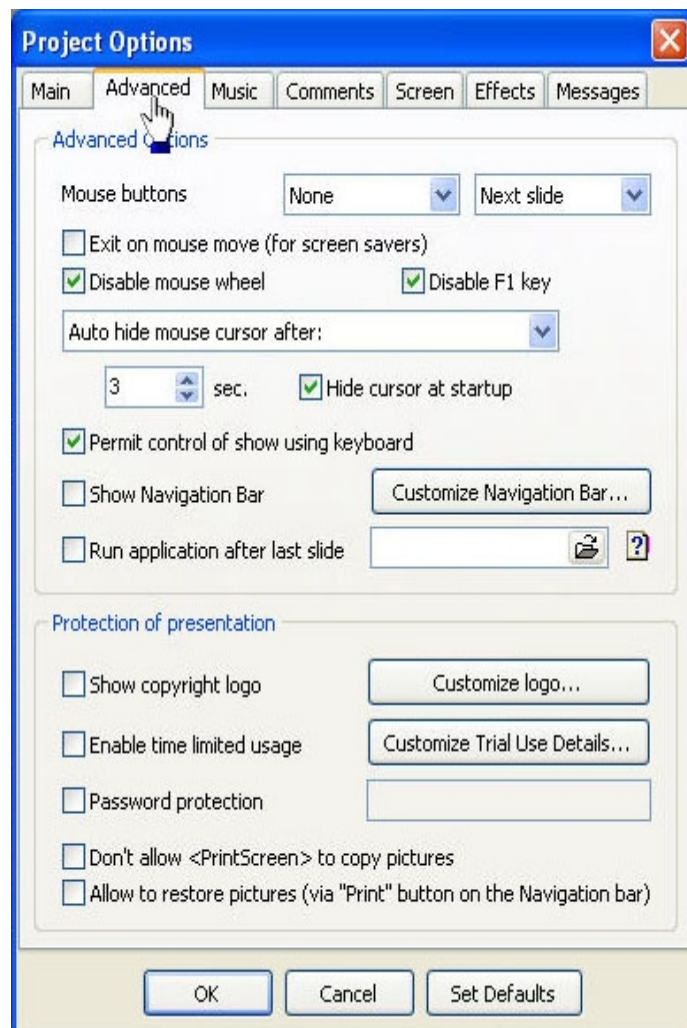
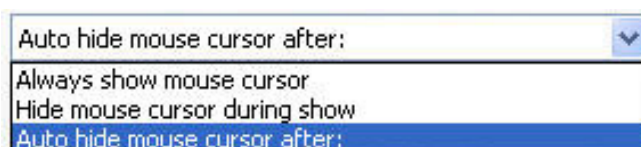


Figure 5.11

return control to the currently running program or Windows Desktop. If you wish to disable the "F1" key which is usually dedicated to help, then clicking inside the "Disable F1 key" block will do this.

Next we have a block which allows you to choose among three possibilities for the mouse cursor. Clicking the down arrow will elicit a drop down menu like this:



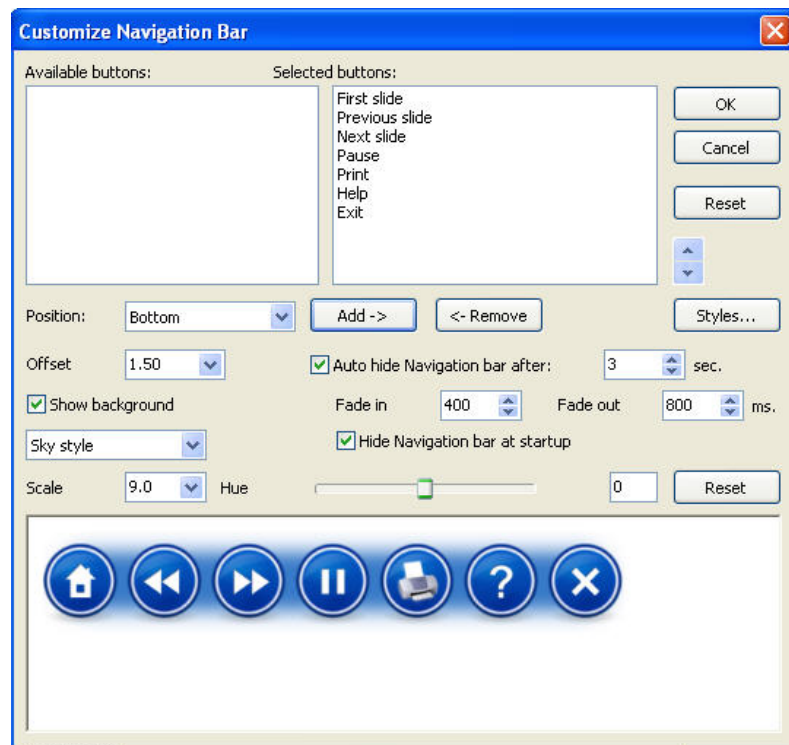


You may always show the mouse cursor, always hide the mouse cursor, or automatically hide it after so many seconds. Moving the mouse will always bring back the cursor after it's been hidden and it will then disappear after the number of seconds you choose in the selection box. You also have a checkbox that will automatically hide the mouse cursor at the beginning of the slideshow. So if you choose to have a Navigation Bar you can hide it until you need it. Just move the mouse and it will then appear and remain on screen for the period of time you specify.

The next button is to "Permit control of show using keyboard" or not. If you click and put a checkmark here you can use PgUp to advance to the next slide or PgDn to back up a slide at a time. These commands via the keyboard are the same as used in Microsoft PowerPoint so for you PowerPoint users, remote controls sold to control PowerPoint shows are compatible with PicturesToExe as well. A complete set of Keyboard Shortcuts is included at the end of this document.

The next checkbox when checked "Show navigation bar" will display the Navigation Bar according to the way you have previously chosen as explained above. The following menu appears when you click inside the button marked "Customize navigation bar":

The buttons can be easily changed and are customizable. There are three folders which contain pre-made buttons which may be accessed by clicking on the "styles" button as seen on the right. The button color, style, timings, offset and whether or not you choose to hide them at startup all can be adjusted from this menu. You can also even make the buttons invisible by changing their opacity. As demonstrated in some online tutorials, you may even create your own menus to jump to any slide in the slideshow. These are "very" powerful features and beyond the scope of this documentation

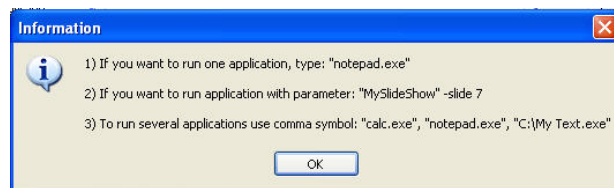


level so see the PTE forum for more details at [www.wnsoft.com](http://www.wnsoft.com). The buttons as displayed on the right are self-explanatory. The house takes you home, left, right, pause, help and exit are plainly marked. The print button will print the currently displayed slide very nicely on an attached printer. You can have from one up to seven buttons chosen as you wish. For this display all were "selected".

Next let's look at the "Run application after last slide" feature. This is an extremely powerful feature unique among current presentation slideshow software. PTE lets you run external executable code from your executable slideshows. This opens all kinds of doors for the more technically oriented user. For example you might want to create an "invisible menu" (*described on the PTE forum*) to run any number of sequential slideshows. It's possible even to "loop" these for events, etc. But the immediate feature allows you to set the last slide in your show (*actually it's possible to do this with "any slide" via*

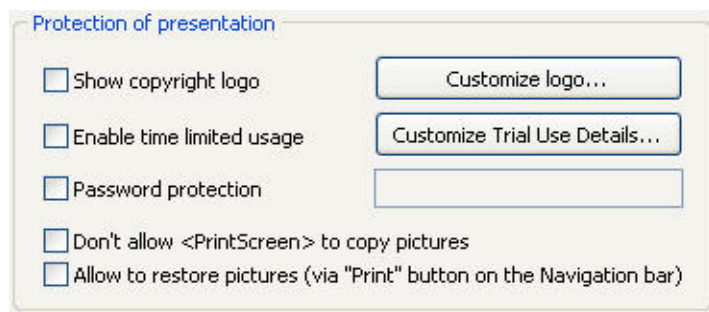
the *customize slide feature*) to run one or many other programs. Clicking on the "folder icon" elicits the browse feature to let you find and select the executable file to run. Clicking on the "?" brings this help window:

As seen in Options 2 to the right, you can even pull up a particular slide on a different PicturesToExe slideshow, and you can daisy chain a number of them to run.



The next series of features concern protection of your intellectual property via copyright logos, password protection, etc. A portion of the screen capture shown on the preceding page is repeated here for clarity:

If you have a company logo and want to have it displayed then place a check in the block next to "Show copyright logo". By clicking on the button next to this where it says "Customize logo..." You can set the size, browse to find your file, set the opacity, offset, position, etc. If you wish, you may limit the run time of the executable file so that it will "expire" after a certain prescribed period and cease operating, You may put a checkmark next to "Enable time limited usage" then click the "Customize Trial Use Details" button to bring up another window where you can decide to have it expire after so many months, days, etc., or you can set a limited number of times it will "run". You can also provide a "message" to your viewer explaining why the slideshow no longer operates.



Putting a check beside "Password protection" then entering the password in the block beside will cause the viewer to have to enter this password to run the slideshow.

A checkbox is also provided to prevent <PrintScreen> from working to minimize the probability that the user will copy your images. Finally there is a checkbox allowing restoration of images via the "Print" button on the Navigation bar.

As with any copy protections, a sophisticated computer user might find a way around them, but they do serve to keep honest people essentially honest. The best protection for your very valuable images is to make certain that the resolution used in your presentation is sufficient to display the beauty and make a meaningful impact, but insufficient to allow serious print sizes especially if you distribute your work in environments where you suspect theft might be a problem.

### 5.5.3 Music Tab

PTE provides for the use of the following formats:

**MP3 WAV WMA OGG MID**

Mp3 files are quite compact, yet have excellent audio quality and work very well in the experience of most.

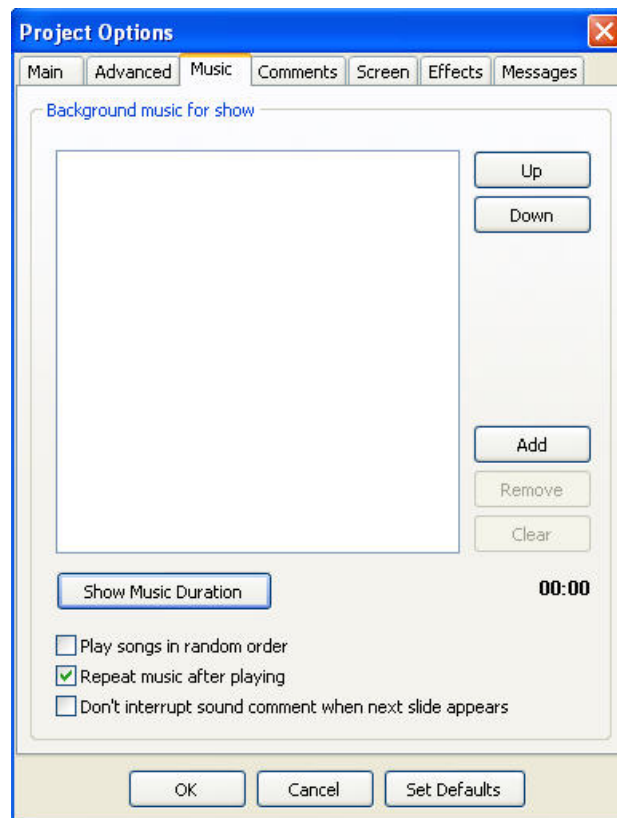
When you record via a microphone, most recorders store in wav format. This is a convenient way for "sound bites" on individual slides. Midi (.mid) files can be a problem if your audience doesn't have that feature turned on in their own computers. This happens often enough to warrant a caveat.

Figure 5.12 shows the window you see when the Project Options "Music" tab is clicked. If you click on the "Add" button the browse window will appear allowing you to search for your folders and music files. Once you have entered them you may move them up or down via the respective labelled buttons. Clicking on an individual selection then on the "Remove" button will remove that particular selection from the available tracks. Clicking on the "Clear" button will remove all tracks from the selection window.

Clicking on the "Show Music Duration" button will show you the total time for all music selections added together.

You have a choice of having the songs play in random order or not as well as whether to have them "repeat" after playing once.

**Figure 5.12**



The final check box, when checked, will prevent the currently playing selection from ending when the next slide displays. This feature actually does not need to be used unless you have done one of the following: If you have not started the music with the first slide automatically, that is if you have used the individual "customize slide" to add the song or sound, it will stop when the next slide appears unless this box is checked. If you are using individual sound comments for each slide and you want to bridge comments over several slides then you need to check this box. However, it is possible to insert a lengthy music selection beginning at any particular slide by inserting it at that point via the Customize Slide feature. Just remember that when you use the individual slide preview (*not the play or preview function*) sound or music entered this way will not be synchronized so that it plays from the true position as it would in a complete preview. For that the sound must start with the first slide.

## 5.5.4 Comments Tab

Figure 5.13 shows the **Comments** tab. The first block of buttons allows the user to customize the Comments fonts in numerous ways. First, choose your font by clicking on the small down arrow beside the font description (*font name*) block. The normal Windows font selection menu will appear allowing you to choose from your installed fonts. The block to the right, "Drop shadow" when checked, will place a drop shadow on your font which may be customized via the "Customize..." button. You may also choose Bold, Italic or Underscore by clicking on the appropriate choice and clicking on the "A" will pull up a very nice color choice menu having a wide variety of selections and customization to choose from in numeric or hex or with a color picker tool.

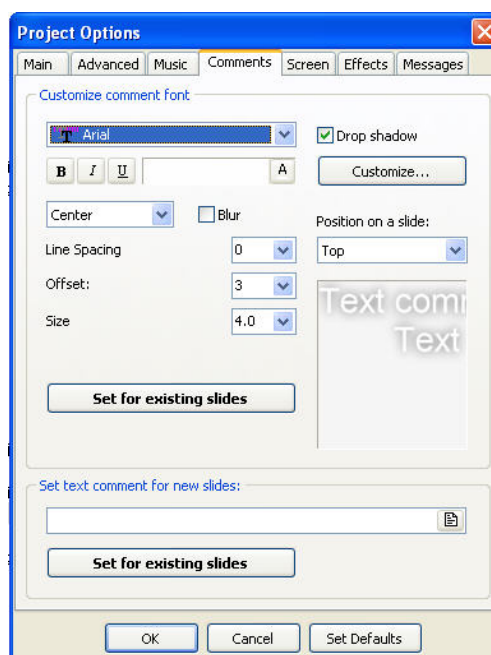
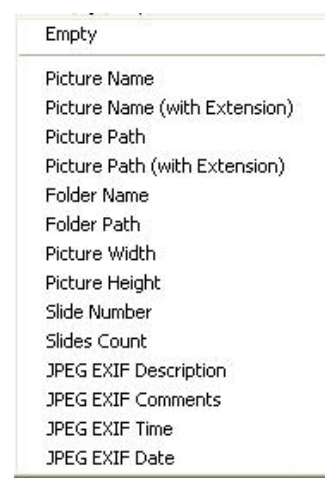


Figure 5.13

The drop shadows can be adjusted for color, opacity, angle, distance, size and spread as well as custom settings. This is a very sophisticated color feature. You can choose between Center, Left or Right by using the drop-down menu button labelled "center" in the example. You can adjust spacing, offset and size visually via their respective sliders which pop-up when you click on the respective down arrows in the small blue box. It's possible to set these attributes for all existing slides by clicking on the "Set for existing slides" box. The various changes are revealed real-time in the example block where you see the words "Text" in shadow in the example above. You can also set the position of text on the slides by using the drop-down menu brought up by clicking the small down arrow in the "Position on a slide" box. The choices of left, top, right, bottom, center, left-top, right-top, right-bottom and left-bottom are offered.

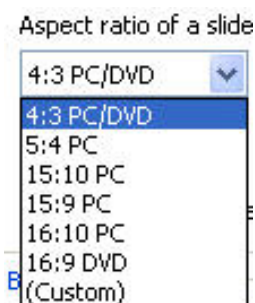
The next box "Set text comments for new slides" has a "folder" button to the right of the white display area. When you click this button the following drop down appears: Choosing one of these automatically puts the related information in the comments which can then be set for existing slides by clicking on the "Set for existing slides" button. Finally you can click "OK", "Cancel" or set "Defaults."



### 5.5.5 Screen Tab

Figure 5.14 shows the **Screen** tab. The first section of the "Screen" tab allows Screen options. We can choose from the first drop-down either "Full screen" as in the example or "Windowed mode."

Next we may select the "Aspect ratio" for our chosen destination. For normal computer screens or normal television (*not wide screen*), the default 4:3 works very well. But if you have other needs, then click on the small down arrow in the little blue box and the following drop down menu appears:



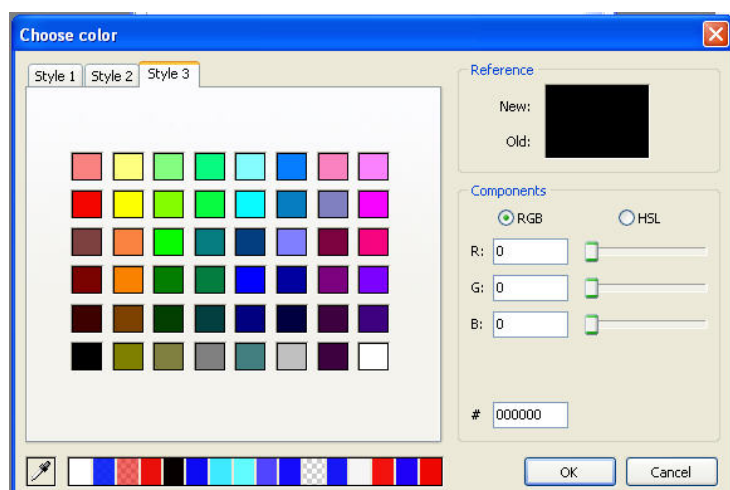
**Figure 5.14**

You may choose from the available common selections or choose "Custom." If you choose "Custom," another box will appear letting you put in your own aspect ratio.

The next block is provided for you to type in the "Caption" of a show if desired. This "Show Caption" only applies when you use the Windowed Mode and it will appear in the blue bar above the window. This feature has no function for a full-screen slideshow.

*The "hardware" acceleration should normally be checked if you are presenting a show with animation. The one notable exception to this, at least until the release of later versions of PTE 5.0, is when you create a menu which calls other PTE shows while the menu.exe show remains running in the background. In such a case, do not check "Hardware Acceleration" in the Menu.exe but do check it in the slideshows being called.*

Next we deal with the background and have a choice of "Solid color, Gradient filling, or Tiled image." If your slideshow always fills the screen - that is if you have no border where the monitor shows around the screen- then this feature is of no importance to you. On the other hand, if some or all your images do not fill the entire screen and you would like a nice background in those areas, then you may want to set this up. By clicking on one of the three aforementioned choices then clicking



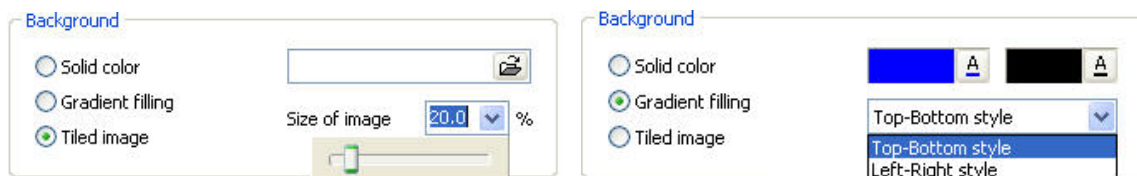
on the "A" at the end of the area depicted in black to the right of the "Solid color" radio button, the following screen will be revealed:

With three styles to choose from and the ability to set any custom color in the rainbow, you can have about any color which the human eye and the computer can produce for your background.

You can choose RGB color space or you may pick HSL (*hue, saturation, lightness*) which is a color model transformation of RGB, actually a non-linear deformation of the RGB "cube". You may also enter the hexadecimal equivalence for your color choice if you know it.

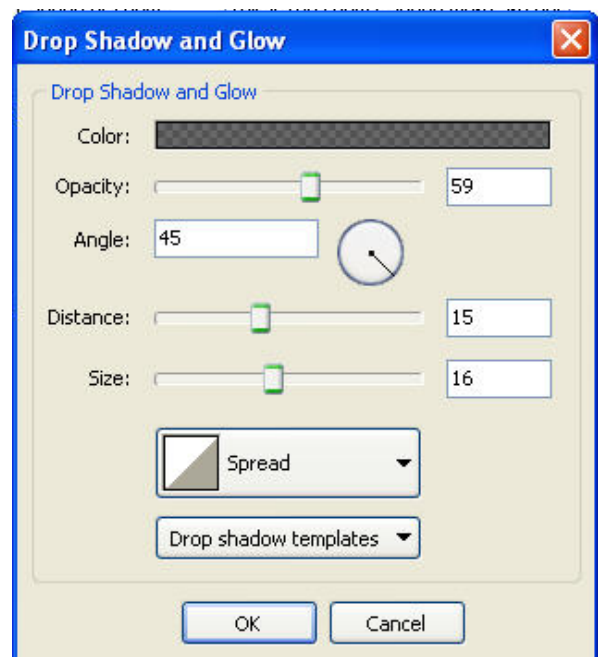
If you choose a gradient background you will see a slightly different screen which allows you to choose the left and right or top and bottom colors. You have a choice of left/right or top/bottom as well. So you actually have essentially the above color picker for "each" side of your gradient and the gradient will make a smooth transformation between the two colors using whatever intermediary colors that fall into the color spectrum between your choices.

If you choose a tiled image you will have the option presented to use the browser to locate the image to be used in the tiled background. The two slightly different choices are depicted below:



So with a tiled image background you can choose the size of the tiles via the slider bar which is elicited by clicking on the small, down-arrow in the blue box beside "Size of image". And for the "Gradient filling" you can choose either top-bottom or left-right style then choose your colors for the start and end of the gradient via the color boxes by clicking on the "A".

The final choices in the "Screen tab" are for "Additional Options" and begin with "Display a shadow behind the image". As with the backgrounds, these functions have little or no use if you fill the screen with your images and are appropriate for those who perhaps use a frame around their image, or who for one reason or another would prefer to display their images smaller than full screen size. They may be appropriate for those who also want to display the entire image at an aspect ratio slightly different from the device being used for the slideshow. So if there is a black border showing when you play your slideshow above, beneath or beside your photos, you may want to consider the "shadow" option as well. Choose this option by putting a check in the box beside "Display shadow behind images". When you do this the "Customize" box will become active (*not greyed out*). Next click on the "Customize" button and the following screen will appear:



Clicking inside the "Color" block (*which is dark checkerboard in the example*) will pop-up the color picker menu as seen and described previously. Use the color picker to select a color for your drop shadow.

Next use the slider, angle, distance and size features to make the shadow look like you want. You will not see the changes in real time but must click "O.K." to see them reflected on your image. For this reason it may be best to experiment on a single slide before doing this for your entire slideshow. You may also want to experiment with the "spread" which offers a number of very interesting presets. Once you have something you like, you might consider saving it as a "Drop shadow template" by clicking on that button and then saving the constructed shadow as a template for future use. Once you have finished, click on "Set for existing slides" if you wish to apply the shadow to all your images.

Next you have the option of choosing the percentage of size of the screen to use for display of your images. Experiment here for a better understanding.

Finally you have the option of disabling the scaling for all main images which is "Not recommended". The reason this is not recommended is that your slideshow may be played on a variety of different computers with different screen resolutions. When scaling is disabled the appearance will not be consistent and will vary according to whether the viewer's monitor has the same or different screen resolution than the one being used by you when you made the slideshow. If they have a higher resolution, your images will appear smaller than you expect and if they have a lower resolution they will appear larger. This means that some of the image may actually be missing. However some photographers have requirement to have their images displayed at their chosen resolution regardless of screen appearance so this feature exists. This feature as previously described may be used on individual slides via the "Common Tab" - "Mode" choice "Original".

## 5.5.6 Effects Tab

Figure 5.15 shows the **Effects** tab. There are a large number of beautiful, smooth transition effects from which to choose in PTE. The very "best" way to learn how these effects work is to simply create a small slide show and experiment. There are, however a few things which need to be explained and possibly demonstrated with screen shots.

First there is the option of allowing some or none depending on whether you have a check mark in the block beside the various choices. So while all the effects are listed in the scrolling screen capture on the following page, let's look at the initial screen effects tab as we see it in the "Project Options" depicted on the right.

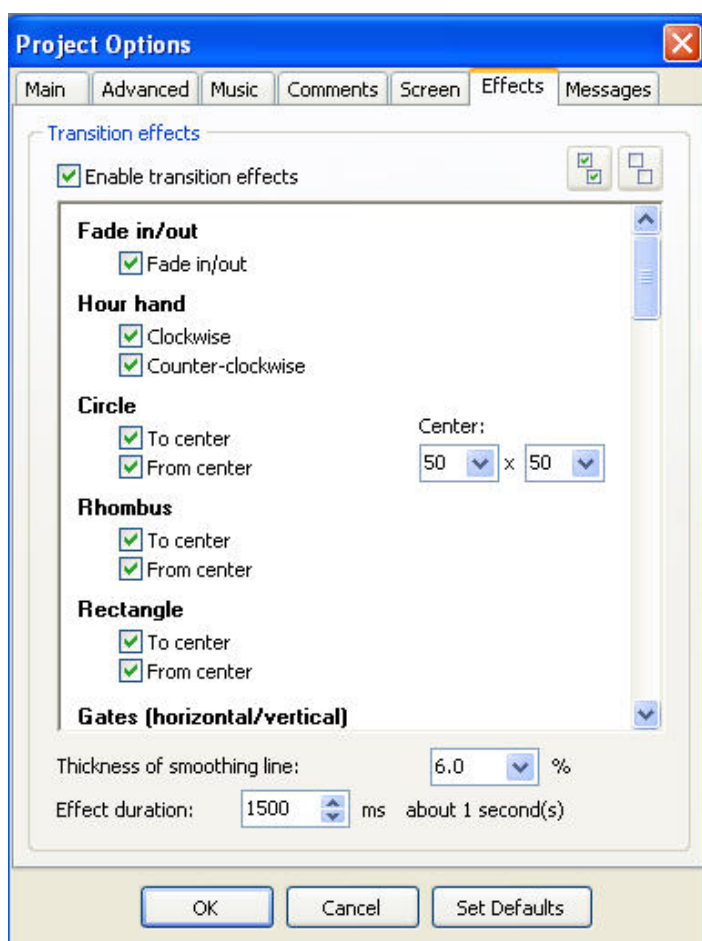


Figure 5.15

When you put a check mark in the block beside "**Enable transition effects**" most of the common effects are automatically checked. The following are not automatically set:

**Mosaic, Push Effect, Slide Effect, Curling of Page (Horizontal/Vertical) Rolling up to pipe, Curling of Page (Diagonal), Curling of Page Vertical, Curling of Page Horizontal.**

So if you wish to include the above transitions in your slideshows on an automatic or "random" basis as they would be if not individually selected via the "Customize Slide" feature, then you must manually check any or all the above for them to be included.

On the page above, notice that for the "Circle" transition the default is set to 50. Changing one or both of these numbers moves the "center" of the circle about on the screen. It's best to experiment to see the effects. By changing both numbers it's possible to get a wide variety of effects both to center and from center.



The "Mosaic" transition is another one that can have a number of different appearances by changing the number of pieces. Changing the "appearance" slider to a smaller number causes a much "smoother" transition, almost like a fade but with a checkerboard square and when changed to a large number a more "block-like" appearance.

All "Curling" and "Rolling" effects can be greatly altered by changing the "radius" setting. A small radius causes a tight roll while a large radius causes an effect like turning a page. Below are a couple screen snaps to show the differences:



**Small Radius Roll**

**Large Radius Roll**

Above we see a small radius roll from the top left to bottom right and on the right a large radius roll for top left to bottom right. The smoothing line numbers affects the edges. The smaller the number, the sharper the line. This is evident on effects that actually show an edge in transition. If you want a very sharp demarcation or sharp edge use a very small smoothing number. If you want a rather fuzzy and soft edge use a larger number.

**Fade in/out**  
 Fade in/out

**Hour hand**  
 Clockwise  
 Counter-clockwise

**Circle**  
 To center  
 From center  
 Center: 50 x 50

**Rhombus**  
 To center  
 From center

**Rectangle**  
 To center  
 From center

**Gates (horizontal/vertical)**  
 Horizontal (to center)  
 Horizontal (from center)  
 Vertical (to center)  
 Vertical (from center)

**Gates (diagonal)**  
 Left-Top - Right-Bottom (to center)  
 Left-Top - Right-Bottom (from center)  
 Left-Bottom - Right-Top (to center)  
 Left-Bottom - Right-Top (from center)

**Page effect (horizontal/vertical)**  
 Left-right  
 Right-left  
 Top-bottom  
 Bottom-top

**Page effect (diagonal)**  
 From Left-Top corner to Right-Bottom  
 From Right-Bottom corner to Left-Top  
 From Left-Bottom corner to Right-Top  
 From Right-Top corner to Left-Bottom

**Advanced hour hand**  
 Clockwise (Center-Top)  
 Clockwise (Center-Right)  
 Clockwise (Center-Bottom)  
 Clockwise (Center-Left)  
 Clockwise (Right-Top)  
 Clockwise (Right-Bottom)  
 Clockwise (Left-Bottom)  
 Clockwise (Left-Top)  
 Counter-clockwise (Center-Top)  
 Counter-clockwise (Center-Right)  
 Counter-clockwise (Center-Bottom)  
 Counter-clockwise (Center-Left)  
 Counter-clockwise (Right-Top)  
 Counter-clockwise (Right-Bottom)  
 Counter-clockwise (Left-Bottom)  
 Counter-clockwise (Left-Top)  
 Offset: 20 %

**Mosaic**  
 Mosaic  
 Parts: 8 x 8 Appearance: 10

**Push effect**  
 Left-right  
 Right-left  
 Top-bottom  
 Bottom-top

**Slide effect**  
 Left-right  
 Right-left  
 Top-bottom  
 Bottom-top

**Curling of page (Horizontal/Vertical)**  
 Unrolling from Left  
 Unrolling from Top  
 Unrolling from Right  
 Unrolling from Bottom  
 Rolling up from Left  
 Rolling up from Top  
 Rolling up from Right  
 Rolling up from Bottom  
 Rolling up to pipe  
 Radius: 40.0 %  
 Color of the back side: A

**Curling of page (Diagonal)**  
 Unrolling from Left-Top  
 Unrolling from Right-Top  
 Unrolling from Right-Bottom  
 Unrolling from Left-Bottom  
 Rolling up from Left-Top  
 Rolling up from Right-Top  
 Rolling up from Right-Bottom  
 Rolling up from Left-Bottom

### 5.5.7 Messages Tab

The "Messages" tab brings up the window seen in Figure 5.16. Here you may enter captions for buttons. The defaults are shown at the right but can be changed to your own specifications. The Help

window likewise. You can enter a message of your own choosing here. You are not limited to the space shown in the example but may continue typing a rather long help message.

The startup window is also self-explanatory. Enter your name, web site URL, Email Address and any comments you desire here.

The "Password query" is where you enter information telling the user that a password is required and the message they will see telling them to enter the password.

The "Expired trial" block lets you enter a message to explain to the user that they have gone beyond the expiration time and what to do such as contact you using the information in the "Startup window"

The "Print dialog" box lets you enter the information as described on the right.

**Captions on buttons**

Button <OK>	OK
Button <Cancel>	Cancel
Button <Run>	Run
Button <Help>	Help
Button <Exit>	Exit

**Help window**

Window caption:	Help
-----------------	------

**Startup window**

Author:	Author
Web site:	Web site
E-mail:	E-mail
Comments:	Comments

**Password query**

Caption:	Password required
Text:	Enter password:

**Expired trial**

Caption:	Information
----------	-------------

**Print dialog**

Caption:	Print
Button:	Change Printer...
Button:	Print
Button:	Save
Button:	Only Main Image

Figure 5.16

## 5.6 Customise Slide Button

### 5.6.1 Main Tab

The "Customize Slide" main tab brings us the menu seen in Figure 5.17. The first box lets us choose the display time for this individual slide. The slide number being modified is displayed in blue at the top. This is slide #1 in the example.

Enter the number of seconds and milliseconds as desired or use the up and down arrows in the "Display slide for (secs.)" box to change.

The "Scale keypoints in objects" (*on time change*) box when checked spreads your animations along the new time for the slide. If you have the time set for four seconds then change to twelve seconds in the display time for the slide, if this box is not checked, all animations presently programmed by the keypoints will keep their original timings. If the box is checked, the timing will change to be spread out along the new timeline.

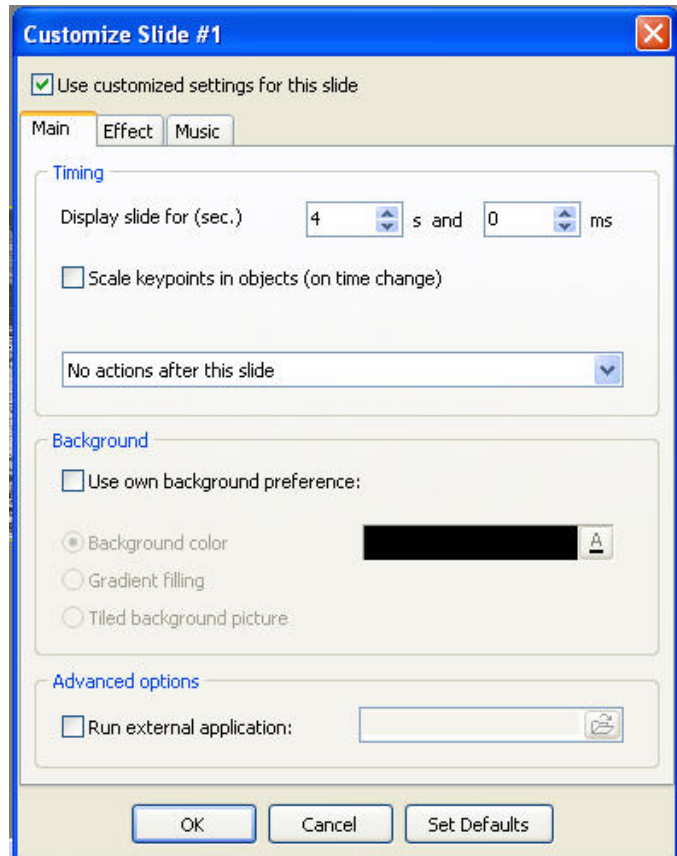
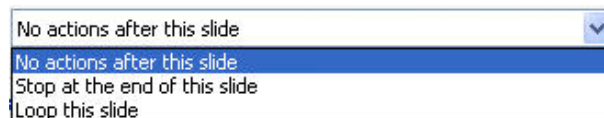


Figure 5.17



The box above shows the result of clicking the small down-arrow in the box containing "No actions after this slide" in the example above and to the right. The other options are "Stop at the end of this slide" or "Loop this slide". These are simply more customizations which you can use.

The "Background" section is virtually identical to the one described in the "Project Options" so will not be further addressed here. Simply choose a background for an individual slide rather than for "all slides" here. The same for "Gradient filling" and "Tiled background" picture.

The "Run External application:" block when checked lets the user click on the folder icon to the right and run an external application from any slide. External applications are executable Windows code and could be another slide show, a menu, word processing program or any number of applications.

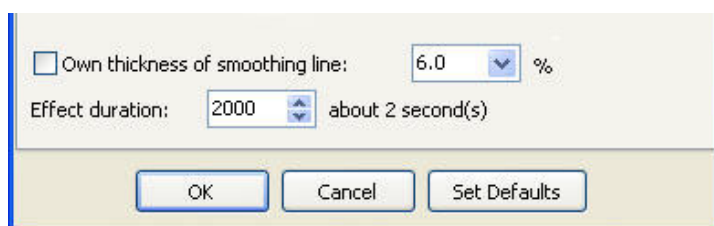
Finally there is the "OK" "Cancel" or "Set Defaults" as on other menu windows.

## 5.6.2 Effects Tab

The "Customize Effects" box insert as shown in Figure 5.18 is very similar to the same found in Project Options but with a couple minor differences. A bit of a shortcut was used for the Advanced Hour Hand effect so rather than have individual blocks for Clockwise and Counter-Clockwise, a block is there to check to change the effects one way or the other. It's simply a "shortcut" way of providing the identical feature.

**The second difference is that there is no "Offset" percentage for individual slides. So you must set the Offset percentage if desired on the Effects Tab in the main Project Options. Individual slides can't have different "Offset" values.**

The final feature of the Effects tab is depicted below. This feature is found on the main scroll window which the effects on the right were extracted for the screen display. Below is the relevant portion:



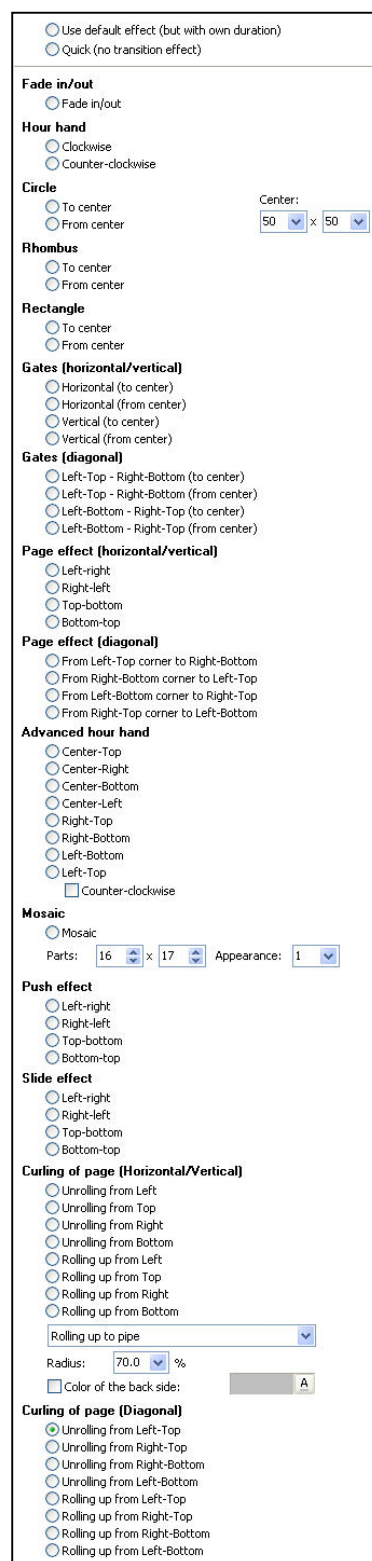
Above is a screen snap of the bottom portion of the Customization Effects tab. This is where you choose a custom smoothing line if you wish. Experiment to see how this affects your individual images.

You also set the timing for the individual slide here. You can either type in the value a "thousandths" of a second ( $1000 = 1$  second,  $3500 = 3.5$  seconds, etc.) or click with the left mouse button and hold the tiny up or down arrows to change the time for this individual slide.

Figure 5.18

## 5.6.3 Music Tab

Figure 5.19 shows a screen snapshot of the "Music tab" of the Customize Slide Menu. Notice the warning message telling the user to "turn off Synchronize music and slides" option when this menu is used to add music or sound to an individual slide. Also notice that if the "playlist is empty" any music currently playing will stop when it reaches this slide.



There are a number of ways to add music or sound to your slides. When you want music to begin with the first slide and play through the entire slideshow or until the music ends, add the music via the "Music tab" on the Projects Options Menu. When you want music to begin on a particular slide, then continue turn off synchronization via the Main Screen Timeline button and instead choose "Music Plays Independently". However, if you open this menu and opt to play new background music anywhere further along without intervening slides being changed regarding music, an automatic checkmark will be placed in the "play new background music or files" and music will stop immediately after the first slide plays. To avoid this you will need to manually "uncheck" play new background music from intermediate slides. Note that sound may also be added per slide from the Main Menu screen under the "Sound" feature above the Objects and Animations button. With the combination of three ways of adding sound it's possible to have background sound and a separate track for individual slides such as voice-over. This provides a very powerful tool for sound customization. Experimentation will help the user better understand how sound and music may best be exploited in PTE 5.0.

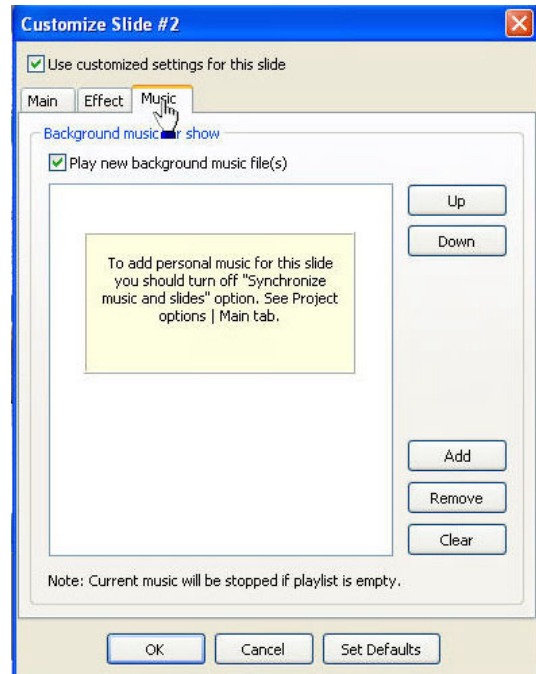


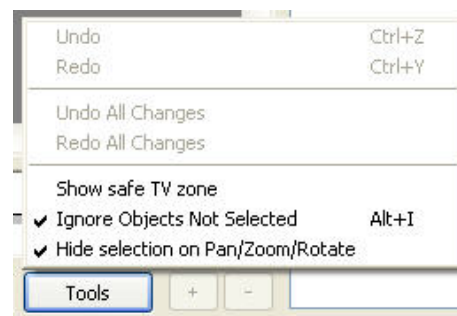
Figure 5.19

As with music in the Project Options, you can clear, add or selectively remove sound selections from the menu as well as change their respective play positions.

## 5.7 Tools Button

The "Tools Button" found along the right side of the timeline beside and to the right of Customize Slide when clicked brings up the menu shown in Figure 5.20. This is another place for the "undo" and "redo" along with their respective keyboard shortcuts Ctrl-Z and Ctrl-Y. It's also possible to "undo" or "redo" all changes made to a single slide.

Figure 5.20



The "show safe TV zone" feature should be checked if you are making a DVD to play on a television. This will place a color border around the area depicting the actual aspect ratio of the selected device. The "Ignore Objects Not Selected" should be left checked to prevent accidentally moving the wrong object when you are adjusting animations via the green bounding rectangle on the screen view. This along with the "transparent to selection" feature found on the "common tab" on the O&A screen are invaluable features making it easy to manipulate multiple objects on multiple layers which overlay one another. With these two features checked, you can simply highlight the desired object in the "objects list" then manipulated it via the mouse cursor in the screen view without affecting layers above or below the object.

"Hide selection on Pan/Zoom/Rotate" functions to either allow or prevent the green bounding rectangle during the manipulation of the image. If this feature is "on" (*checked*) then when you click the mouse to select the "handle" on the bounding rectangle or click inside the bounding rectangle and hold down the left mouse button to "drag" the image, the green bounding rectangle disappears at the time you left click the mouse when making the selection. If it is turned off (*unchecked*) the green bounding rectangle is unaffected and remains visible.

## 5.8 Adding More Keypoints

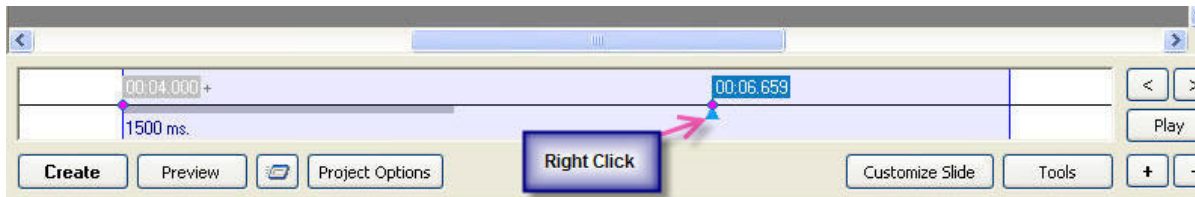


Figure 5.21

Figure 5.21 shows a repeat of the timeline. To add keypoints right click the mouse underneath the dividing line which divides the blue region on the keypoint then left click on "add keypoint" from the resulting mini-menu. Once you have added keypoints you may slide them left or right along the time line to position them at the specific times desired. You may add as many keypoints as you wish. All animations take place "between" keypoints. To perform an animation click on the object or image in the Objects List for the object or image to be animated then click on the starting keypoint where you want the animation to begin. Next position the object as you wish for the start of the animation then click on the next keypoint to the right. When the keypoint turns blue it is selected. Move the object with pan, zoom or rotate to the position you want it to occupy at the end of the animation and slide the keypoint highlighted to the time you want to end the animation. That's all there is to it! It's very easy and effective.

Note the small buttons at the far right next to the "tools" button. These buttons automatically insert and remove keypoints. Depending on the time set the plus button will insert keypoints at regular intervals. If you highlight the starting keypoint on the far left then begin clicking on this plus button using the default 4.0 second slide timing it will insert a keypoint every .3636 seconds, or eleven total keypoint equally spaced. If you set the time for the slide to 10 seconds, pressing the plus button will insert 23 keypoints each having a .4347 timing. If you set the slide time to one second, it will insert five keypoints spaced at .20 seconds each. For a 20-second slide it will insert 43 keypoints for a .4651 timing, etc. The point is that it inserts evenly spaced keypoints should you need them for a specific animation. You can manually insert a keypoint between keypoint one and two then use the plus button to double the number of evenly spaced keypoints by inserting one between each existing one. Conversely, by highlighting any keypoint beyond the first and clicking on the "Minus" button, the keypoints will be taken out (removed) one at a time in sequence. So the function of the plus and minus buttons are to add or remove keypoints.

## 6. VIDEO BUILDER

### 6.1 Introduction

Video Builder comes with the Deluxe Version 5.0 of PicturesToExe. Video Builder provides the user with a built-in DVD burner and DVD authoring tool complete with customizable menus and a number

of very nice features. Along with Video Builder is the ability to create custom AVI files which may be then used with third party DVD burners and tools to output HD disks or files up to 1080p (1920x1080 progressive).

## 6.2 DVD Video

When the default PTE screen is opened and the user clicks on the "Video Button" on the bottom between the "Timeline" and "Project Options" buttons, a pop-up menu as shown in Figure 6.1 offers a choice of "Burn DVD-Video Disc" or "Create AVI File". Note that the legend on this button depends on the choices selected in the **View, Advanced Options** window (see Section 3.3.1.4.).

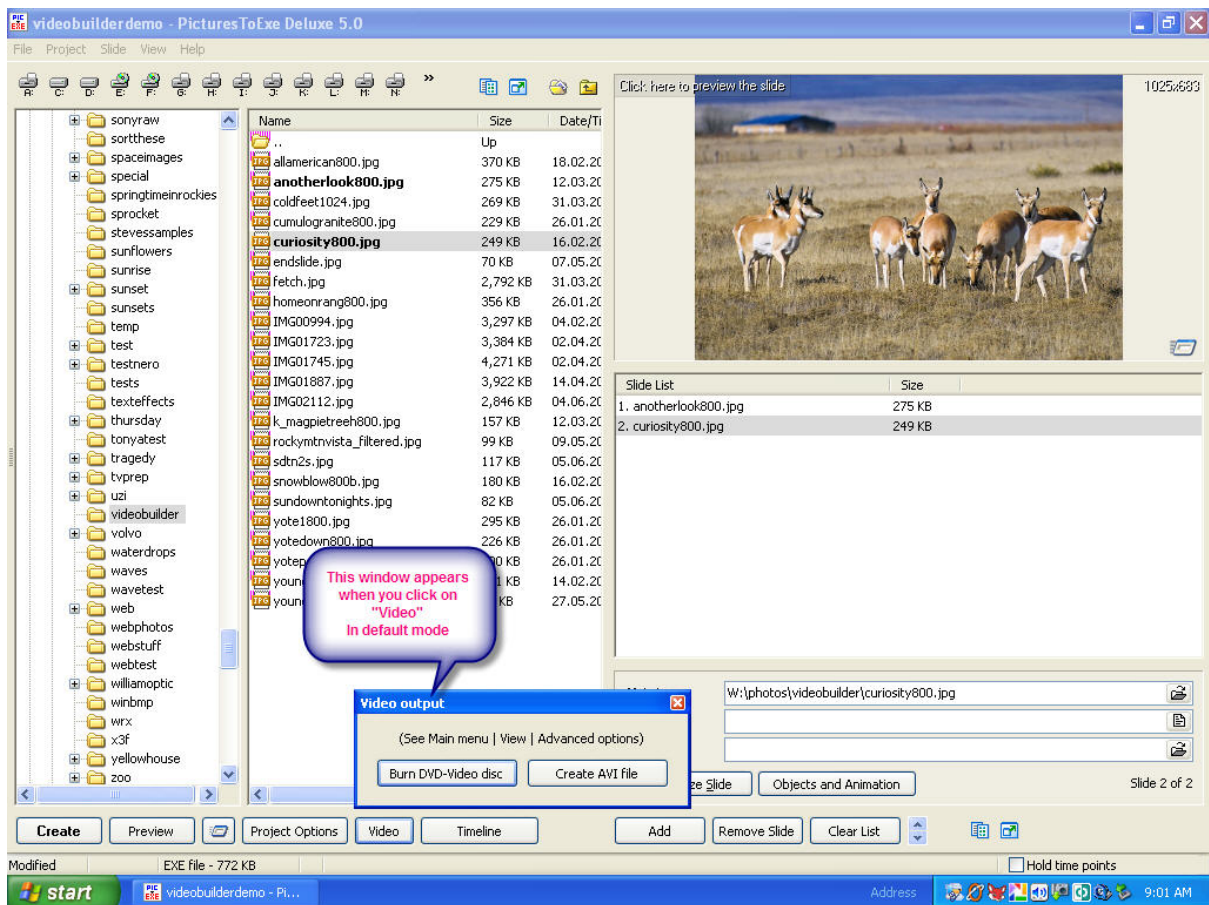


Figure 6.1

Figure 6.2 is a close-up screen capture of the Video Output pop-up obtained by clicking on the "Video" button on the bottom of the Main PTE screen. Be sure a PTE file has been opened and is ready to be burned as a slideshow to DVD before proceeding.



Figure 6.2

To author a DVD then left click on the "Burn DVD - Video Disc" choice and the first DVD Video Builder screen will appear as shown in Figure 6.3 below.

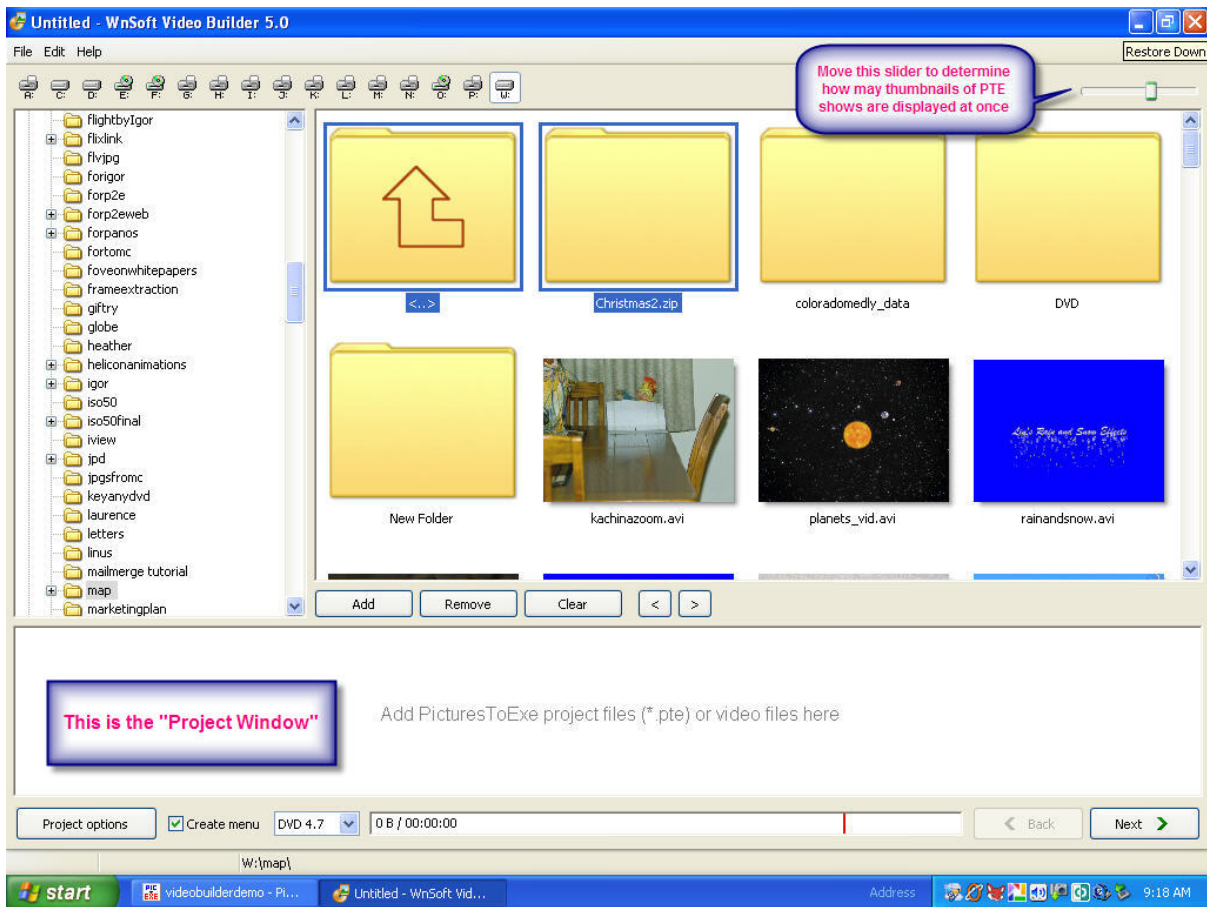
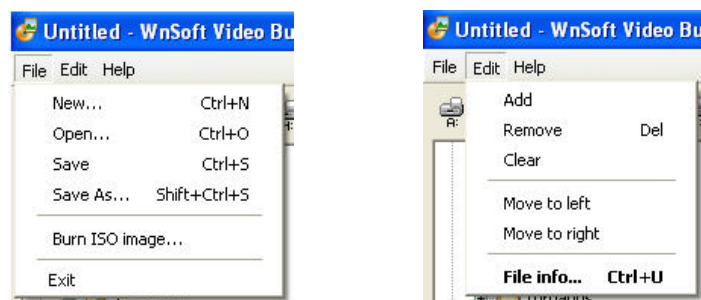


Figure 6.3

As seen in the Video Builder opening screen capture, there are a number of features and possibilities. Let us begin with the three menu choices at the top left. These are "File, Menu and Help". Pressing the "File" choice or "Edit" choice respectively brings up the drop-down menus seen below.

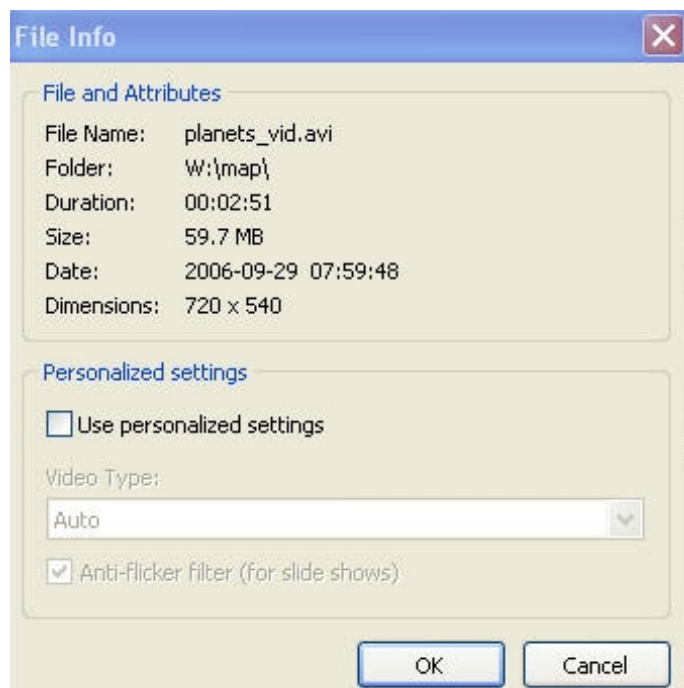




Generally, you will already have your file open, but with the "File" menu, it's possible to load a different file without leaving Video Builder. You may also save your work or burn an ISO image from the "File" menu choice. The "Edit" choice actually refers to the projects loaded from the menu of PTE file thumbnails and placed in the "Projects" window for processing. So from this menu you have a choice of adding more projects, removing existing projects one at a time or clearing the entire list. Once a project is "selected" by clicking on the thumbnail in the "Projects Window" the order may be altered by moving a project to either the left or right via this menu choice. Note that this same "Edit" window can be elicited by simply right clicking the mouse anywhere in the "Project Window". **For any of these choices to be activated, one of the project thumbnails must have been selected.** Finally we have the "File info..." choice. Clicking on this choice with one of the project thumbnails selected will pop-up the following menu:

As may be seen in the screen capture, the file name of the chosen project will be displayed along with its location on the hard drive, the duration of time for the file, its size in megabytes its date of creation or last revision and its dimensions in pixels.

Under the "Personalized settings" window a checkbox is available to use in the event that the auto settings are not desired. Placing a checkmark in the box will allow the user to change the video type and decide whether or not to use the anti-flicker filter.



The final menu choice of the three under discussion is "Help". As of the time of writing this document, this window only allows access to the "About" feature that identifies the registered owner of the PTE Video Builder software. In the future this box will be linked to an extensive help file.

Underneath the "File, Edit, Help" menu selection we find a menu bar offering the following choices:

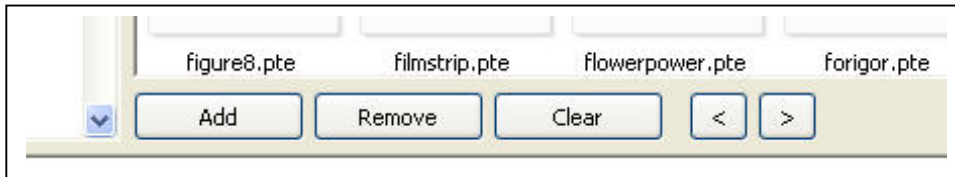


The actual appearance of this will vary depending on the user's personal computer hardware. There may be only "A, C and perhaps D" drives along with any CD or DVD drive designator icons. But in the event there are external hard drives, card readers for digital cameras or other storage devices they will be found here so the user may click on their choice to see the Windows Tree for file and folder selection found on the respective devices.

To the right of the drive icons a "slider" is found. By clicking on this slider button and dragging it to the right or left, the number and size of the PTE projects to choose from may be varied. With the slider pulled all the way to the left, there will be a large number of thumbnails displayed across the window.

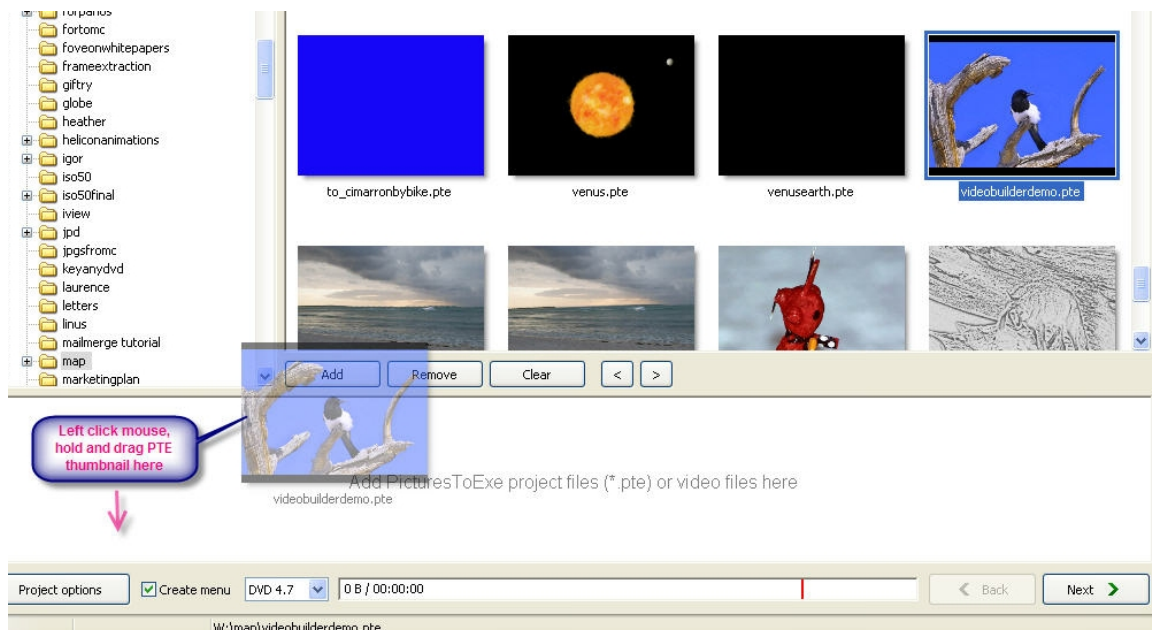
With the slider pushed all the way to the right (as seen by the user), there will be only two or three thumbnails visible horizontally.

At the bottom of the first Video Builder screen underneath the thumbnails and just above the "Project Window" we see another menu bar:



This menu bar actually duplicates the aforementioned drop-down obtained by right clicking in the "Project Window" with the addition of a couple of convenient navigation arrows. It may be slightly confusing to the user because this menu applies to the window which lies **beneath** it rather than to the window it actually occupies. Once a project has been dragged down into the "Project Window" Video List and selected by left clicking on it, then it can be removed via this remove button. Clicking on a thumbnail representing a PTE file or an AVI movie in the thumbnail selection list above, then clicking on the "Add" button will add this PTE project or AVI movie to the Project Window's Video List. Of course you may also simply double left click the mouse on the desired file or left click and drag and drop it. There are several ways then to get the choice into the "Project Window". The navigation arrows on this menu allow moving right or left one choice at a time. As mentioned earlier, it's also possible to just right click the mouse anywhere in the "Project Window" and get a pop-up menu to perform the same tasks. Clicking on the "Clear" button will elicit a warning window which asks the user if they are certain they wish to remove all videos from the current list. If answered in the affirmative the "Projects Window Video List" will be cleared.

Following is a screen capture depicting a file in the process of being moved to the "Project Window" by the click and drag method:



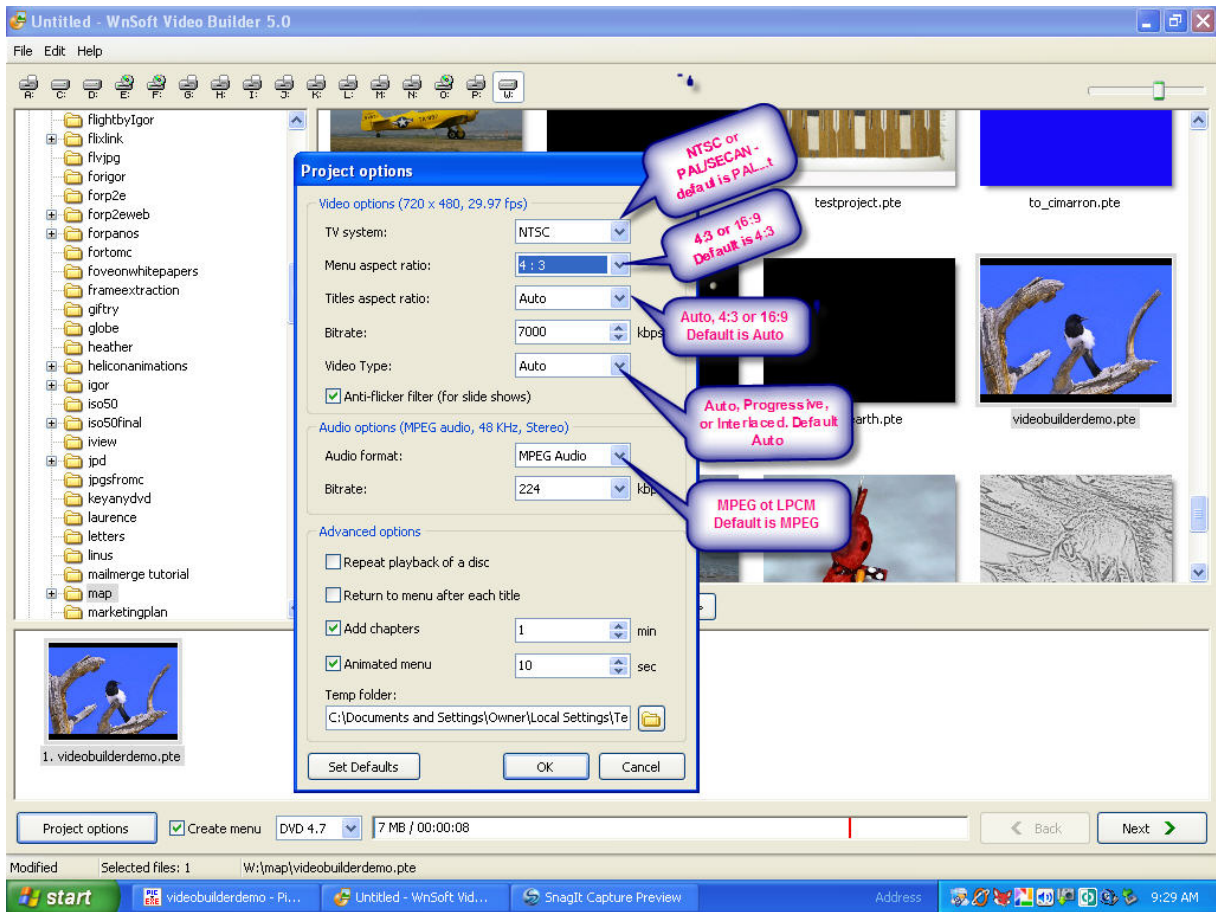
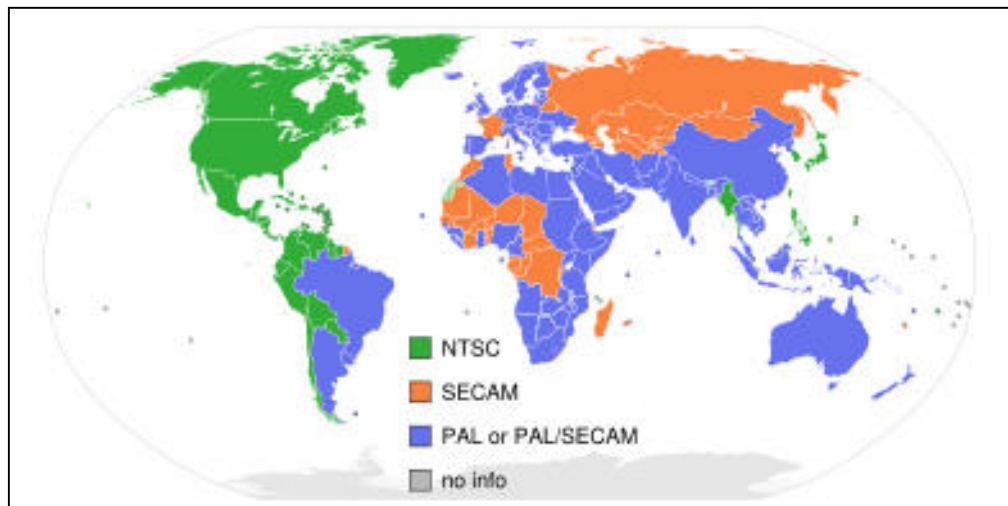


Figure 6.4

Figure 6.4 shows the "Project options" pop-up, where there are several options which can be user selected. First there is the TV System choice of one of the following: NTSC or PAL/SECAM. PAL (*Phase Alternating Line*), the default, is found in a number of countries as is SECAM (*Séquentiel couleur à mémoire*) or Sequential Color with Memory in English, which is an analog color system first used in France. NTSC (*National Television System Committee*) is an analog system used in North America, Japan, South Korea, the Philippines and other countries. Below is a graphic with a rough outline of where each is commonly found. Choose the appropriate selection for the area in which your DVD will be used.



Next choice is for the "Menu Aspect Ratio". The user choices are 4:3 or 16:9. The default is 4:3 which is the common aspect ratio of older televisions. Some of the newer flat panel TV and HD TV screens have 16:9 available so choose the appropriate one for your intended destination. Remember, this is not the aspect ratio for your slideshow, rather the aspect ratio for your menu from which you select the slide show.

The next choice is for the "Title Aspect Ratio". Normally this would be the same as your "Menu Aspect Ratio". The default is "Auto" but you can choose 4:3 or 16:9 manually.

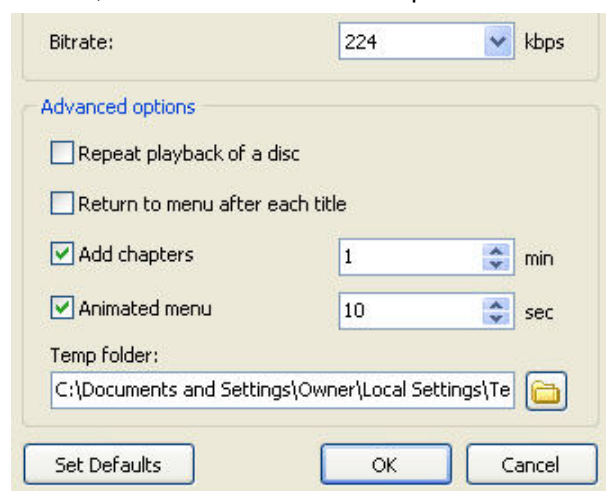
The next choice is "Bitrate". The default is 7,000 kbps. Unless you have technical reasons for changing this, the suggestion is to use the default.

Below Bitrate the next option is to set the "Video Type". The default is "Auto" which is an interlaced type. Typical NTSC television broadcast sends out signals causing 525 horizontal lines to be traced across the screen beginning on the left as the viewer watches and tracing 15,750 times per second. Lines 1, 3, 5, 7, 9 .... 525 are traced then the electron beam is swept back to the position to trace lines 2, 4, 6, 8, 10 .... 524. This entire procedure is repeated 30 times per second. Due to the "persistence" of color phosphors, that is the length of time the triad of red, blue and green phosphor dots stay illuminated after being excited by the electron beam from the cathode ray tube, flicker is minimal. But the much faster decay rate of phosphor on television monitors may make an annoying flicker possible. This brings up the second choice which is "Progressive". Progressive traces lines 1,2,3,4,5,6, etc., until the entire first screen has been drawn then returns from the bottom of the screen to do it all again for the next frame. Progressive is used on some of the newer flat screen displays so your choice will depend on the equipment you expect the DVD will eventually be used on. You may also choose "Interlaced" which is also the default under the "Auto" choice.

The next button, the "Audio format" choice defaults to "MPEG" (*Moving Picture Experts Group*) which is recommended for MP3 audio and music. The other choice is LPCM (*Linear Pulse Code Modulation*) which is useful for .WAV (*Waveform Audio Format*). In the majority of cases use the default unless you understand the specifics of need for LPCM.

The next choice is "Audio Bitrate". The default is 224 kbps which provides very good audio quality. Don't use a faster bitrate or there is risk of losing sound or having intermittent sound on your DVD's. It's possible to use a slower bitrate if there are problems, but this would be an exceptional case. The suggestion is to use the 224 kbps bitrate as defaulted in nearly every case.

The "Advanced Options" window of the "Project options" menu has several choices so it is repeated here for easy reference. There are check boxes for four of the options. A check in the box before "Repeat playback of a disc" will cause the disk to loop at the end and repeat the play rather than exit. A check beside "Return to menu after each title" will give the user access to the menu for a choice of which title to play next rather than playing them sequentially. Adding chapters to a video is very useful for finding the key nuggets of video information in lengthy videos. The default for delay on a chapter is one minute which should be ample time.



A check beside "Animated menu" (*the default*), coupled with a time as desired by the *user (default is 10 seconds)* cycles the graphic inside the menu window through the animations found for the slides being used. The user, as will be explained shortly, may select the slides used in this animation.

The user may choose the temporary folder or take the default. This space on the hard disk is used for temporary file creation.

Finally we see the "Set Defaults", "OK" and "Cancel" buttons which are self-explanatory.

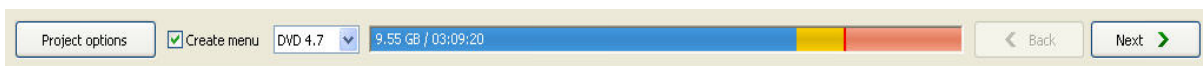
The bottom line of menu choices has been duplicated below for convenience below.



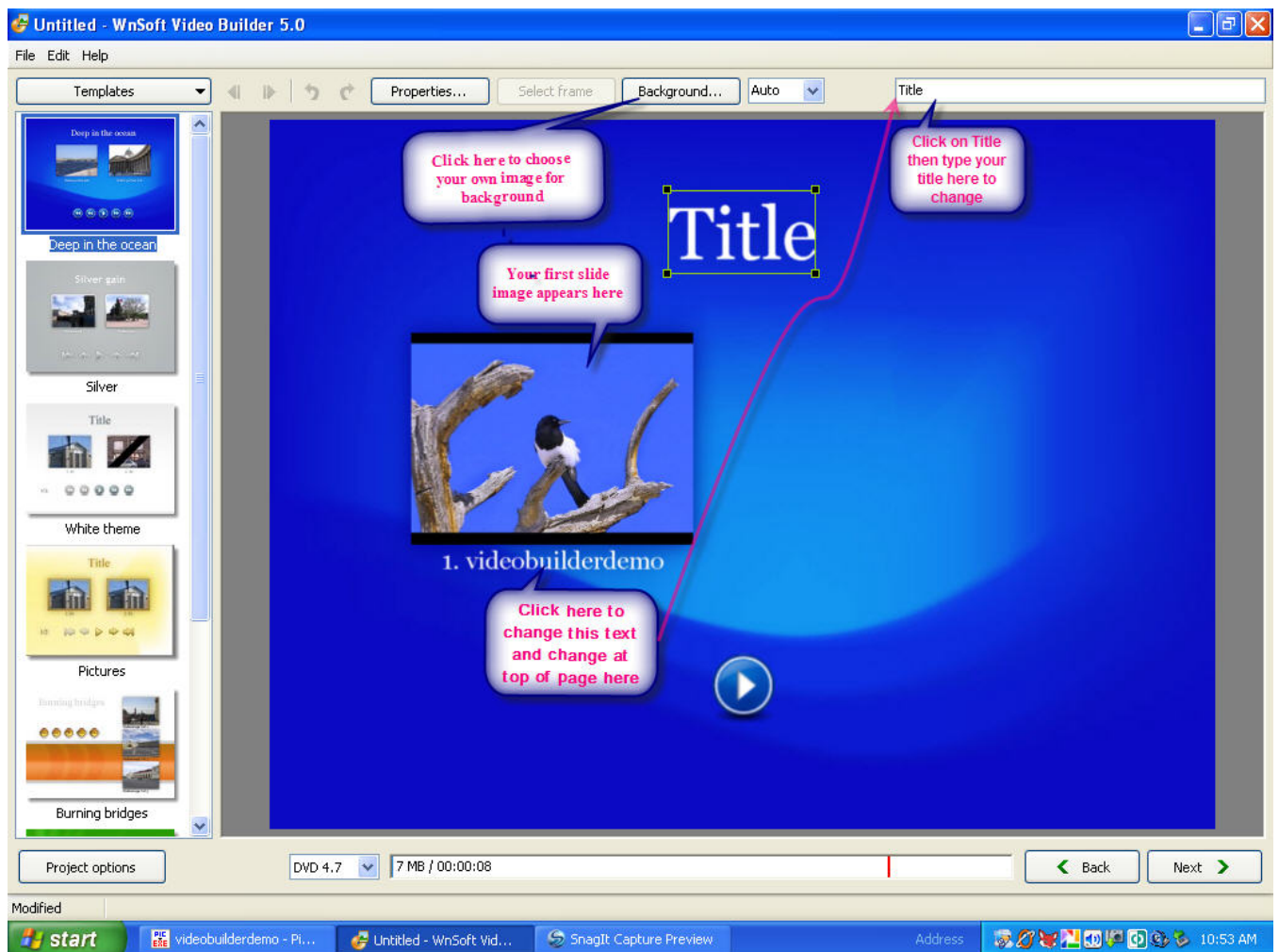
Beside the "Project options" button to the right is a checkbox where it's possible to choose whether or not to have a menu at all. The default is checked, but if unchecked the DVD slideshow will start without intervention by the user.

Next to the create menu checkbox we see a DVD capacity choice. The majority of DVD's are 4.7 gigabytes single sided. But there are also double sided DVD's as well as older and lesser capacity DVD's. If you have double sided DVD's click on the down arrow in the small blue box and select the 8.5 gigabyte choice. In the unlikely event you have some outdated DVD's you may also choose the 1.4 gigabyte option.

The next block looking to the right simply indicates both the total running time of the loaded projects files and the size in gigabytes of the total. If the capacity is greater than the space available on a DVD there will be a color warning as shown below:



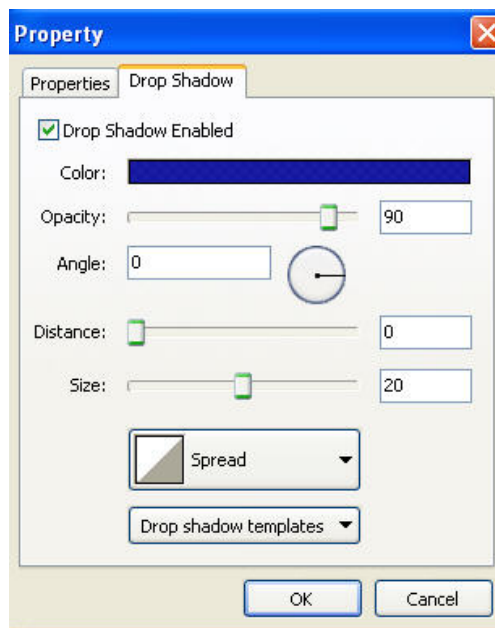
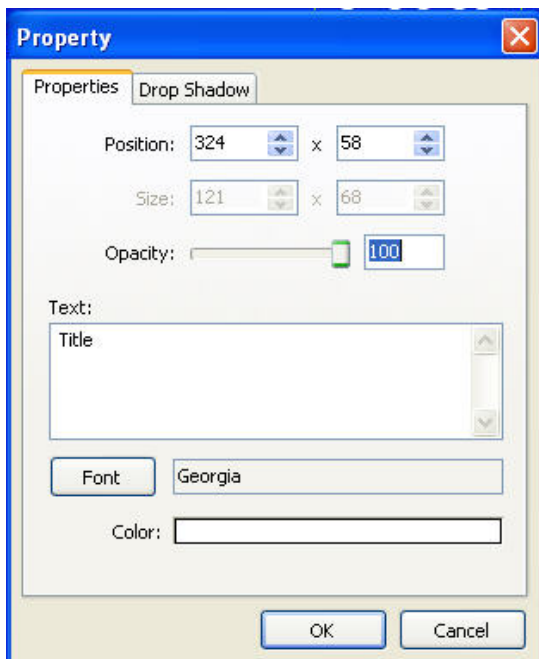
To the right of this block are the "Back" and "Next" buttons. Once all the options have been set and you are ready to proceed, left click the "Next" button and the following screen or a similar one will appear as shown in Figure 6.5. The screen appearance will depend on whether you have one or more than one project for the DVD.



**Figure 6.5**

With a single choice of PTE file or AVI movie for you DVD creation, you will see a screen that looks similar to Figure 6.5. There are seven pre-built and very attractive "themes" (templates) for menu backgrounds to choose from or you may select your own background from any available images you may wish to use. Multiple formats are supported including BMP, PNG, JPG, GIF, PCX, PhotoShop PSD and Icons. To choose your own background image, click on the "Background" button and follow the easy steps to incorporate your own image for the background.

The default word "TITLE" may be changed by clicking on it and typing in a new title text at the top as indicated by the information bar in Figure 6.5. Double clicking the word "TITLE" on the menu or clicking on the "Properties" button will pop-up another menu which lets you customize the font, opacity, position, and drop shadow as seen in the following screen capture:

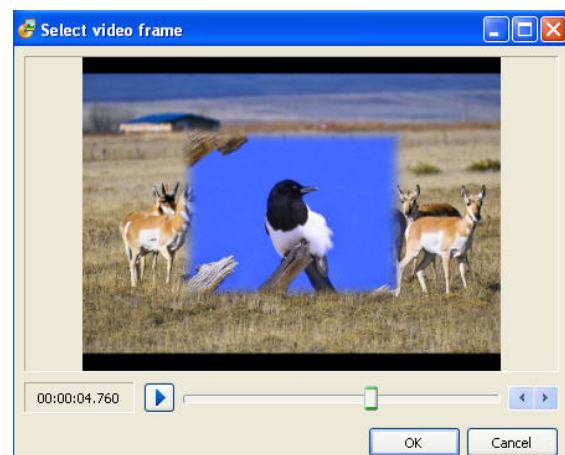


The drop shadow and text can be totally customized via the menu choices above. The best way to learn how to use these features is to experiment and observe the result. Select the color, font, opacity, size of shadow, distance, angle, spread, type of shadow, and so on. It's a very powerful feature which allows the user to totally customize the look of the menu and menu text.

The same properties and drop shadows which can be applied to the menu "Text" can also be applied to the sub-text under the animation window as well as to buttons and navigation guides.

It's possible to choose the starting frame from your slideshow which appears on the animation window. Click on the image to select it then the "Select Frame" button (*located between the Properties button and the Background button*) becomes active. Click on the "Select Frame" button and the following appears:

The slider bar lets the user select the starting slide. In the sample, the frame selected is in transition between two frames. The arrows on the right let the user fine tune by advancing or backing up one frame at a time. Use the slider bar for large changes and the arrows to fine tune to an individual frame. When a selection has been finalized then click on the OK button and that frame will then appear on the Menu as the starting frame for the 10-second (*default*) animation. If you desire to cancel just click the "Cancel" button.



As described earlier, the next button is the "Background button". Figure 6.6 below shows that the Background button follows the "Select frame" button.



**Figure 6.6**

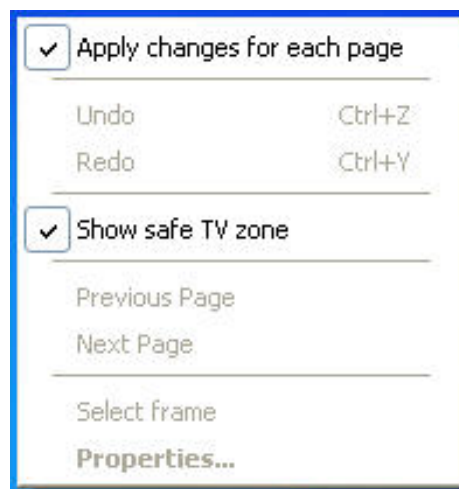
Clicking on this button pops up a menu that allows browsing to select an image to be used as a custom background for your menu. As mentioned earlier file types supported are: BMP, PNG, JPG, GIF, PCX, Targa, PhotoShop PSD and Icons.

The next button is identical to the "View" button from the Objects and Animation screen. The default is "Auto" but if you need to have more working room or see things closer, you may click on the down arrow in the small blue box to the right of the word "Auto" and choose from various levels from 500% down to 10%.

Note the darker blue border around the screen. Everything inside this blue border will be seen on the television monitor when the DVD menu is displayed. This is known as the "TV Safe Zone". By right clicking the mouse button anywhere on the menu, a box will pop up and you see the following menu which will allow you to choose to display the TV Safe Zone if you wish.



This pop-up box allows another way of undo, redo, previous page, next page, and some other features found on the alternate menu always visible at the top of the menu page screen. In addition if you click in the box beside Show safe TV zone as has been done in the sample, a border will bound the TV viewing area. Anything typed or any objects touching this area will not be visible on the television screen for the selected aspect ratio.



Finally, as can be seen on the menu screen sample, when there is more than one project to be burned to DVD in the "Project Window" there will be two animated images on page one. If there are more than two projects, it becomes necessary to use the "Next Page" feature from either the menu bar (*previously discussed*), else by right clicking on the body of the menu page. It's also possible to select the project from the pop-up menu. Each of these animated 10-second screens may be customized by selecting the frame which begins the animation as described previously. Also notice the additional "Navigation buttons" which allow the user to choose the desired video to run. These buttons also may be customized by right clicking, then by choosing "Properties" from the ensuing pop-up menu as seen above.

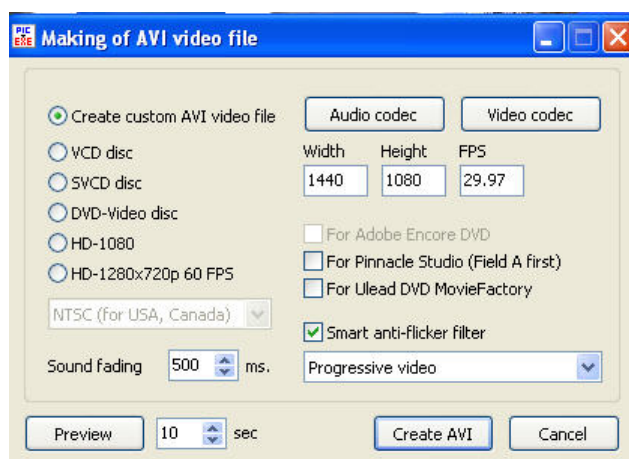
The final button is the "Template" button seen at the upper left on the permanent menu bar on the DVD menu screen. If you create your own custom background image you are given the opportunity to save it as a template. They are automatically numbered beginning with template7. The pre-designed templates are numbered one through six and any you create then begin with the name template7 but you can rename it to a name of your own choosing.

### 6.3 Create AVI File

From the Main Menu of PicturesToExe, when the "Video" button is clicked, the following pops up:



When the "Create AVI File" button is clicked we get a menu offering six different choices: In the screen sample depicted, the "Create custom AVI video file" is marked. This choice lets the user decide the dimensions in pixels as well as choose from available audio and video codecs. The rest of the choices are pre-configured, so choosing dimensions, codecs and frames per second are user variables only for a custom AVI file. When any of the other choices such as VCD disc, DVD-Video disc, etc., are checked, the audio and video codec along with the width,



height and FPS (*frames per second*) disappear from this box. If one has plans of burning the AVI file to a DVD or CD it's best to use one of the other choices rather than create a custom AVI video file. The other choices are pre-configured for best performance and other burning software (*Not Video Builder*) as indicated on the right. If you have one of these other packages, then you can use them to burn your media depending on their individual capabilities and limitations which vary with the version of this software you are using.

Below are the choices and some details about each.

### **VCD disc: Video Compact Disc**

The video compact disc is a lower resolution MPEG1 which has an NTSC resolution of 352x240 pixels and a PAL/SECAM resolution of 352x288 pixels. The aspect ratio is 107.8 or very close to 4:3. The NTSC frame rate can be either 29.97 frames per second (*fps*) or 23.976 fps. PAL/SECAM frame rate is always 25 fps and the video bitrate is 1,150 kbps.

### **2. SVCD disc: Super Video Compact Disc**

The super video compact disc is MPEG II and about 2/3 the resolution of DVD and about 2.7 times higher than VCD. The NTSC resolution is 480x480 pixels and PAL/SECAM resolution is 480x576 pixels. The aspect ratio is 4:3 with an NTSC frame rate of either 29.97 fps or 22.976 fps. PAL/SECAM frame rate is 25 fps. The video bitrate is up to 2,600 kbps (*thousand bits per second*) constant or variable and the audio is MPEG1 audio layer II with a bitrate of 44.1 khz. SVCD is not compatible with the DVD standard

### **3. DVD Video Disc**

The DVD video disc can be MPEG 1 or MPEG II. It has an NTSC resolution of 720x480 pixels and a PAL/SECAM resolution of 720x576 pixels. The video bitrate can be as high as 9800 kbps (*MPEG II*) or 1856 kbps (*MPEG I*) but typically will average less and is variable depending on the action speed of the scene on commercially produced DVD movies. The NTSC frame rate is either 29.97 fps or 23.976 fps with PAL/SECAM being always 25 fps. Interleaving is only supported by MPEG II and nearly all commercially produced movies are MPEG II.

### **4. HD-1080**

**1080** is the shorthand name for a category of video modes. The number *1080* represents 1,080 lines of vertical display resolution. 1080p is considered an HDTV video mode. The term usually assumes a wide screen aspect ratio of 16:9, with a horizontal (*display*) resolution of 1920 pixels across and a frame resolution of 1920x1080 or exactly 2,073,600 pixels. The frame rate in hertz can be either implied by the context or specified after the letter p (*such as 1080p30, meaning 30 frames per second*). The HD-1080 may be either interlaced or progressive. Choose the one you wish from the menu option. Auto is interlaced.

### **5. HD-1280x720p 60 fps**

**The following from Wikipedia:**

**"Many PC's and laptops are actually more HD ready, in the true sense of the phrase, than the HD ready label requires. They will not, however, qualify for the HD ready label, unless they also meet the connector requirements.**

**Any sufficiently fast computer with a 1280x720 or higher resolution display is capable of displaying HD video, even though computers are generally not advertised as such. This video**

may come from the Internet, data files, or a DTV tuner card. The Internet already offers some HD content, like movie trailers available for free download from Apple, Inc."

So what this means is that for 1280x720p at 60 fps and for 1080 and 1080p much will depend on what hardware is used as well as having proper cables. There will be an appendix containing a tutorial about creating HD AVI files. This area is very new and everyone is still learning the best ways to get optimal quality. PTE gives the user the ability to create these specialized discs and files in conjunction with other software.

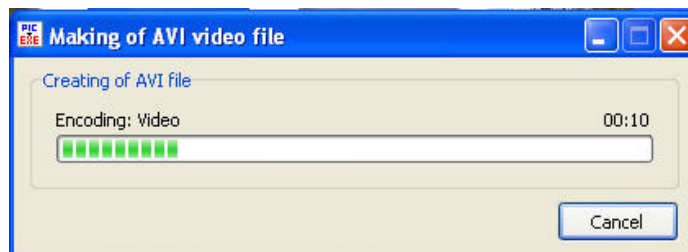
Adobe Encore DVD supports DVD disc and SVCD but not VCD, 1080 or HD1280x720p 60fps. Pinnacle Studio and ULEAD DVD Movie Factory support all five of the choices offered.

For custom AVI creation, you may choose progressive or interlaced depending on the device capability on which the AVI file will be played.

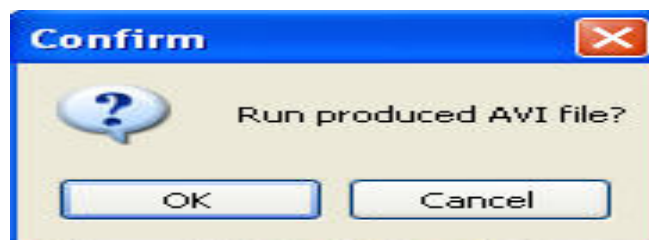
Choose NTSC or PAL/SECAM depending on your personal needs for each of the five choices. The suggestion is to leave the smart anti-flicker filter checked and keep the 500ms sound fading default. The 10-second default for preview is appropriate to see the results before proceeding, but you may change it to suit your own preferences.

When finished with the selections, left click the mouse on "Create AVI" or you may choose to "Cancel" by clicking the "Cancel" button.

When the "Create AVI" button is clicked, PTE will begin and you will see the progress like this:



When the AVI file is completed, the following pop-up will offer a choice of running the file or not.



## APPENDIX A – PTE KEYBOARD SHORTCUTS

Add All Pictures to Slide List	Ctrl+D
Add Keypoint Here	Ins
Back One	Ctrl+PgDn
Bring to Front	Shift+PgUp
Burn DVD-Video disc...	Shift+F1
Button	Ctrl+4
Classic View	Ctrl+F1
Clone Keypoint	Ins
Copy	Ctrl+C
Copy Slide	Ctrl+C
Create AVI file...	Shift+F2
Create Backup in Zip	Alt+B
Create Scean Saver...	F7
Create Slideshow	F9
Create Slideshow and Run...	Ctrl+F9
Create Slideshow As	F8
Create Templates from this Show	Ctrl+T
Customize Current Slide...	Ctrl+U
Customize Slide	Ctrl+U
Customize Slide Ctrl+U	Ctrl+U
Cut	Ctrl+X
Date	Ctrl+F6
Delete	Del
Exit	F10
Extension	Ctrl+F5
File Info	Ctrl+U
File Panel as Thumbnails	Ctrl+1
Forward One	Ctrl+PgUp
Frame	Ctrl+5
Fullscreen View of File Panel	F3
Fullscreen View of Slide List	F4
Help	F1
Horizontal View	Ctrl+F2
Ignore Objects Not Selected	Alt+1
Image	Ctrl+1
Insert Slide	Ctrl+N
Move to End	Ctrl+End
Move to Top	Ctrl+Home
Name	Ctrl+F4
New File	Ctrl+U
New Transition	Ins
New	Ctrl+N

Objects and Animation	Ctrl+B
Open picture	Ctrl+W
Open	Ctrl+O
Paste	Ctrl+V
Paste Slide	Ctrl+V
Play/Stop	Ctrl+P
Preview	F5
Project Options	Ctrl+P
Random Order	Alt+R
Rectangle	Ctrl+2
Redo	Ctrl+Y
Rename	F2
Replace Main Image	Alt+S
Rotate clockwise (lossless)	Ctrl+F
Rotate counterclockwise (lossless)	Alt+F
Start Preview from the current slide	Ctrl+R
Save	Ctrl+S
Save As	Shift+Ctrl+S
Select All	Ctrl+A
Select All Pictures	Ctrl+A
Send to Back	Shift+PgDn
Set Comments on All Slides to Current One	Ctrl+M
Set Time of Points	Ctrl+T
Shift Points	Ctrl+H
Show Tree	Ctrl+G
Size	Ctrl+F7
Slide List as Thumbnails	Ctrl+2
Synchronisation Timeline	Ctrl+L
Text or Hyperlink	Ctrl+3
Undo	Ctrl+Z
Unsorted	Ctrl+F8
Vertical View	Ctrl+F3
Zoom In	Ctrl+F11
Zoom Out	Ctrl+F12

## APPENDIX B – UNDERSTANDING AND USING KEYPOINTS

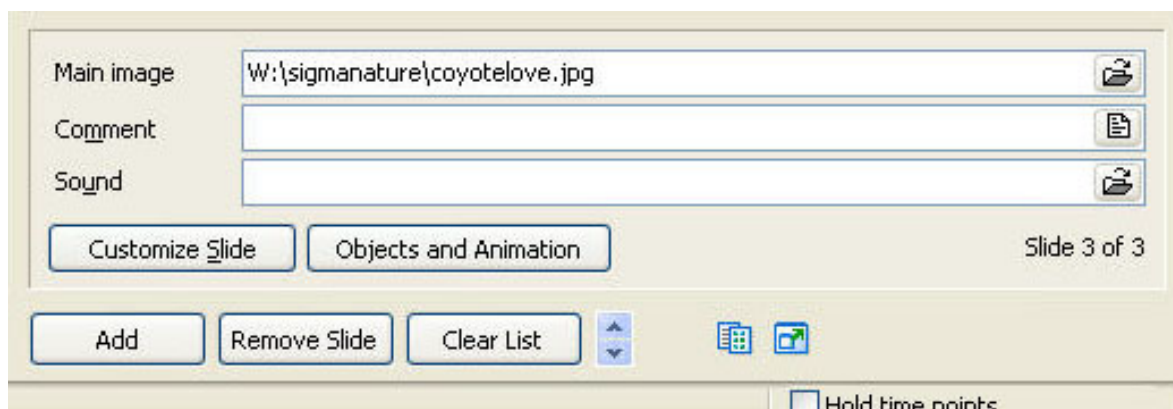
Keypoints are, in PTE terms, the same as keyframes in video terminology. Keypoints are designated places along a timeline continuum which define starting and ending points for some animation connected with an image or video.

With PicturesToExe (*called PTE hereafter*) we use keypoints as a way of determining at which point in time some animation which we have programmed for our still images begin and end. The types of animations we can do in PTE are pan, zoom, rotate, scroll, distort, and change opacity. We can do these things independently or in concert. That is we can combine these different movements and states between any two keypoints. We can perform these movements on a single image or "object" or we can link two or more objects together and perform the same or independent actions or animations on each. PTE has made it very easy to perform complex motions and it's actually very easy to do, much easier than with some other products.

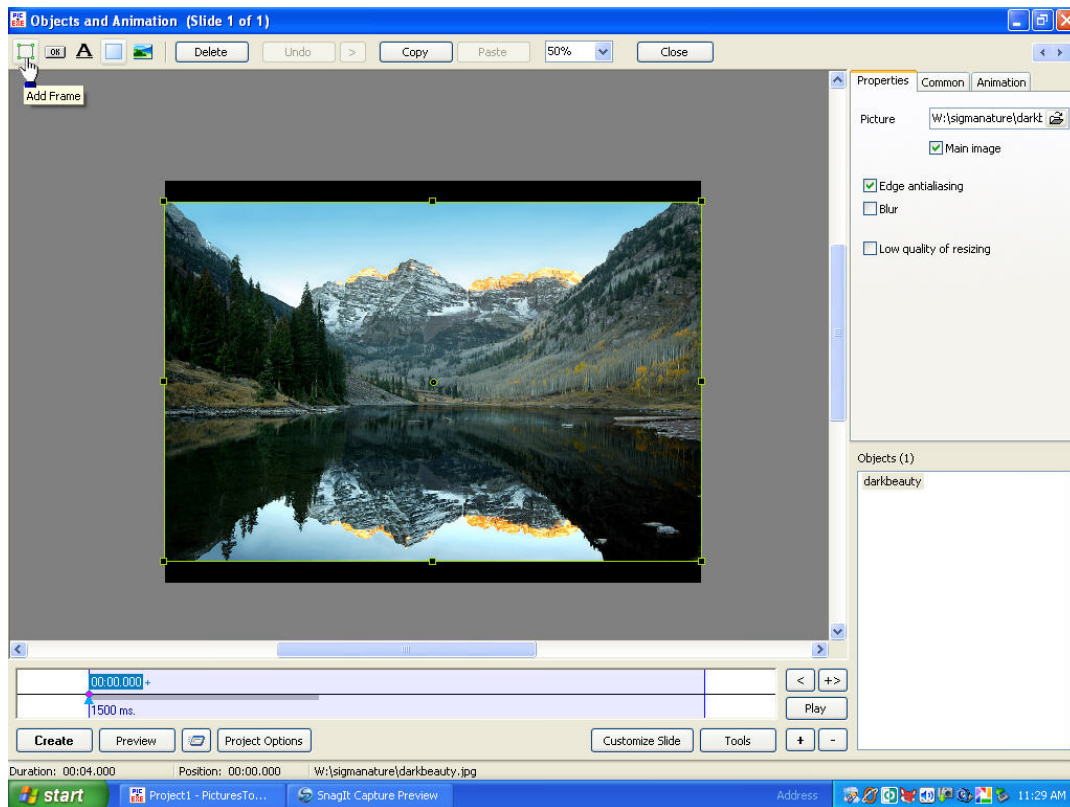
To understand keypoints we need to first look at the place where we create and store these handy little reference points. This place is referred to as the "timeline". All keypoints with PTE are placed along the timeline. The timeline always has the same dimensions on our computer screen, but the increments of time represented can be as slow as a portion of a second or as long as hours depending on how long we wish to keep a single slide on the screen. With PTE, beyond hardware limitations such as RAM, video RAM and storage capacity, we have no practical limit to the number of slides we can have in a slideshow and no real limit as to the number of keypoints we might place along a timeline.

Each slide and each "object" has its own timeline. Even though the actual position of the timeline doesn't change, when we "select" a new slide or a new "object" the timeline we see is unique to that slide or object and the keypoints on this timeline refer only to the presently selected object.

So rather than continue to describe the timeline and keypoints, let's actually look at a screenshot from PTE. The timeline and keypoints are always found on the Objects and Animations (O&A) screen which is accessed from the Main slide page by left clicking the mouse when the mouse cursor rests on the Objects and Animations button on the bottom of the main screen. First let's look at the Main screen to see where the O&A button is located.



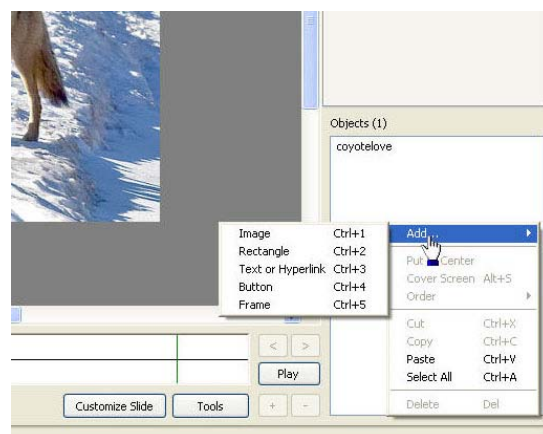
Above is a screen capture from the lower right of the Main screen. Click first on the slide you wish to animate in the slide list then click on the Objects and Animation button (*beside Customize Slide*) and you will immediately see the Objects and Animations screen pop up. Below is a screen shot.



There are several things we need to understand about the screen as seen above. First we need to look at the top right where we see three tabs named Properties, Common and Animation. Below these three tabs we see the "Picture block which informs us about the currently displayed image. This block gives us the path and folder where the presently displayed image is located on our computer. Beneath we see a block with a check mark that says "Main Image". The main image simply refers to the selected picture from the Slide List on the previous page. If we add supplementary images or PNG "objects" they will appear under this image in the "Objects" list seen in the lower right. In this case there is only one image. If additional pictures (*called objects*) are added, they are each placed on separate "layers" in PTE. There is no practical limit to the number of objects we can have other than video card RAM and GPU capacity. In practice, we probably wouldn't have more than five or six objects on a single slide, but at least one slideshow has been made which had over 500 separate objects all animated and performing their own actions simultaneously.

To add new images or "objects" we can left click our mouse with the cursor inside the Objects box but not touching any present object in the list. This "clears" any objects selected so we can then "right click" the mouse and a menu will appear as seen on the left.

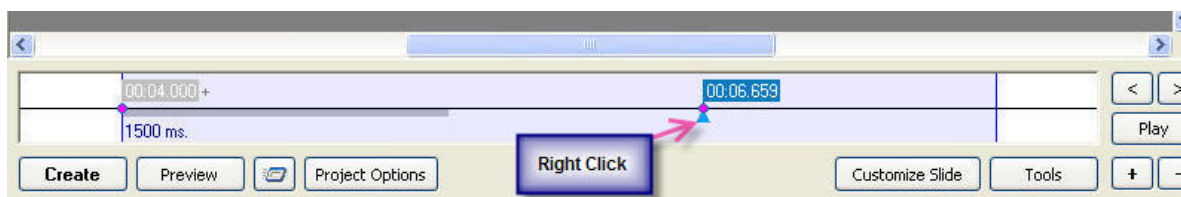
From this menu we place the mouse cursor over the "Add" and another menu block pops up. From this new menu we have a number of choices, but in this case we are interested in adding images so we then either press Ctrl+1 or simply left click on



"Image" and another browse menu will appear allowing us to browse our hard disk, etc., and select the image to be added.

If we wished to have text or animated text we could also click on the "Text or Hyperlink" and easily add text complete with the ability to color, size, add drop shadows, etc. So really it's very easy to add more images to this particular slide if we choose.

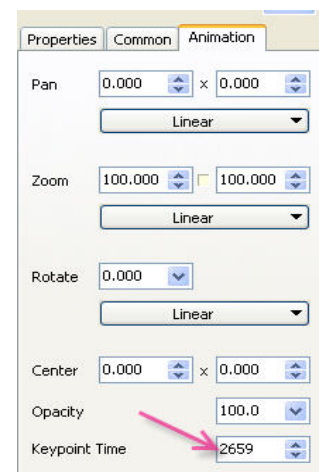
The Rectangle, Button and Frame we will ignore for now and defer explanation for another tutorial. Right now we simply want to understand how to add a second or third object to this slide. This "object" could be a picture, text, a PNG transparency, a button, a frame or other object that we wish to use. A typical case where we might want multiple objects could be an animated puzzle where we animate the pieces, move them about and make them all "fit" into an image at the end of an animation. But since this is about Keypoints, let's now have a look at the timeline where we create keypoints.



Above we see a screen capture from the bottom of the O&A screen. This is the timeline and to understand keypoints we need to understand this timeline. The timeline is divided into two vertical blue and white sections by the horizontal dividing line. Whenever we go to the O&A screen and click on a slide in the objects list to select it, a starting keypoint is automatically placed at the far left of this blue area. The keypoint on the left of the timeline above shows a value of four seconds. This is because the slide we have selected is actually the second slide in the slide list and the default time for each slide is set to four seconds. So this point in real time represents four seconds after the slideshow has actually begun. The first slide has been displayed and this slide is ready to go.

Note the number "1500 ms" printed on the bottom blue part of the timeline right underneath the first keypoint. This tells us that the "transition" time of 1.5 seconds (1500 milliseconds) has been set for whichever transition has been chosen for this slide. In fact, 1500 ms is the "default" transition time for transitions in PTE. Of course by clicking on the Customize Slide button we can change the display time for any individual slide as well as the time for any transition. But for now let's look further and we see a small grey bar extending to the right on the junction line dividing the blue top and bottom of the timeline. This grey bar graphically represents 1500ms. So we have a visual idea of how long, in respect to the four seconds set for the slide display, the actual lead-in or starting transition is for this slide.

To create animation, we need a minimum of two keypoints on the timeline. To place keypoints on our timeline we place the mouse cursor just "underneath" the horizontal dividing line somewhere to the right of the initial keypoint and right click. A small blue "arrow" pointing upward will appear and a pop-up menu from which we choose "Add Keypoint Here" by left clicking the choice. As seen in the example above, a second keypoint has indeed been added in this manner. This keypoint shows the value of 6.659 which means six seconds and 659 thousandths of a second. This means that this particular keypoint exists a little more than six and a half seconds after the start of the slideshow. In addition to the "running time" value on the keypoint itself, if you look





carefully at the Animation screen on the top, you will see that a different number exists inside the Keypoint Time Block. This number, rather than representing the time from the start of the entire slideshow to this point on the timeline, represents the time on the timeline from the start of this slide. The number 2659 represents in thousandths two seconds and 659 thousandths of a second. So we now know by the keypoint on the keypoint itself and the keypoint time in the animation block how long the actual slideshow has been running and where in time from the start of this slide this particular keypoint resides.

Notice also the Pan, Zoom and Rotate numbers. When a slide is first opened in the O&A screen with a "Fit to Slide" setting, the pan numbers are always zero as is the rotate number. The zoom of 100 represents not 100% of the slides native size, but a 100% reference for purposes of zoom. So these numbers tell us initially that no animations have been yet programmed for this slide.

In a later tutorial we will examine the linear and non-linear movements, but for right now let's ignore them. Notice that the Opacity is defaulted to 100%. With PTE we can make any level of transparency for any image by selecting that image and simply changing the opacity. We can actually make the image invisible by setting this figure to zero. To this point we have learned how to open the O&A screen, place additional objects in the Objects List, create a keypoint and understand the information seen on the timeline, keypoints and most of what we find under the Animation tab.

But how do we get the keypoint exactly where we want it on the timeline, you might ask. The keypoint's position can be set in two different ways. First we can simply left click with the mouse cursor on the selected keypoint (*the keypoint turns from grey to blue when selected*) hold down the left mouse button and "drag" the keypoint anywhere along the timeline. Second, we can type in a value in thousandths of seconds in the keypoint block or we can click and hold on the up and down arrows in the small blue block to the right of the keypoint block. This way we can control the actual position on the timeline to the nearest thousandth of a second.

At this time note that though you can have unlimited numbers of keypoints, at some point they "could" lay so closely that it would be difficult to see them or read them. Also should two keypoints occupy the identical time, the normally blue keypoint will turn red. You may want to test this by simply sliding a keypoint over another. So when keypoints rest very, very close to one another how do we possibly select one? It would be nearly impossible with a mouse to get such precision but there is a provision for this!

Once we have two or more keypoints on the time line we have two ways to "select" them. If convenient we can simply click on the keypoint by placing the mouse cursor over it and left clicking the mouse. But if for any reason that isn't convenient, such as the keypoints being located on top or nearly on top of one another, just click on a nearby conveniently accessible keypoint and then click on the right or left arrow buttons on the far right of the timeline (*see capture below*). See red and blue arrows:



Clicking on these will move the selection to the keypoint immediately left or right respectively. You can select keypoints with absolute precision this way. As each keypoint is selected it turns blue and comes to the "top" layer when there are more than one lying in close proximity.

While we have the graphic close, look at the 1500 ms print and the grey bar above it on the right of the timeline. As you probably suspect by now, this indicates the transition from this slide to the next slide which is also defaulted to 1.5 seconds or 1500 ms. Also examine one more feature of the timeline and keypoint. Notice the Plus and Minus buttons underneath the "Play" button on the right bottom of this graphic. These handy features will add and delete keypoints. To use them you first select a keypoint. In the graphic above, the starting keypoint has been selected because it displays in blue. Were you to click on the Plus (+) button an additional keypoint would be inserted each time you click. Were you to select one of the keypoints to the right then click the Minus (-) button, the keypoints would be deleted in sequence from right to left. This is a very handy way to quickly place a number of keypoints on the timeline. It's certainly faster than right clicking below the dividing line the using the Add Keypoint here menu. Since you may slide the keypoints anywhere on the timeline with the mouse, this feature is a major time saver when you have a complex animation requiring several keypoints to be created.

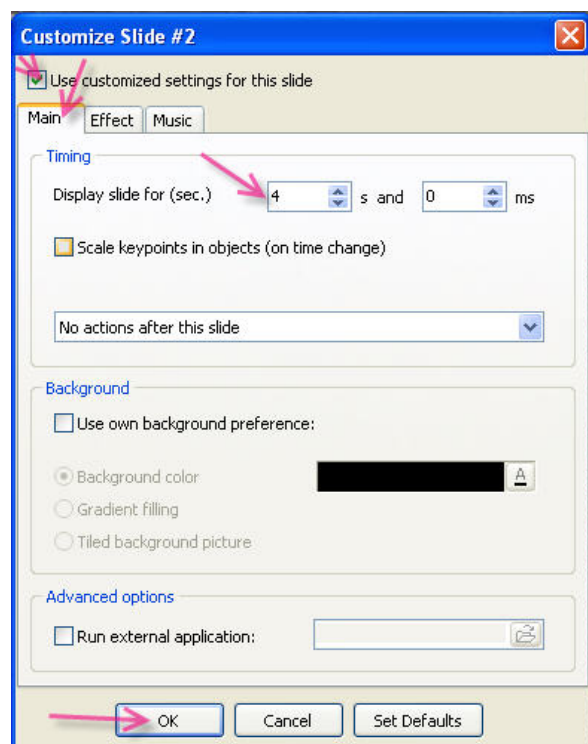
Until now we have talked about how to create and move keypoints and what they signify, but what about the "meat and potatoes?" How do we actually "animate" an image? This is actually the easiest part of the entire process. But it was necessary to thoroughly understand keypoint generation, movement and function before we actually get to do the "fun" part!

So, we have opened our PTE program and loaded some slides on the Slide List on the Main Screen. We have highlighted the first slide in the slide list then clicked on the O&A button to get to the O&A screen. If the slide in the Objects list is not already selected (*highlighted*) then click on that slide in the Objects list and it will turn blue and a keypoint is automatically inserted at the very beginning of the timeline. Quite probably there will already be a keypoint highlighted and you are ready to proceed.

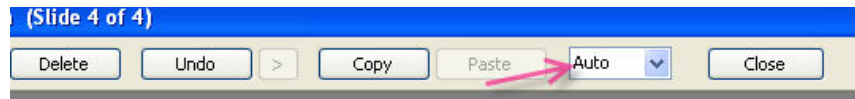
Next let's put a bit more time on the slide. Four seconds is pretty fast for a decent animation so let's go to the bottom of the screen and click on the "Customize Slide" button and this screen pops up. If the "Main" tab isn't selected click on it first. On the very top left as indicated by the short red arrow is a checkbox with the text "Use customized settings for this slide" next to it. Left click in this box and a checkmark will appear. Next look at the time indicated inside the box next to "Display this slide for (sec.)" and it will probably say "4". Let's change this to "60" so we have a full minute to play with for our animations for the slide.

Finally click on "OK" in the box indicated by the red arrow at the bottom left side of the window.

The box will disappear and you will once again see the full-unimpeded O&A screen.



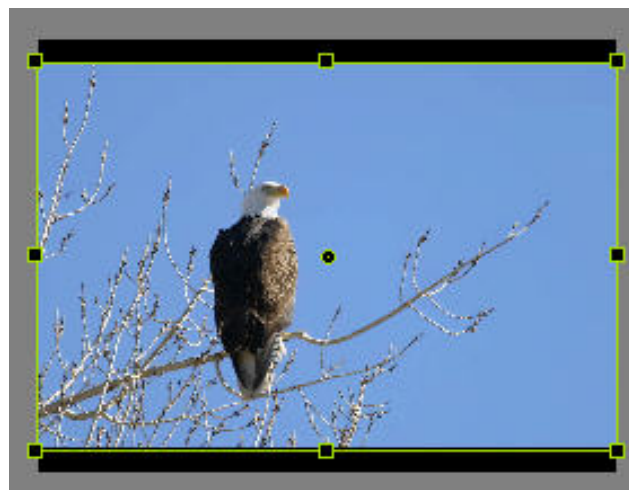
The next thing we want to do is to change the default view. Look at the top of your screen and find the "View" block located between "Close" and "Paste". It will probably have "Auto" set for the default as in the sample below:



Click on the small arrow to the right of the word "Auto" and select a much smaller percentage such as 25%. When you do this, your picture will shrink and you will probably see a black border above and below your image. Whether there is a border depends on the aspect ratio of your image. If your pictures are from a dSLR (*digital single lens reflex*) or film SLR with a removable lens, the aspect ratio will be not as tall as the default 4:3 screen monitor representing a normal computer screen. If you are using a fixed lens digital camera, it may have a 4:3 aspect ratio and you "might not" see the black border above and below the screen. In any event, the black area you see represents the computer monitor and if there is any black showing this means there will be black on your slideshow when you run it.

Notice the green bounding rectangle around the image. Below is a screen capture showing this bounding rectangle, What you see on your screen will have much more grey around it, but you can get the idea from this capture.

With the first keypoint want to use the image by one of the the one at the top image up to make it entire black area of "optional". If you border then you may



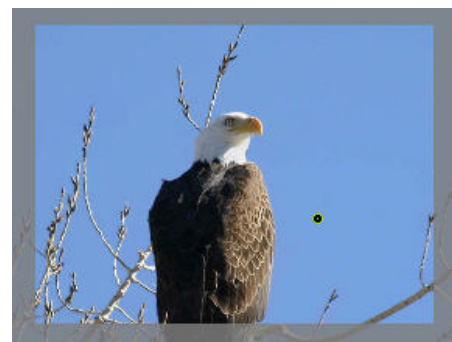
highlighted, you may mouse to "grab" the little squares such as center and "drag" the larger to cover the the screen. This is don't mind the black skip this step.

Assuming you have eliminate the black and down or left and mouse in the middle

from the green bounding rectangle and drag it about as you wish. However you leave the image is the way the image will appear as it is played in the slideshow when it first appears on the screen.

resized the image to you can move it up right by clicking the of the image away

Next place a keypoint at about the 20 second position. This is not critical, just give yourself some time for an animation to be seen. When you have this keypoint set and selected (*highlighted*), then once again click on the green bounding rectangle and drag the image to make it considerably larger with the subject in a different place. It could appear something like the one here:



Congratulations! You have just created your first animation. To see it, just left click on the "Preview" button on the bottom of the screen next to the "Create" button.

The slide will open with whatever transition might be set and then zoom throughout the 20 seconds or so you have set and stop in the position you left at the second keypoint and stay that way for another 40 seconds.

So, how about another animation? With the cursor on the second keypoint and with it highlighted (*selected*) click on the small Plus (+) button and another keypoint will be inserted. Slide that one to the right to about the 40 second point and with it "selected," go back to the bounding rectangle with the mouse and change the size and perhaps drag the image sideways a bit. This time, instead of using the "Preview" button, let's use the tiny icon to the right of the Preview button. Click on it and your slide will play. So what's the purpose of this small button? It's a single slide to end of show preview rather than a start from the beginning of the slideshow preview. If you were working on slide 20 of perhaps 40 slides, you really wouldn't want to wait for 19 previous slides to play to see the one you were working on. Both the Preview and the Single slide Preview buttons will play sound or music associated with this slideshow if there is any. While we are at it, let's use one more feature. When the show has finished look to the right and find the "Play" button. When you press this button only the slide you are presently displaying will play and while it's playing the button will change from "Play" to "Stop" so you can stop it at any time. Also your picture will not automatically resize to full screen but will play at whatever "View" size (*in this case 25%*) you have set. In addition, music or sound will not play. So you have three ways of seeing a "preview" of your slide. You can use the Preview button which plays the whole slideshow from beginning to end, you can use the "Start from this slide preview" which will play the current and any following slides, or you can use the "Play" button which will play the current slide and stop. At any time when the full Preview is playing or the Start from this slide, etc., pressing the ESC key will halt the action and return to the O&A screen.

OK, we still have 20 seconds to play with so let's highlight the 40 second keypoint and right click the Plus (+) button once again. This time, instead of sliding the new keypoint another 20 seconds to the end, just slide it over about 5 seconds worth. With the keypoint selected, go to the Animation Tab at the top and click on it if it's not already selected. Then look down near the bottom and find the "Opacity" block. Click inside and change the 100 to Zero (0). Now go back to your last keypoint and select it and again click on the "Plus" (+) button. Slide the new keypoint another five seconds to the right and with this keypoint highlighted go back to the opacity block and change the zero to 100. Now go back to the last keypoint and insert one more and drag it to the end of the timeline (*another 10 seconds*). Having done this with the last keypoint highlighted, go back to the Animation tab and find the "Rotate" block. Click on the small arrow in the blue to the right and you will see a "slider" appear. Drag the slider bar all the way to the right side.

Now run your slide again. You should see a zoom, followed by somewhat of a pan followed by the image fading out completely and re-appearing, followed by a 360 degree rotation to the right.

Congratulations! You have just learned to zoom, pan, rotate and change opacity by using keypoints. Now it's time to play and get familiar with what to expect.

#### **A few caveats here:**

If you want to stop animation such as stop a zoom or pan and hold the image for a time before going to the next animation, you can right click on any keypoint and "Clone" the keypoint. Then just slide the "Clone" keypoint to the right and the image will stay in the last keypoint position until you change it with yet another keypoint and animation.

When you use an opacity change, the change will happen gradually over the time between keypoints. If you want to hold a particular opacity, you must create two keypoints with the same opacity and spread them on the timeline for the duration you wish to preserve. For example, if you want the image to disappear and stay gone. When you set a keypoint to zero opacity and there is one further along at 100% opacity, the image will gradually fade in during that period, even if it's two or three minutes. So if you want the object to stay invisible you set the keypoint where you want it to begin to fade out to zero then another keypoint set to zero a bit further along the time line. The object will stay at zero opacity between these keypoints. However, if there is an ending keypoint with the default 100% opacity the slide will again appear if you don't set the final keypoint also to zero to keep it invisible, etc.

## APPENDIX C – PROPERTIES OF OTHER OBJECTS

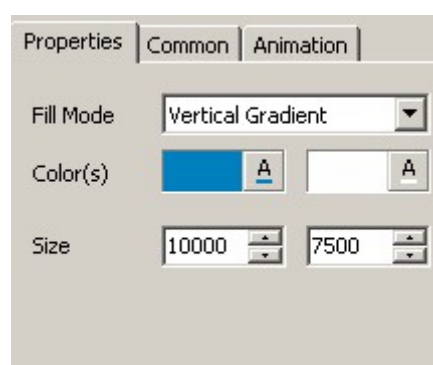
### 1. INTRODUCTION

In Section 5.2.1 in the main body of the text of this guide, the **Properties** tab in the **Objects and Animation** window was described for any image inserted into the window. However the **Properties** tab appearance and facilities is different for the inserted objects of “frame/rectangle”, “button” and “text”. The different **Properties** tabs for these objects are described below with an accompanying explanation of the facilities that each tab provides.

### 2. FRAME/RECTANGLE TAB

The inserted objects of **Frame** and **Rectangle** have the same **Properties** tab layout. As shown in the screen dump, there are four adjustments possible.

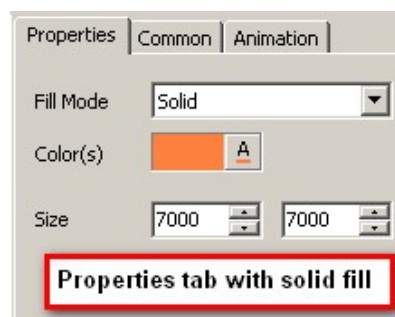
For the **Frame** object, these adjustments have no function, as the frame only has a border is just a means of collecting a number of objects together to give them a common animation. So you cannot fill a **Frame** or change its colour. However you can change the frame size by typing horizontal and vertical dimensions into the two **size** boxes (see below).



For the **Rectangle** object, the type of fill can be changed using the **Fill Mode** box and the colours of the fill can be changed using the **Color(s)** box. Three examples of a filled rectangle are given below, one with a solid fill, one with a vertical gradient fill and the other with a diagonal gradient fill.



Note that the tab appearance changes to show only one colour adjustment when a **solid fill** is selected.



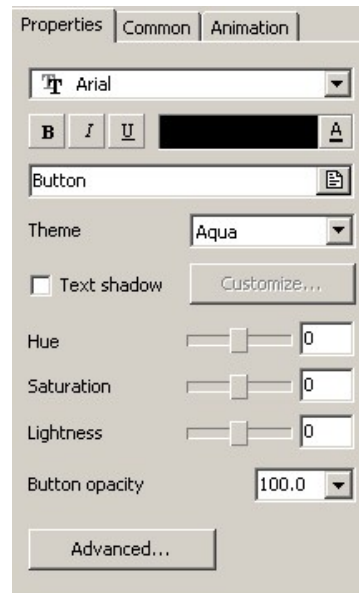
For both the **Frame** and the **Rectangle**, the **Size** boxes show the dimensions of the object in pixels. The first box values refer to the width and the second to the height. You can set specific dimensions of an object by either entering values into the boxes or by using the up/down arrow keys at the side of either box. However, for some reason, if you manually alter the object size by dragging its adjustment

handles, the values in the boxes do not alter. Thus the best way to size and object is to drag its adjustment handles and only use the **size** boxes when you want very precise dimensions.

### 3. BUTTON TAB

#### 3.1 Basic Tab

The **Properties** tab for buttons has a number of adjustable controls. When you insert a button, a standard size and colour button appears in the centre of the O&A window. Using the first two controls, the font type, format and colour of the button text can be altered. Note that the overall dimensions of the button and its text are controlled by the size of the box as determined by dragging its adjustment handles and there is no facility to specify the font size.



Here is the default button appearance when first inserted into the O&A window.



#### 3.2 Button contents list



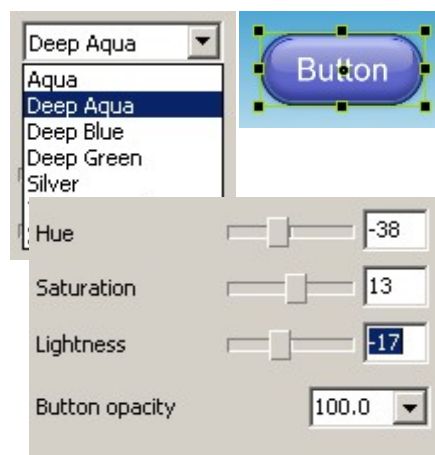
The next adjustment box defines the contents of the text within the **Button** outline. When you insert a button, the default value is to have the word "Button" inside. This text can be changed to any text you like by overtyping the word "Button" with your new text in the text box. If you click on the little icon to the right hand side of the box, a drop down menu appears which enables you to insert a range of different information inside the **Button** outline. The menu is shown here with the list of information available. The information relates to the main image in the O&A window only.



#### 3.3 Button themes

The next parameter box controls the appearance of the **Button** object. The default value is "Aqua", but any of the other themes can be selected. An example is shown of the Deep Aqua theme.

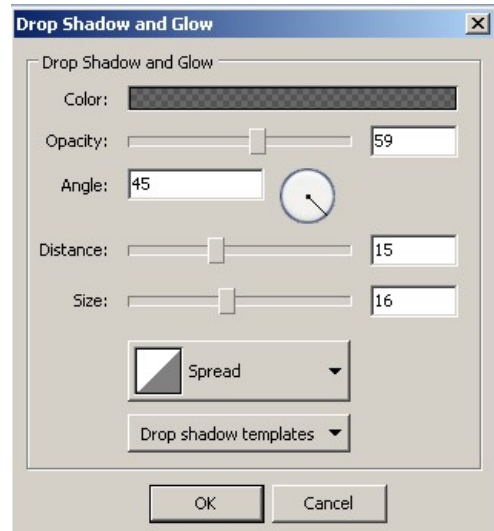
Associated with the actual themes are four controls which



enable the hue, saturation, lightness and opacity values of each of the button themes to be adjusted. Using these controls, a wide variety of **Button** appearances can be achieved.

### 3.4 Button drop shadows

In addition to choosing a theme and modifying its colour/opacity values, it is possible to add a drop shadow to the text within the **Button** object. To do this, check the **Text Shadow** radio box and click on the **Customize** button. The dialog box shown here will open. Using the controls in this box, allows you to vary the appearance of the drop shadow. A small range of shadow templates and additional templates and their method of installation can be obtained from the Wnsoft Forum. A typical list of available templates is shown below.

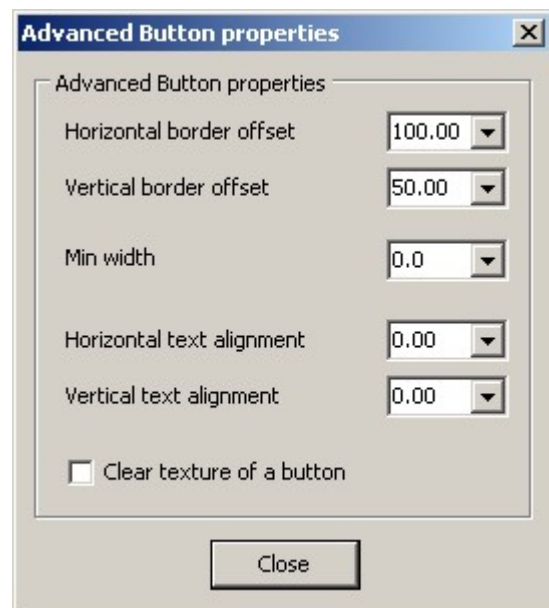




### 3.5 Advanced

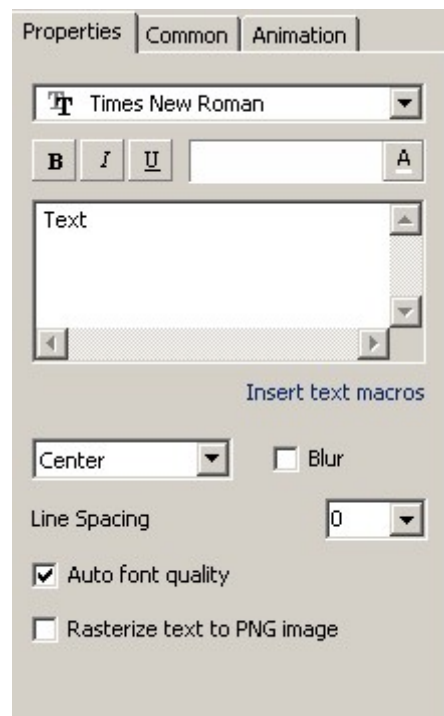
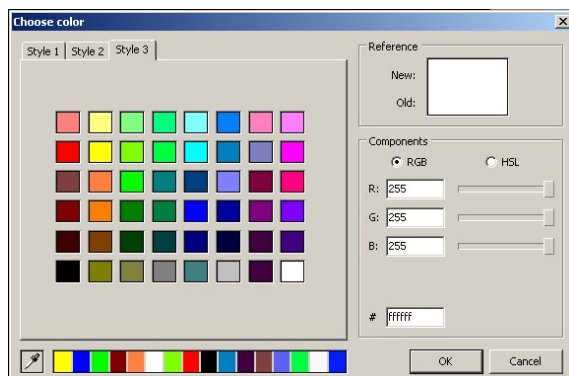
Finally the last control available is the **Advanced** tab shown here. This box has a number of controls which allow the text position within the **Button** outline to be positioned exactly and the minimum width of the outline to be determined.

The **Clear texture of a button** radio box, if ticked, affects the “blur” appearance of some of the button themes. Its effect is not very significant for some of the theme appearances.



## 4. TEXT TAB

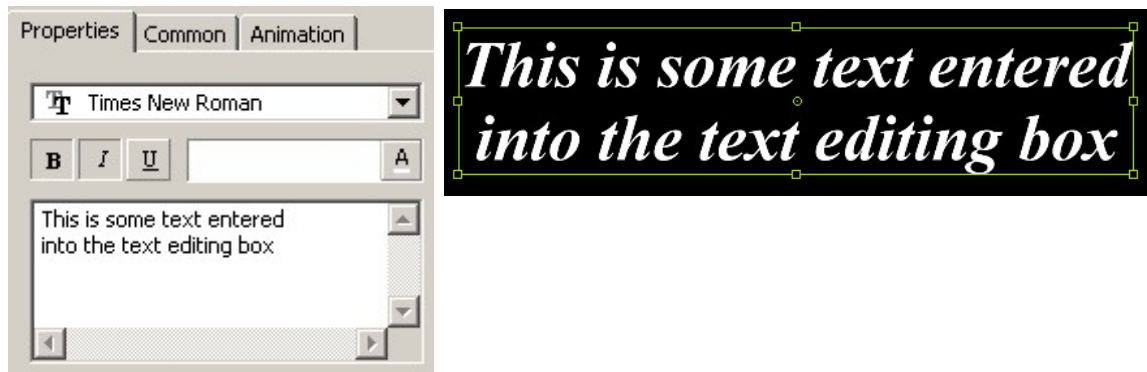
The **Text** properties tab has a number of adjustments which affect the appearance of inserted text. When you click on the **Add Text** button at the top left hand “ side of the O&A window, a box is inserted into the centre of the window with the word “Text” inserted in the default font of “Times New Roman”. The screen shot here shows the resulting appearance of the **Properties** tab. Now using the first two controls, you can alter the font type and formatting of this text. Clicking on the **A** icon, reveals a colour picker box as shown below from which you can select your desired font colour.



The next box in the **Properties** tab is the text insertion and editing window. The use of this needs some detailed explanation as follows :

- There is no font size control. Thus when you type into the text editing window, the box in which the text is placed will increase in size to accommodate the text typed in.
- Once you have entered your text, the text box can be altered in size using its sizing handles.
- There is no line wrap facility in the editing box and if you need a new line, then you must press the **Return** key.

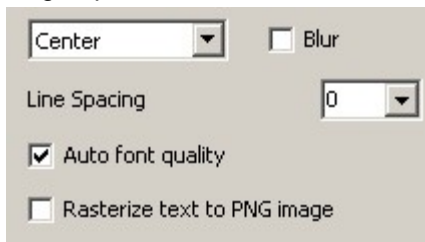
Here is an example of some entered text and the resultant text box.



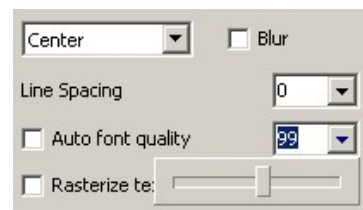
Notice the small blue text just under the text editing box “insert text macros”. If you click on this text, the following dialog box will appear : This enables you to insert the appropriate information below the inserted text relating to the main image in the O&A window. The inserted information is the same as is available for insertion into a **Button** object.



The final group of controls are shown below.



The “centre” box controls the justification of the text in the box. The “blur” control provides a small amount of blur to soften the text outlines. The “line spacing” allows you to insert different line spacing. The “auto font quality” provides a standard “best” appearance for the text. If you remove the check mark in this box, the tab appearance changes as follows and the slider control the quality of the text appearance. A low figure equates to quality text.



adjusts low

## APPENDIX D - NOTES ON ASPECT RATIO

Here are some notes on aspect ratio issues which you may have to consider when making and showing your slide shows.

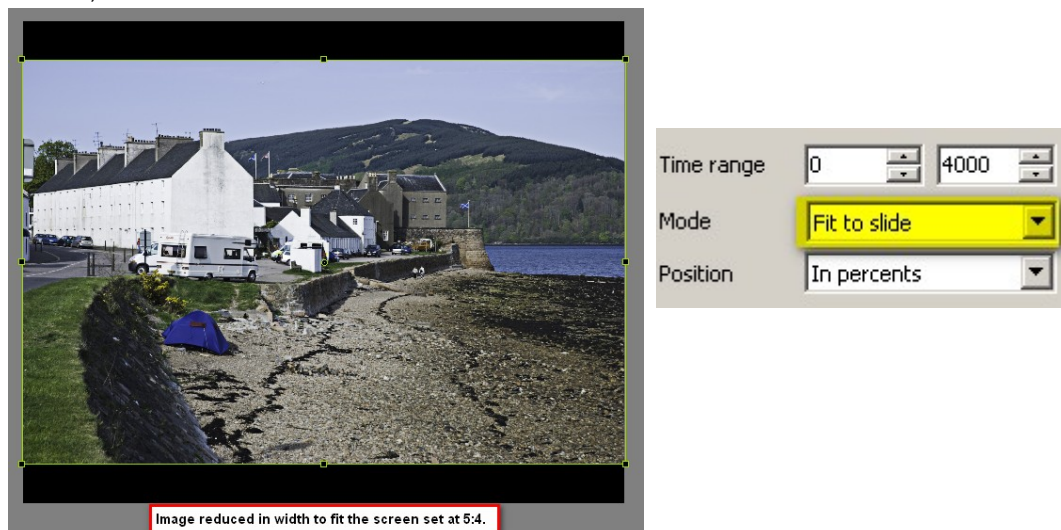
You have taken a number of photographs with your new digital camera. You edit them with your favourite photo editor into a form suitable for use in PTE and you create a slide show with them. Now you can look at the show on your monitor, perhaps burn a DVD disk to show to your friends on your DVD player or send them a copy so that they can look at the show on their monitor. Perhaps you are also a member of a photographic club and you take your masterpiece to be projected via a digital projector to receive comments from your peers. In all these activities you will have to deal with the question of aspect ratio.

So what is the issue? Well consider the following table which gives parameters for some typical equipment.

Equipment	Resolution	Aspect Ratio
10 M pixel digital camera	3872 x 2592	3:2
19 inch monitor	1280 x 1024	5:4
17 inch monitor	1280 x 960	4:3
Digital projector	1024 x 768	4:3

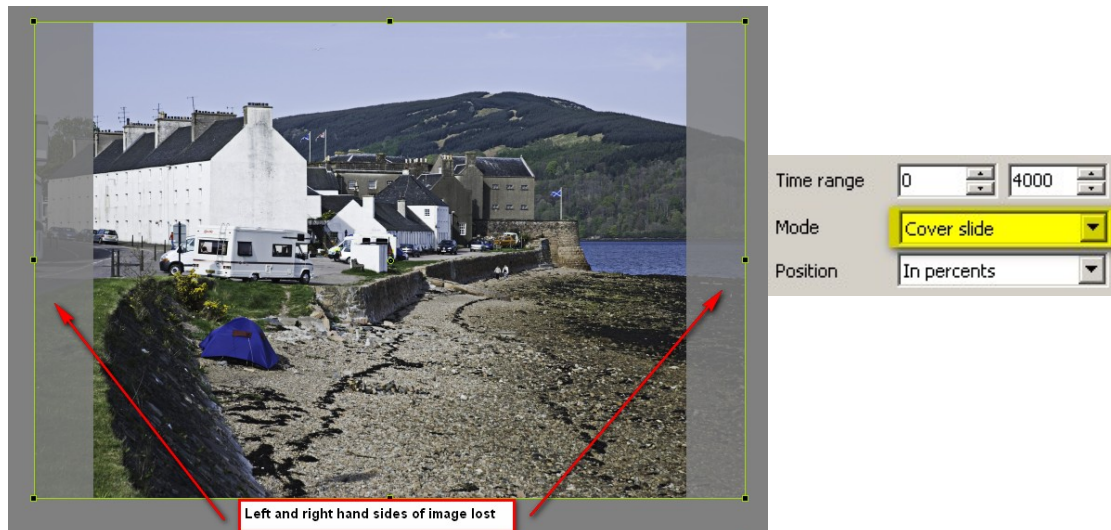
When you edit an image in your photo editor, you need to keep the image aspect ratio unchanged so that you do not cause any distortion. This is why there is usually a check box marked “constrain proportions” in the image adjustment control. So you either reduce the image to suit PTE and keep the aspect ratio unchanged, or you crop the image and used this crop to change the aspect ratio. For example, assume your monitor is the 19 inch, 5:4 aspect ratio monitor in the table above and your camera produces a 3:2 aspect ratio image. You could crop your image to 1280 x 1024 and thus it would fit exactly on your monitor.

However you may not want to lose any of your original image. Thus you resize in your photo editor to 1530 x 1024 (i.e. an aspect ratio of 3:2) and use this in PTE with the default setting in the **Objects and Animation** window, **Common** tab of “fit to slide” as shown below.



In this mode, the image will be fully used, but, when shown on a 5:4 monitor, will have a black band above and below the image. Also when projected on a digital projector with an aspect ratio of 4:3, similar black bands will appear and the image will look “squashed”.

An alternative approach is to resize the image as before to 1530 x 1023 (3:2) and then in PTE, use the “cover slide” option in the )&A window **Common** tab. This will result in part of the left and right hand sides of the image being lost but the screen will be filled as shown below.



If you are going to project your image using a digital projector, you can use the facility in PTE where you can change the aspect ratio of the notional screen, to see what the resultant image would look like when projected. Assume the same conditions as above, that is :

- 1280 x 1024 monitor
- 1530 x 1024 image
- **PTE Project Options, Screen tab set to 4:3**



The result of this is shown below with small black bands at the top and bottom of the screen.

So as you can see you have a number of options when deciding what to do about the aspect ratio of your images. Leave them unchanged and accept that they will not fill your monitor or projector screen,

crop the image to fit the display it is going to be viewed on, or use the **Cover Screen** facility in PTE to ensure that an unchanged aspect ratio image will fill the screen.

## APPENDIX E– GLOSSARY OF TERMS

**AVI Audio-Video Interleaved**, known by its acronym **AVI**, is a multimedia container format introduced by Microsoft in November 1992 as part of its Video for Windows technology. AVI files can contain both audio and video data in a standard container that allows synchronous audio-with-video playback. Like DVDs, AVI files support multiple streaming audio and video, although these features are seldom used. Most AVI files also use the file format extensions developed by the Matrox OpenDML group in February 1996. These files are supported by Microsoft, and are unofficially called "AVI 2.0".

**1080p** is the shorthand name for a category of display resolutions. The number *1080* represents 1,080 lines of vertical resolution, while the letter *p* stands for progressive scan (*meaning the image is not interlaced*). 1080p is considered an HDTV video mode. The term usually assumes a widescreen aspect ratio of 16:9, implying a horizontal resolution of 1920 pixels. This creates a frame resolution of 1920×1080, or exactly 2,073,600 pixels. The frame rate in hertz can be either implied by the context or specified after the letter *p* (*such as 1080p30, meaning 30 frames per second*).

1080p is sometimes referred to in marketing materials as "Full High-Definition". Although 2K/4K digital cinema technology is commercially available, and ultra-high definition video is in the research phase, 1080p and 1080i are currently the highest-resolution formats widely used for broadcasting and consumer distribution of video content.

**Animation** is the rapid display of a sequence of images of 2-D artwork or model positions in order to create an illusion of movement. It is an optical illusion of motion due to the phenomenon of persistence of vision. This could be anything from a flip book to a motion picture film.

**Antialiasing** In digital signal processing, **anti-aliasing** is the technique of minimizing the distortion artifacts known as aliasing when representing a high-resolution signal at a lower resolution. Anti-aliasing is used in digital photography, computer graphics, digital audio, and many other domains.

**Aspect Ratio** The **aspect ratio** of a two-dimensional shape is the ratio of its longer dimension to its shorter dimension. It is also applied to two characteristic dimensions of a three-dimensional shape, especially for the longest and shortest 'axes' or for symmetrical objects (*e.g. rods*) that are described by just two measures (*e.g. length and diameter*). In such cases, the aspect ratio may evaluate to a value less than one (*e.g. consider very short and very long rods*).

**Background** In PTE, the background can be simply the black unlit portion of the computer monitor or television or it can be a file such as a jpg or bmp or even a mosaic or gradient.

**Backup in Zip** PTE creates a zip file containing all necessary files to create the executable slideshow. This includes the slides, the PTE code which defines position, timings, opacity, music and other pertinent information. This file is automatically created when you click on this choice from the main dropdown file menu.

**Bitrate, Audio** In telecommunications and computing, **bitrate** (sometimes written **bit rate**, **data rate** or as a variable  $R$  or  $f_b$ ) is the number of bits that are conveyed or processed per unit of time. Bit rate is synonymous to **data rate** and digital bandwidth. Typically for PTE this will correspond to an MPEG 1 audio bitrate.

**Bitrate, Video** As with audio, the video bitrate is the number of bits processed per unit of time and this is usually given in bits per second (*bps*).

**Blur** The "Blur" feature applies a very small radius gaussian blur to the object in PTE when the checkbox is checked. This helps with minimizing the "flicker" of small objects as they are being zoomed in or out or in pans across the screen. Very sharp objects show aliasing as they are sized and blurring them slightly is a valid way of improving perceived image quality during animation.

**BMP** or **.DIB** (*device-independent bitmap*) is a bitmapped graphics format used internally by the Microsoft Windows and OS/2 graphics subsystem (*GDI*), and used commonly as a simple graphics file format on those platforms.

Images are generally stored with a color depth of 2 (*1-bit*), 16 (*4-bit*), 256 (*8-bit*), 65,536 (*16-bit*), or 16.7 million (*24-bit*) colors (*the bits represent the bits per pixel*). 8-bit images can also be greyscale instead of indexed color. An alpha channel (*for transparency*) may be stored in a separate file where it is similar to a greyscale image. A 32-bit version with integrated alpha channel has been introduced with Windows XP and is used within its logon and theme system. It has yet to gain wide support in image editing software but has been supported in Adobe Photoshop since version 7 and Macromedia Flash since version MX 2004.

**Burn DVD** To burn a DVD means to insert the blank disc in a hardware DVD writer and send the files from a DVD authoring software to it where they are then written to a format understood by DVD players.

**Button** A button in PTE is an object which can be clicked on by a computer pointing device (*mouse*) and which then executes a code or command embedded in the object. Buttons may be used to exit a program, jump to a slide, display attributes, execute another file, etc.

**CD** A **Compact Disc** or **CD** is an optical disc used to store digital data, originally developed for storing digital audio. The CD, available on the market since late 1982, remains the standard playback carrier medium for commercial audio recordings as of 2007.

**Center** The "center" in PicturesToExe is a point on an image or object representing the center axis of the visible or invisible rectangle describing the dimensions in pixels of the file. The center is seen inside the green bounding rectangle at the geographic center point or halfway between the vertical and horizontal boundaries. This center may be moved by holding down the computer keyboard "Shift" key, left clicking the mouse cursor on the tiny green circle then holding down the mouse button and "dragging" the dot to any desired location. This new location then becomes the rotation axis for any rotational motion.

**Classic View** The "classic" view in PTE is the view as seen in earlier version of PicturesToExe prior to version 5.0 - hence the term "classic". This view is in tabular fashion like the "tree view" in Windows.

**Comments** in PTE can be any text appearing on the screen during the slideshow. They may be values extracted from the EXIF header file of a jpg image or words the user enters.

**Create Slideshow As** allows the user to designate the file name. This can be any Windows-legal filename with the .exe (*executable*) extension.

**Create Slideshow** is the default with the name of the PTE file having a PTE file extension replaced with the .exe extension. This creates the self-running executable file.

**Directory Tree** The directory tree is the file structure used by Windows showing folders, sub-folders and files. The name comes from the general observation of an upside down tree trunk with branches and leaves. Another name for directory is folder.

**Drive Designator** A drive designator is the name assigned by Windows or by the user to the storage devices attached to the computer. These can be hard disks, floppy disk drives, CD drives, DVD drives, various types of compact flash readers, tape drives, etc. The main default hard drive is always designated "C:" and the first floppy disk drive (*if there is one*) is always "A:"

**Drop Shadow** In PTE a drop shadow is a shadow outline of a rectangular image or a transparent background object. When a drop-shadow is created for a transparent background PNG file, etc., the shadow assumes the shape of the object and ignores the transparent background. This is a very powerful feature in PTE. The drop-shadow is user selectable and adjustable for opacity, spread, position, color, etc. Drop shadows can be made for buttons, screens (*images or slides*), PNG objects, etc.

**DVD** (*also known as "Digital Versatile Disc" or "Digital Video Disc"*) is a popular optical disc storage media format used for data storage. Primary uses are for movies, software, and data backup purposes, DVDs are of the same form factor as compact discs (CDs), but allow for 8 times the data storage capacity (*single-layer, single-sided*).

All read-only DVD discs, regardless of type, are *DVD-ROM* discs. This includes replicated (*factory pressed*), recorded (*burned*), video, audio, and data DVDs. A DVD with properly formatted and structured video content is a DVD-Video disc. DVDs with properly formatted and structured audio content are DVD-Audio discs. Everything else, (*including other types of DVD discs with video content*) is referred to as a *DVD-Data* disc. Consumers use the term "DVD-ROM" to refer to pressed data discs only, but that is incorrect usage; moreover, the term DVD is also applied generically in describing newer video disc formats, Blu-ray Disc and HD DVD.

**DVD-Video** A video or movie burned or "encoded" on DVD media and playable on a Windows or Macintosh computer or on a commercial DVD player and viewed on a monitor or television.



**Effects** In PTE, effects may be transitions between slides, opacities, pans, zooms, scrolls, rotates or other animation or changes from the normal slide image.

**Executable File** Executable files are programs which run when the user types their name and pressed the Enter key on the keyboard or clicks on the file with the mouse cursor over the filename or shortcut icon. Executable slideshow files, in the relevant sense, are totally self-contained files which contain images, music, controls and commands, etc. They may be totally auto running or may be interactive with the user. Exe files make the finest quality computer slideshow presentations and are very compact in terms of file-size being only slightly larger the combined image sizes.

**Exif Exchangeable image file format** (*official abbreviation Exif, not EXIF*) is a specification for the image file format used by digital cameras. It was created by the Japan Electronic Industries Development Association (*JEIDA*). The specification uses the existing JPEG, TIFF Rev. 6.0, and RIFF WAVE file formats, with the addition of specific metadata tags. It is not supported in JPEG 2000, PNG, or GIF.

**Frame** A frame in the relevant sense may have two meanings. First it can be a single image in a series of images comprising a moving pictures file, or it can be a PTE frame which is a construct of rectangular file format which can be used for multiple purposes in PTE. It can be an anchor or "parent" for child objects, it can be a boundary to encompass objects visually to make them children and share inheritance of properties such as rotation, zoom, pan, etc.

**Gradient** A gradient in PTE is a screen which changes color gradually across either the horizontal or vertical aspect of the screen. The colors may be user chosen and the "gradient" will smoothly transcend from one to the other. Gradients make great backgrounds for objects and have a very rich and smoothing effect.

**Hardware Acceleration** In computing, hardware acceleration is the use of hardware to perform some function faster than is possible in software running on the normal (*general purpose*) CPU. Examples of hardware acceleration include blitting acceleration functionality in graphics processing units (*GPUs*) and instructions for complex operations in CPUs.

Normally, processors are sequential, and instructions are executed one by one. Various techniques are used to improve performance; hardware acceleration is one of them. The main difference between hardware and software is concurrency, allowing hardware to be much faster than software. Hardware accelerators are designed for computationally intensive software code. Depending upon granularity, hardware acceleration can vary from a small functional unit to a large functional block like motion estimation in MPEG2.

The hardware that performs the acceleration, when in a separate unit from the CPU, is referred to as a **hardware accelerator**, or often more specifically as graphics accelerator or floating-point accelerator, etc. Those terms, however, are older and have been replaced with less descriptive terms like video card or graphics card.

**HD-1080** is a high definition television standard which has 1080 vertical lines and 1920 horizontal pixels making the resolution about two megapixels. The 1080 file may be either interlaced or progressive.

**Hold Points** In PTE at the far right hand side of the bottom of the screen is a small radio box for which the default setting is "unchecked". This is a feature which controls what happens to the subsequent slide positions when you insert a slide into the **Slide List** window. If the box is unchecked, then all slides following the position at which you inserted the new slide, will be moved along the timeline to make room for the new slide. The amount by which they will be moved is equal to the default time setting for the inserted slide. If you tick the **Hold Points** box, then the new slide will be inserted without the subsequent slides moving.

**Horizontal View** The horizontal view in PTE shows the slides in rows across the screen. The number of slides is user adjustable. There is also a vertical view and a classic view.

**HSL** The **HSL** color space, also called **HLS** or **HSI**, stands for Hue, Saturation, Lightness (*also Luminance or Luminosity*) / Intensity. While HSV (*Hue, Saturation, Value*) can be viewed graphically as a color cone or hexcone, HSL can be drawn as a double cone or double hexcone as well as a sphere. Both systems are non-linear deformations of the RGB color cube.

The two apexes of the HSL double hexcone correspond to black and white. The angular parameter of the HSL double hexcone corresponds to hue, distance from the axis corresponds to saturation, and distance along the black-white axis corresponds to lightness.

HSL does not define colors exactly because, like RGB, it is not an absolute color space. Since the color of RGB depends on the exact shade of red, blue and green ("*primaries*") used, so HSL, which is a simple transformation of RGB, also depends on the primaries. Strictly speaking, it is not a color space but a color model. HSL can become an exact way to choose color when it is tied to a particular RGB color space, such as sRGB, perhaps specified with an RGB ICC profile. Another way to think about it is that each distinct RGB color space has its own HSL color space to accompany it.

**Icon** An icon (*from Greek εἰκών, eikon, "image"*) is an image, picture, or representation; it is a sign or likeness that stands for an object by signifying or representing it, or by analogy, as in semiotics. In computers an icon is a symbol on the monitor used to signify a command, file or record. By extension, **icon** is also used, particularly in modern popular culture, in the general sense of symbol.

**JPG** In computing, **JPEG** (*pronounced JAY-peg*); is a commonly used method of compression for photographic images. The name JPEG stands for Joint Photographic Experts Group, the name of the committee that created the standard. The group was organized in 1986, issuing a standard in 1992 which was approved in 1994 as ISO 10918-1. JPEG should not be confused with MPEG (*Moving Picture Experts Group*) which produces compression schemes for video.

**Keyboard Shortcut** A keyboard shortcut is a way of sometimes quickly performing a function using the keyboard rather than clicking around with the mouse. For example, to move an object up or down in the objects list one can click on the object to select it, then right click the mouse and choose to move the object to the top, bottom, up one or down one position. But many times it's much easier to just use the keyboard shortcut of holding down the CTRL key and pressing the PgUp or PgDn key.

**Keyframe** The term keyframe comes from the video world. It's one frame of the whole comprising the movie where the user elects to have some particular change occur. In PTE the keyframe is called keypoint.

**Keypoint** In PTE the keypoint is a place on the timeline indicated by a small icon which may be inserted by the user and moved or deleted as desired. This "place" represents a particular time either considered from the start of the individual slide or "frame" or from the perspective of the beginning of the slideshow. Keypoints are a very powerful feature and differ a bit from the "keyframe" concept in that they not only represent the "frame" where something happens, but also the time on that still frame. Of course we must realize that the this "point" where we introduce some change (*pan, zoom, rotate, scroll, change in opacity, etc.*) will eventually be made into a "frame" by PTE whenever there is motion. But unlike a video or movie, with an executable show if there is no movement, the individual frame can be displayed for an extended period without having it made into multiple frames. This makes the executable concept a much more compact file than a movie file where even if the subject remains the same for an extended period, there are still multiple "frames" (*as many as 30 per second or more*).

**Linear** The term linear in PTE refers to motion. A linear motion starts at a given rate and continues at that rate until it ceases. If one were to look at a graph, linear would be a straight line as opposed to non-linear, which indicates change in speed.

**Loop** A loop in PTE means that a single slide or slideshow repeats until intervention by the user. Loop can refer to the entire show or to a single slide.

**Lossless Compression** **Lossless data compression** is a class of data compression algorithms that allows the exact original data to be reconstructed from the compressed data. This can be contrasted to lossy data compression, which does not allow the exact original data to be reconstructed from the compressed data.

Lossless data compression is used in many applications. For example, it is used in the popular ZIP file format and in the Unix tool gzip. It is also often used as a component within lossy data compression technologies.

Lossless compression is used when it is important that the original and the decompressed data be identical, or when no assumption can be made on whether certain deviation is uncritical. Typical examples are executable programs and source code. Some image file formats, like PNG or GIF, use only lossless compression, while others like TIFF and MNG may use either lossless or lossy methods.

**Menu** In PTE a menu is any screen which offers more than one choice. This could be a drop-down type where when the user clicks on a button the menu of choices drops down

revealing a number of options or it could be a pop-up type where it may not appear right under the cursor. It can also be a horizontal or vertical bar visible at all times offering a variety of optional choices for the user.

**MID** .mid is the extension for a midi file. See midi below:

**MIDI** (*Musical Instrument Digital Interface*) is an industry-standard electronic communications protocol that enables electronic musical instruments, computers and other equipment to communicate, control and synchronize with each other in real time. MIDI does not transmit an audio signal or media - it simply transmits digital data "event messages" such as the pitch and intensity of musical notes to play, control signals for parameters such as volume, vibrato and panning, cues and clock signals to set the tempo. As an electronic protocol, it is notable for its success, both in its widespread adoption throughout the industry, and in remaining essentially unchanged in the face of technological developments since its introduction in 1983.

MIDI use is cautioned as a staple for your slideshows because many computers have defaulted to not play midi files.

**Mosaic** A mosaic is a larger image made of numerous smaller images. In PTE this is used to refer to one of the standard transitions.

**MPEG I** defines a group of Audio and Video (AV) coding and compression standards agreed upon by MPEG (*Moving Picture Experts Group*). MPEG-1 video is used by the Video CD (VCD) format and less commonly by the DVD-Video format. The quality at standard VCD resolution and bitrate is near the quality and performance of a VHS tape. MPEG-1, Audio Layer 3 is the popular audio format known as MP3. As cheaper and more powerful consumer decoding hardware became available, more advanced formats such as MPEG-2 and MPEG-4 were developed. These newer formats are more complex and require more powerful hardware, but the formats also achieve greater coding efficiency, i.e., quality per bitrate

**MPEG II** MPEG-2 is widely used around the world to specify the format of the digital television signals that are broadcast by terrestrial (*over-the-air*), cable, and direct broadcast satellite TV systems. It also specifies the format of movies and other programs that are distributed on DVD and similar disks. The standard allows text and other data, e.g., a program guide for TV viewers, to be added to the video and audio data streams. TV stations, TV receivers, DVD players, and other equipment are all designed to this standard. MPEG-2 was the second of several standards developed by the Moving Pictures Expert Group (*MPEG*) and is an international standard (*ISO/IEC 13818*). Parts 1 and 2 of MPEG-2 were developed in a joint collaborative team with ITU-T, and they have a respective catalog number in the ITU-T Recommendation Series.

**Navigation Bar** The navigation bar in PTE is composed of a user-selectable number of icons which when clicked perform different actions including First slide, Previous slide, Next slide, Pause on this slide, Print this slide, Help and Exit the slideshow. The "Pause" defaults to the off position. When the Pause is activated the icon changes from two upright parallel lines to an arrow pointing to the right. When this arrow is present, the

show becomes completely manual and will not automatically advance regardless of the timing on a slide.

The navigation bar can be made to only appear when the mouse is moved, appear for a user specified period of time then fade away or not be visible at all. Even when the navigation bar is not visible it's possible to program PTE to pause with the space bar or change slides with keyboard PgUp and PgDn, etc.

**Non-Linear** Non-linear in PTE refers to motion. Non-linear essentially means that the motion is not constant. There are three default non-linear modes which are "Smooth, Accelerate and Decelerate". Smooth begins and ends slowly and is linear in the middle. Accelerate starts slowly and increases in speed throughout the motion. Decelerate begins normally and slows at the end of the curve. In addition to Linear and Non-Linear defaults, the user can completely customize the curve and create their own linearity templates.

**NTSC** is the analog television system in use in the United States, Canada, Japan, South Korea, the Philippines, Mexico, and some other countries, mostly in the Americas (see *map in PTE document*). It is named for the **National Television System Committee**, the U.S. standardization body that adopted it.

The NTSC format is used with the **M** format which consists of 29.97 interlaced frames of video per second. Each frame consists of 486 visible scanlines out of a total of 525 (*the rest are used for sync, vertical retrace, and other data such as captioning*). PAL uses 625 lines, and so has a higher picture resolution. The NTSC system interlaces its scanlines, with visible scanlines 21-263 drawn in the first field, and visible scanlines 283-525 drawn in the second field, yielding a nearly flicker-free image at its approximately 59.94 hertz (*nominally 60 Hz/100.1%*) refresh frequency. The refresh compares favorably to the 50 Hz refresh rate of the PAL and SECAM video formats used in Europe where 50 Hz alternating current is the standard; flicker was more likely to be noticed when using these standards until modern PAL TV sets began using 100 Hz refresh rate to eliminate flicker. This produces a far more stable picture than native NTSC and PAL had, effectively displaying each frame twice. This did, at first, cause some motion problems, so it was not universally adopted until a few years ago. Interlacing the picture does complicate editing video, but this is true of all interlaced video formats, including PAL and SECAM.

The NTSC refresh frequency was originally exactly 60 Hz in the black and white system, chosen because it matched the nominal 60 Hz frequency of alternating current power used in the United States. Matching the screen refresh rate to the power source avoided wave interference that produces rolling bars on the screen. Synchronization of the refresh rate to the power cycle also helped kinescope cameras record early live television broadcasts, as it was very simple to synchronize a film camera to capture one frame of video on each film frame by using the alternating current frequency as a shutter trigger.

The figure of 525 lines was chosen as a consequence of the limitations of the vacuum-tube-based technologies of the day. In early TV systems, a master voltage-controlled oscillator was run at twice the horizontal line frequency, and this frequency was divided down by the number of lines *used (in this case 525)* to give the field frequency (*60 Hz in this case*). This frequency was then compared with the 60 Hz power-line frequency and any discrepancy corrected by adjusting the frequency of the master oscillator. The only

practical method of frequency division available at the time was the use of multivibrators, which could only divide by small numbers. For interlaced scanning an odd number of lines per frame was required, and so a chain of multivibrators was needed, each of which had to divide by a small, odd number. (*Note that an odd number is never divisible by any even number*). The closest practical sequence to 500 was  $3 \times 5 \times 5 \times 7 = 525$ . Similarly, the British 405-line system used  $3 \times 9 \times 9 \times 5$ . Although other values were theoretically possible, all of them involved divisions by unacceptably large numbers like 13 or 17, which produced reliability problems. Modern systems derive all their frequencies from the color subcarrier frequency. In the color system the refresh frequency was shifted slightly downward to 59.94 Hz to eliminate stationary dot patterns in the color carrier.

**Object** An object in PTE is any image in the Objects List. This can be a complete slide image such as a jpg or it can be a PNG file with a transparent background so that the "object" looks as if it floats on the screen. Objects always each have their own "layers" in PTE and because of this those with transparent backgrounds can be made to pass in front of or behind other objects depending on their respective layers. There is no practical limit to the number of objects in PTE but for a single slide if the files sizes of each object is too large it can overwhelm the video card. Slideshows have been made with over 500 individual objects in simultaneous motion, but these objects were tiny files. For practical purposes limits of around 20 objects is suggested.

**Offset** The percentage from the center for the advanced hour hand transition. The default is 20%. To see the effects it's best to experiment.

**OGG** is an open standard for a free container format for digital multimedia, unrestricted by software patents and designed for efficient streaming and manipulation. Ogg is maintained by the Xiph.Org Foundation.

The name "Ogg" refers to the file format which can multiplex a number of separate independent free and open source codecs for audio, video and text (*such as subtitles*). Files ending in the .ogg extension may be of any Ogg media file type. The term "ogg" is often used to refer to audio file format Ogg Vorbis, that is, Vorbis-encoded audio in the Ogg container. Other prominent Xiph codecs that are often encapsulated in Ogg are the video codec Theora, and the human speech audio compression format Speex. Because the format is free, Ogg's various codecs have been incorporated into a number of different free and proprietary media players, both commercial and non-commercial, as well as portable media players from different manufacturers.

**Opacity** refers to the degree of transparency from opaque to invisible which may be user selected for any PTE object.

**PAL** is short for **Phase Alternating Line**, is a color encoding system used in broadcast television systems in large parts of the world. Other common analog television systems are SECAM and NTSC.

#### **History:**

In the 1950s, when the Western European countries were planning to establish color television, they were faced with the problem that the already existing American NTSC standard wouldn't fit the 50 Hz AC frequency of the European power grids. In addition to

that NTSC demonstrated several weaknesses, including color tone shifting under less-than-ideal transmission conditions. That's why the development of the SECAM and PAL standards began. The goal was to provide a color TV standard with a picture frequency of 50 fields per second (*50 Hertz*), and sporting a better color picture than NTSC.

PAL was developed by Walter Bruch at Telefunken in Germany. The format was first unveiled in 1963, with the first broadcasts beginning in the United Kingdom and Germany in 1967.

Telefunken was later bought by the French electronics manufacturer Thomson. Thomson also bought the *Compagnie Générale de Télévision* where Henri de France developed SECAM, historically the first European color television standard. Thomson nowadays also co-owns the RCA brand for consumer electronics products, which created the NTSC color TV standard before Thomson became involved.

The term "PAL" is often used informally to refer to a 625-line/50 Hz (*576i, principally European*) television system, and to differentiate from a 525-line/60 Hz (*480i, principally North American/Central American/Japanese*) "NTSC" system. Accordingly, DVDs are labeled as either "PAL" or "NTSC" (*referring informally to the line count and frame rate*) even though technically the European disks do not have PAL composite color. NTSC, by contrast, does define the video line and frame format.

#### **Technical:**

The basics of PAL and the NTSC system are very similar; a quadrature amplitude modulated subcarrier carrying the chrominance information is added to the luminance video signal to form a composite video baseband signal (CVBS\*). The frequency of this subcarrier is typically 4433618.75 Hz (*approximately 4.43 MHz*) for PAL, compared to approximately 3.58 MHz for NTSC. The SECAM system, on the other hand, uses a frequency modulation scheme on its color subcarrier. The name "Phase Alternating Line" describes the way that the phase of part of the color information on the video signal is reversed with each line, which automatically corrects phase errors in the transmission of the signal by canceling them out. (Lines where the color phase is reversed compared to NTSC are often called PAL or phase-alternation lines, which justifies one of the expansions of the PAL acronym, while the other lines are called NTSC lines. Early PAL receivers relied on the imperfections of the human eye to do that canceling; however this resulted in a comb-like effect on larger phase errors. Thus, most receivers now use a chrominance delay line, which stores the received color information on each line of display; an average of the color information from the previous line and the current line is then used to drive the picture tube. The effect is that phase errors result in saturation changes, which are less objectionable than the equivalent hue changes of NTSC. A minor drawback is that the vertical color resolution is poorer than the NTSC system's, but since the human eye also has a color resolution that is much lower than its brightness resolution, this effect is not visible. In any case, NTSC, PAL and SECAM all have chrominance bandwidth (horizontal color detail) reduced greatly compared to the luminance signal..

**Pan** To pan means to display an image in motion so that the appearance is such that the eye appears to scan across or up or down. Panning is a good way to display panoramic images in your slideshows.

**Pan/Zoom/Rotate Values** PZR values are the numbers that are found in the blocks on the Animations tab of the Objects and Animations screen in PTE. These numbers represent the difference from the defaults when the image is loaded. Pan numbers begin with zero for horizontal and vertical and zoom begins with 100 as default. Values are also ascribed to rotate center and opacity. Opacity defaults to 100% while center and rotate begin with zero. Any deviation from these numbers mean that the image will either begin at other than the default position or if keypoints have been set before the numbers are changed, the image will either zoom, rotate, pan, scroll (for text) or change opacity. These numbers will automatically change if the green bounding rectangle is used to size or move the image.

**Parent/Child Relationship** The parent/child relationship is rather unique in the world of presentation slideshow software to PTE at this time. Any object can be made the child or parent of any other object. A child inherits pan, zoom, and rotate values from the parent, but can also have their own values. This feature plus the off-center rotation feature makes it possible to do very complex animations including warping the Z axis to simulate three dimensional appearances, cause objects to circle the screen while rotating on their own axis, etc. This extremely powerful feature sets PTE apart from the rank and file presentation slideshow program.

**PDF *Portable Document Format (PDF)*** is the file format created by Adobe Systems in 1993 for document exchange. PDF is used for representing two-dimensional documents in a device-independent and display resolution-independent fixed-layout document format. Each PDF file encapsulates a complete description of a 2-D document (and, with Acrobat 3-D, embedded 3-D documents) that includes the text, fonts, images, and 2-D vector graphics that compose the document. PDF is an open standard, and is now being prepared for submission as an ISO standard.

**PNG *Portable Network Graphics*** is a bitmapped image format that employs lossless data compression. PNG was created to improve upon and replace the GIF format, as an image-file format not requiring a patent license. PNG is pronounced "*ping*", but can be spoken "P-N-G".

PNG supports palette-based (palettes of 24-bit RGB colors) or greyscale or RGB images. PNG was designed for transferring images on the Internet, not professional graphics, and so does not support other color spaces (*such as CMYK*).

PNG files nearly always use file-extension "PNG" or "png" and are assigned MIME media type "image/png" (*approved October 14, 1996*).

**Pop-Up** A pop-up menu in PTE is a menu, which appears somewhere on the screen when the user clicks on a menu choice or object, linked to the pop-up.

**Preview** The "preview" mode in terms of the main screen or objects and animation screen in PTE is actually a temporary executable file which runs the entire slideshow to the point at which progress in developing the show is presently terminated. The preview mode in Video Builder is a ten-second-default show to give the user an idea of how their slideshow will look when completed.



**Properties** In PTE properties refer to specifics about objects including but not limited to where they are located on the hard disk, whether or not they are the "main" image or objects on that image, whether anti-aliased or not, whether blurred or not, etc. The properties are different for different type objects. Buttons, images, etc., have different properties. See the user guide for more specifics.

**PTE** Short for both PicturesToExe and for the specific file with the extension .pte which contains all the instructions and codes to make the slideshow do what has been programmed.

**Radio Button** Radio buttons are small circles in which the user may click and place a "dot". This is a smaller equivalent of a check box.

**Rectangle** A rectangle in PTE is an object provided by the program which can be used for a number of purposes. It is the "solid" counterpart of the "frame". A rectangle can have colors or gradients and can be parents or children of other objects. This is a very nice convenience feature. This term also applies to the Green Bounding Rectangle which surrounds images or objects in the "View" and may be manipulated via the mouse to size, move or rotate the objects or images.

**RGB** The **RGB color model** is an additive model in which red, green, and blue (often used in additive light models) are combined in various ways to reproduce other colors. The name of the model and the abbreviation 'RGB' come from the three primary colors, red, green, and blue and the technological development of cathode ray tubes which could display color instead of a monochrome phosphorescence (*including grey scaling*) such as black and white film and television imaging.

**Rotate** The rotate feature in PTE is very powerful. Objects or images can be rotated either clockwise or counterclockwise by either entering values in the rotate box, up to 360 degrees in either clockwise or counterclockwise direction via a "slider" control or with the green bounding rectangle and the mouse. Any degree or fraction to a thousandth may be entered manually in the rotate box. Coupled with the off-center capability this represents a very powerful combination of features for PTE.

**Run External Application** This refers to the PTE capability of allowing the executable slideshow program to run other executable programs when they are specified by the user. For example, it's possible to run another executable slideshow, a graphics program like IrfanView or Photoshop, a word processor, or any other Windows controlled program then seamlessly return to the program. This features makes it possible for the PTE user to build their own custom menus and even make "invisible" menus to daisy chain multiple programs in succession. This features is unique to PTE among presentation slideshow programs.

**Scale Keypoints** This refers to the feature of PTE which makes is possible to change the time of a slide's timeline then cause the keypoints to spread in linear fashion to fill that new timeline or compress if the new time is less than the original. Without this feature the time remains the same and additional time is allocated with positive time changes. This feature also refers to a similar use for the music timeline.

**Scroll** To scroll generally refers to text. With PTE it's possible to manipulate text just like any other object so that it can actually be dragged completely off the visible screen the caused to scroll upward, down or sideways however the user desires.

**SECAM** also written **SÉCAM** (*Séquentiel couleur à mémoire, French for "Sequential Color with Memory"*), is an analog color television system first used in France. A team led by Henri de France working at Compagnie Française de Télévision (*later bought by Thomson*) invented SECAM. It is, historically, the first European color television standard.

#### **History:**

Work on SECAM began in 1956. The technology was ready by the end of the fifties, but this was too soon for a wide introduction. Initially, a version of SECAM for the French 819-line television standard was devised and tested, but not introduced. Following a pan-European agreement to introduce color TV only in 625 lines, France had to start the conversion by switching over to a 625-line television standard, which happened at the beginning of the 1960s with the introduction of a second network.

The first proposed system was called **SECAM I** in 1961, followed by other studies to improve compatibility and image quality.

These improvements were called **SECAM II** and **SECAM III** with the later being presented at the 1965 CCIR General Assembly in Vienna.

Further improvements were **SECAM III A** followed by **SECAM III B**, the adopted system for general usage in 1967.

Russians were involved in the development of the standard, and even created their own incompatible variant called **NIR** or **SECAM IV**, which was not deployed. The team was working in Moscow's Telecentrum under Professor Chmakov's direction. The **NIR** designation comes from the name of the Nautschnuiu Issledovatelskaya Rabota research institute involved in the studies. Two standards were developed: *Non-linear NIR* in which a process analogous to gamma correction is used and *Linear NIR* or *SECAM IV* that omits this process.

SECAM was inaugurated in France on October 1, 1967, on *la deuxième chaîne (the second channel)*, now called France 2. A group of four men, all dressed in suits, presumably presenters and network officials, were shown standing in a studio. The image was originally black and white and suddenly switched to color; one of the people said something along the lines of "now you can see us as we really are".

The first color television sets cost 5000 Francs. Color TV was not very popular initially; only about 1500 people watched the inaugural program in color. A year later, only 200,000 sets had been sold of an expected million. This pattern was similar to the earlier slow build-up of color television popularity in the USA.

SECAM was later adopted by former French and Belgian colonies, Greece, Eastern European countries, the Soviet Union and Middle Eastern countries. However, with the fall of communism, and following a period when multi-standard TV sets became a commodity, many Eastern European countries decided to switch to PAL.

**Technical:**

Just as the other color standards adopted for broadcast usage over the world, SECAM is a compatible standard, which means that monochrome television receivers predating its introduction are still able to show the programs, although only in black and white. Because of this compatibility requirement, color standards add a second signal to the basic monochrome signal, and this signal carries the color information, called chrominance or C in short, while the black and white information is called the luminance (*Y in short*). Old TV receivers only see the luminance, while color receivers process both signals.

Additionally, for compatibility, it is required to use no more bandwidth than the monochrome signal alone; the color signal has to be somehow inserted into the monochrome signal, without disturbing it. This insertion is possible because the spectrum of the monochrome TV signal is not continuous, hence empty space exists which can be utilized. This lack of continuity results from the discrete nature of the signal, which is divided into frames and lines. Analogue color systems differ by the way in which empty space is used. In all cases, the color signal is inserted at the end of the spectrum of the monochrome signal.

In order to be able to separate the color signal from the monochrome one in the receiver, a fixed frequency sub carrier has to be used, this sub carrier being modulated by the color signal.

The color space is three dimensional by the nature of the human vision, so after subtracting the luminance, which is carried by the base signal, the color sub carrier still has to carry a two dimensional signal. Typically the red (*R*) and the blue (*B*) information are carried because their signal difference with luminance (*R-Y and B-Y*) is stronger than that of green (*G-Y*).

SECAM differs from the other color systems by the way the R-Y and B-Y signals are carried.

First, SECAM uses frequency modulation to encode chrominance information on the sub carrier.

Second, instead of transmitting the red and blue information together, it only sends one of them at a time, and uses the information about the other color from the preceding line. It uses a delay line, an analog memory device, for storing one line of color information. This justifies the "Sequential, With Memory" name.

Because SECAM transmits only one color at a time, it is free of the color artifacts present in NTSC and PAL and resulting from the combined transmission of both signals. This means that the vertical color resolution is halved relative to NTSC. It is however not halved compared to PAL. Although PAL does not eliminate half of vertical color information during encoding, it combines color information from adjacent lines at the decoding stage, in order to compensate for "color sub carrier phase errors" occurring during the transmission of the Amplitude-Modulated color sub carrier. This is normally done using a delay line borrowed from SECAM (*the result is called PAL DL or PAL Delay-Line, sometimes interpreted as DeLuxe*), but can be accomplished "visually" in cheap TV sets (*PAL standard*). Because the FM modulation of SECAM's color sub carrier is

insensitive to phase (*or amplitude*) errors, phase errors do not cause loss of color saturation in SECAM, although they do in PAL. In NTSC, such errors cause color shifts.

The color difference signals in SECAM are actually calculated in the YDbDr color space, which is a scaled version of the YUV color space. This encoding is better suited to the transmission of only one signal at a time.

FM modulation of the color information allows SECAM to be free of the dot crawl problem commonly encountered with the other analog standards and first widely noticed with Laserdiscs. Dot crawl can be removed from PAL and NTSC-encoded signals using a comb filter. Such filters are usually only included in high-end displays. Dot crawl patterns (*animated checkerboard*) are easily visible along vertical lines in DVD menus displayed even by expensive (*eg. plasma*) displays if these displays are connected to a signal source (DVD player) using a composite PAL or NTSC connection rather than, for example, RGB. The idea of reducing the vertical color resolution comes from Henri de France, who observed that color information is approximately identical for two successive lines. Because the color information was designed to be a cheap, backwards compatible addition to the monochrome signal, the color signal has a lower bandwidth than the luminance signal, and hence lower horizontal resolution. Fortunately, the human visual system is similar in design: it perceives changes in luminance at a higher resolution than changes in chrominance, so this asymmetry has minimal visual impact. It was therefore also logical to reduce the vertical color resolution.

DVD and other digital television formats have continued to exploit this visual artifact, sub sampling color both horizontally and vertically. Hence, paradoxically, VHS NTSC videos and especially NTSC Laserdiscs can have a greater vertical color resolution than DVD.

A similar paradox applies to the vertical resolution in television in general: reducing the bandwidth of the video signal will preserve the vertical resolution, even if the image loses sharpness and is smudged in the horizontal direction. Hence, video could be sharper vertically than horizontally. However, because of the interlacing, vertical resolution is effectively not as great as the number of scan lines. Additionally, transmitting an image with too much vertical detail will cause annoying flicker on television screens, as small details will only appear on a single line, and hence be refreshed at half the frequency. Computer-generated text and inserts have to be carefully low-pass filtered to prevent this.

**Slide** In PTE a slide is the main image found on the main screen in the slide list. It is generally a JPG image and also appears as the first default object on the Objects and Animations screen. It "can" be a transparent background PNG or other permitted image format file.

**Slider** A slider is a graphic image which looks much like a slider for volume control, etc., on a stereo system except it's manipulated with the mouse. The slider is used, for example, in the PTE rotate feature to quickly go to 360 degrees positive (*clockwise*) or negative (*counterclockwise*). Though the slider only goes to 360 degrees, any degree may be typed in or created via the green bounding rectangle graphic. Sliders are also used in Video Builder to control the number of thumbnail images in the Horizontal view.

**Status Bar** The bar at the very bottom of a PTE screen which gives the use specifics about the file or object.

**SVCD Super Video CD (*Super Video Compact Disc or SVCD*)** is a format used for storing video on standard compact discs. SVCD falls between Video CD and DVD in terms of technical capability and picture quality.

**Technical:**

SVCD has two-thirds the resolution of DVD, and over 2.7 times the resolution of VCD. One CD-R disc can hold up to 60 minutes of standard quality SVCD-format video. While no specific limit on SVCD video length is mandated by the specification, one must lower the video bitrate, and therefore quality, in order to accommodate very long videos. It is usually difficult to fit much more than 100 minutes of video onto one SVCD without incurring significant quality loss, and many hardware players are unable to play video with an instantaneous bitrate lower than 300 to 600 kilobits per second.

**Video:**

Resolution: PAL/SECAM = 480x576 - NTSC = 480x480 - Aspect Ratio: 4:3 Codec: MPEG-2

**Framerate:**

NTSC: 29.97 or 23.976 frames per second

PAL/SECAM: 25 frames per second

Bitrate: Up to 2.6 Megabits (2,600 kilobits) per second

Rate Control: Constant or variable bitrate

Interlaced video is supported (though not required) for SVCD video, except for any video at 23.976 frames per second, as it must use 3:2 pulldown. Unlike other CD-based video formats such as China Video Disc and Video CD, Super Video CD video is incompatible with the DVD-Video standard due to a conflict in resolution. However, the 480x480/576 resolution is supported by the HD DVD standard.

**Audio:**

Codec: MPEG-1 Audio Layer II

Frequency: 44,100 hertz (44.1 kHz)

Output: Monaural, dual channel, or stereo

Bitrate: Certain bitrates between 32 and 384 kilobits per second, inclusive

Rate Control: Constant bitrate

As with most Compact Disc-based video formats, SVCD audio is incompatible with the DVD-Video standard due to the difference in frequency; DVDs require 48 kHz, whereas SVCDs use 44.1 kHz.

**Synchronize** In PTE, video may be synchronized with audio in the sense that it's possible to precisely control the time of appearance of a particular image or an animation to concur with a specific desired point of a sound file.

**Tabs** Tabs are sub-menus on a major menu such as the Projects Options. These larger menus are divided into sections with headers like one might find in a cookbook. Click on the desired tab at the top of the menu and that section will appear with its own menu choices.

**Template** A PTE template is a file containing all the information about the particular slideshow. It may also be a completed slideshow made in such a way that certain images may be substituted for existing images by naming them with the same file names as existing file names then overwriting the existing files. When this is done the new files with different images assume all the properties including zoom, rotate, opacity, pan, etc., of the originals. This makes it convenient for experienced users to create and share effects.

**Tiled Image** A tiled image is a larger image created from many smaller images and usually these consist of replicated images. So one might think of it as a mosaic but often made of a single image or background color. It's a very efficient way of saving space because the file construct is simply duplicated so that a tiny postage-stamp sized image can be used to fill the screen.

**Timeline** In PTE there are two types of timelines. One for music and one for images. It's a linear representation of time where keypoints are placed to animate images or synchronize music and images. Each individual music selection or object has its own timeline with its own keypoints.

**Title** The title in PTE refers to either what one might write at the top or beginning of a slideshow or the name given to a DVD or AVI movie. Titles can have available fonts, colors, sizes, drop-shadows, etc.

**Transition** A transition is a graphic image seen bridging the time between the appearance of different slides. This could be as simple as a fade-in fade-out, or as complex as a mosaic. There are numerous customizable transitions possible with PTE as well as user created ones via opacity changes.

**Tutorial** Tutorials for PTE are usually provided by users and sometimes by the software authors. They may be in PDF format or in AVI or Flash format as audio-visual.

**TV Safe Zone** Televisions around the world have different aspect ratios than most computer screens so PTE has a user selectable feature which turns on a graphic shading on the computer monitor to indicate the viewable area of the television at the desired aspect ratio. This makes it very easy to avoid placing objects in areas where they won't be seen when the slideshow is made into a DVD in Video Builder.

**VCD Video CD** (*aka VCD, View CD, Compact Disc digital video*) is a standard digital format for storing video on a Compact Disc. VCDs are playable in dedicated VCD players, nearly all personal computers, most modern DVD-Video players, and some video game consoles. The VCD standard was created in 1993 by Sony, Philips, Matsushita, and JVC and is referred to as the White Book standard.

**VCD Technical:**

**Video:**

Codec: MPEG-1

Resolution:

NTSC: 352x240

PAL/SECAM: 352x288  
Aspect Ratio:  
NTSC: 107:80 (0.3% difference from 4:3)  
PAL/SECAM: 4:3  
Framerate:  
NTSC: 29.97 or 23.976 frames per second  
PAL/SECAM: 25 frames per second  
Bitrate: 1,150 kilobits per second  
Rate Control: constant bitrate

Overall picture quality is intended to be comparable to VHS video, though visual artifacts may be noticeable in some cases. Poorly compressed video in VCD tends to be of lower quality than VHS video, but exhibiting block artifacts rather than analog noise.

352 horizontal pixels was chosen because it approximates the resolution of an analog broadcast video signal, assuming a 5 MHz bandwidth. Any more than this would be wasted in the RF modulator, which was the usual means of video input for domestic television receivers at the time.

VCD video is mostly compatible with the DVD-Video standard, except for any video encoded at 23.976 frames per second. DVD-Video requires all MPEG-1 video to be encoded at either 25 or 29.97 frames per second.

**Audio:**

Codec: MPEG-1 Audio Layer II  
Frequency: 44,100 hertz (44.1 kHz)  
Output: Dual channel or stereo  
Bitrate: 224 kilobits per second  
Rate Control: Constant bitrate

As with most CD-based video formats, VCD audio is incompatible with the DVD-Video standard due to the difference in frequency; DVDs require 48 kHz, whereas VCDs use 44.1 kHz.

**Vertical View** The vertical view in PTE is one of three (horizontal, vertical classic) in which the thumbnails are arranged in a column fashion. A "A" icon exists to toggle filenames on and off.

**WAV** or (**WAVE**), short for Waveform audio format, is a Microsoft and IBM audio file format standard for storing audio on PCs. It is a variant of the RIFF bitstream format method for storing data in "chunks", and thus also close to the IFF and the AIFF format used on Amiga and Macintosh computers, respectively. It is the main format used on Windows systems for raw audio.

Both WAVs and AIFFs are compatible with Windows and Macintosh operating systems. The format takes into account some differences of the Intel CPU such as little-endian byte order. The RIFF format acts as a "wrapper" for various audio compression codecs.

Though a WAV file can hold compressed audio, the most common WAV format contains uncompressed audio in the pulse-code modulation (*PCM*) format. PCM audio is the

standard audio file format for CDs at 44,100 samples per second, 16 bits per sample. Since PCM uses an uncompressed, lossless storage method, which keeps all the samples of an audio track, professional users or audio experts may use the WAV format for maximum audio quality. WAV audio can also be edited and manipulated with relative ease using software.

**WMV Windows Media Video** is a compressed video file format for several proprietary codecs developed by Microsoft. The original codec, known as *WMV*, was originally designed for Internet streaming applications, as a competitor to RealVideo. Successful marketing efforts from Microsoft and the implementation of the PlaysForSure certification program have made WMV one of the most popular formats for compressed video. The other codecs, such as *WMV Screen* and *WMV Image*, cater for specialized content. Through standardization from the Society of Motion Picture and Television Engineers (*SMPTE*), WMV has gained adoption for physical-delivery formats such as HD DVD and Blu-ray Disc.

A *WMV file* is in most circumstances encapsulated in the Advanced Systems Format (*ASF*) container format. The file extension *.wmv* typically describes ASF files that use Windows Media Video codecs. The audio codec used in conjunction with Windows Media Video is typically some version of Windows Media Audio, or in rarer cases, the depreciated Sipro ACELP.net audio codec. Microsoft recommends that ASF files containing non-Windows Media codecs use the generic *.ASF* file extension.

Although WMV is generally packed into the ASF container format, it can also be put into the AVI or Matroska container format. The resulting files will have the *.avi*, or *.mkv* file extensions, respectively. WMV can be stored in an AVI file when using the WMV 9 Video Compression Manager (VCM) codec implementation. Another common way to store WMV in an AVI file is to use the VirtualDub encoder.

This container can optionally support digital rights management using a combination of elliptic curve cryptography key exchange, DES block cipher, a custom block cipher, RC4 stream cipher and the SHA-1 hashing function.

**Windows Media Video Image (*WMV Image*) is a video slideshow codec. The codec works by applying timing, panning and transition effects to a series of images during playback. The codec achieves a higher compression ratio and image quality than WMV 9 for still images as files encoded with WMV Image store static images rather than full-motion video.**

**Zip** The **ZIP** file format is a popular data compression and archival format. A ZIP file contains one or more files that have been compressed, to reduce their file size, or stored as-is.

The format was originally designed by Phil Katz for PKZIP, however, many software utilities other than PKZIP itself are now available to create, modify, or open (*unzip*, *decompress*) ZIP files, notably WinZip, BOMArchiveHelper, KGB Archiver, PicoZip, Info-ZIP, WinRAR, IZArc, 7-Zip, ALZip, TUGZip, Universal Extractor and Zip Genius. Microsoft has included built-in ZIP support (under the name "compressed folders") in later versions



of its Windows operating system. Apple has included built-in ZIP support in Mac OS X 10.3 and later via the BOMArchiveHelper utility.

ZIP files generally use the file extensions ".zip" or ".ZIP" and the MIME media type `application/zip`. Some software uses the ZIP file format as a wrapper for a large number of small items in a specific structure. Generally when this is done a different file extension is used. Examples of this usage are Java JAR files, id Software .pk3/.pk4 files, package files for StepMania and Winamp/Windows Media Player skins, XPInstall, as well as OpenDocument and Office Open XML office formats. Both OpenDocument and Office Open XML formats use the JAR file format internally, so files can be easily uncompressed and compressed using tools for ZIP files. Google Earth makes use of KMZ files, which are just KML files in ZIP format.

**Zoom** Zoom in PTE has two meanings. First it is the amount of screen view size which may be changed by pulling down the drop menu from the View which defaults to Auto. The zoom may be as much as 500 or as little as 10. These values and the range of intermediary values let the user do precise positioning within the viewable area of the monitor for a slideshow or television as well as far off the screen where objects may be hidden until needed.

Zoom also refers to the ability of the user to size the image or object via the green bounding rectangle or the values typed into the zoom block. Zoom in PTE can be proportional or by clicking on a small icon between the horizontal and vertical zoom numbers can be divided so that image distortion can be easily affected to simulate three-dimensional effects

## APPENDIX F– HD VIDEO TUTORIAL

Prepared by Ray Waddington  
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Last updated: December 4, 2007

### Terms

What is HD? That's a very good question! If you don't know the answer then welcome to the confusing and ever-changing world of HD! The answer is simple – it depends on whom you ask. If you're asking the average salesperson, HD is anything that has the label "HD" on the product packaging that they can sell to you if you don't know any better! For the purpose of this tutorial HD means video that is rendered to any of the standard HD video resolutions: 1280x720, 1440x1080 or 1920x1080.

### PTE v5

This is not a tutorial on how to use PTE v5. It assumes you already know how to do that. It is also not a tutorial about the differences between NTSC and PAL/SECAM. It also assumes you already know about those differences. Instead it is a tutorial on how to produce HD output from your already-prepared PTE v5 project.

### Burning to DVD using PTE v5 Deluxe

PTE v5 Deluxe includes options for burning directly to DVD – if you have a DVD burner in your PC. That DVD can then be played back via your PC or a set-top (regular) DVD player. This is not HD. You can also play that DVD through most HD-DVD players/burners and most Blu-ray players/burners that are connected to your PC or to an HDTV. This is also not HD. Some DVD/HD-DVD/Blu-ray players claim to "up-convert" DVDs to HD quality. This is marketing hype and it is also not HD. WnSoft recently posted on their forum that they are targeting late 2008 for VideoBuilder to support true HD.

### HD Output from PTE v5

If you intend to produce HD video output there are some things you should ask yourself first:

- 1) Is my PC powerful enough? HD-capable rendering software has only recently become available outside the professional market. Unless you're producing very short videos (less than one minute) even a one- to two-year old PC will likely be too slow. You should use the most powerful PC you can afford. Even then, it is best to dedicate this PC to video production or to create a second, clean installation of your operating system and install *only* the software (including PTE v5) you will use for video production. I recently upgraded from a single processor, single-core 3.0 GHz PC with 1GB of memory and 32-bit Windows XP Professional to a two-processor, quad-core (8 cores total), 2.66 GHz PC with 8GB of memory and 64-bit Windows XP Professional; a very high-quality, full-HD (1920x1080) rendering task went from about 15 hours to about 1 hour!
- 2) Are my source images large enough? PTE v5 makes a good job of enlarging original images when necessary. But this is similar to the "up-converting" mentioned above. For true HD your source images should be at least as large as the resolution you plan for the video output. Any images that you will zoom should be at least twice as large if you zoom into/out of half of the

image; three times as large if you zoom into/out of a third of the image etc. This means for full 1920x1080 video resolution you should be using a very high-end consumer or a professional digital camera or a film scanner capable of scanning at least at an optical resolution of 3200x3200 (assuming you have 35mm slides or negatives). Always scan at the scanner's maximum native optical resolution and never use software interpolation of pixels; dots-per-inch/centimeter or pixels-per-inch/centimeter are irrelevant for video production.

- 3) Are my source images good enough? HD will reveal quality limitations of the source images much more than DVD. If the original was shot on 400 ASA film or higher (or was push-processed to 400 ASA or higher) or shot in low light conditions the image will be much grainier. (Of course, this may be the effect that you want.) This may appear to the audience to be lower than HD-quality. Panning, rotating or zooming the image will reduce the low-quality experienced by the audience but only to a certain extent; the same is true even for manipulation done by a professional image-processing application such as Photoshop; I know Photoshop reasonably well but there have been some images that I simply had to abandon for HD video output. Consider using a different image if you find the end quality works better.
- 4) What will be my HD delivery medium? More information about these choices is given at the end of this tutorial, but generally for the best quality HD playback this will be one of the following:
  - a. *File playback*: This will typically be a .wmv, .mov, .mp4, or .avi file delivered by web download or on a disc – CD/DVD/HD-DVD/BD, depending on the length of the content. Your audience will play it on their PC or Mac.
  - b. *HD-DVD*: This is one of the two competing formats for HD content. Use this if your audience has an HD-DVD player.
  - c. *BD*: Blu-ray – This is the other of the two competing formats for HD content. Use this if your audience has a Blu-ray player.
  - d. *THD*: Total Hi Def was recently announced by Warner Brothers for the release of commercial content (none is available yet). These discs (if they ever get released – latest is that they are on hold indefinitely) will be double-sided with one side being an HD-DVD and the other being a BD. You'd need both a Blu-ray burner and an HD-DVD burner. Recordable versions of these discs for consumers are not currently available. This tutorial will be updated of and when THD becomes a realistic option for consumers.
- 5) What will be my delivery medium if I want to use less expensive discs? More information about these choices is given at the end of this tutorial. This is the current “hotbed” of technology innovations in this area given the slower-than-expected consumer adoption of HD-DVD and BD content but the rapidly increasing consumer adoption of HDTVs. A number of high-quality HD content formats can now be delivered on standard (normal, regular, red-laser) DVDs. Some of these formats are so new that they aren't yet widely used. So I won't write about them in any detail here because the information could easily be out of date by the time you read it. If you're interested you should search for up-to-date articles on the Internet. These formats include:

- a. *WMV HD–DVD*: This format has actually been around for a few years already. It is HD content delivered on standard DVD using Microsoft HD video technologies. It will be especially useful if your audience has a PC with the *Windows Media Center Edition* operating system, although regular versions of Windows can also play WMV HD–DVDs as can some set–top devices. See [www.microsoft.com/windows/windowsmedia/musicandvideo/hdvideo/hdvideo.aspx](http://www.microsoft.com/windows/windowsmedia/musicandvideo/hdvideo/hdvideo.aspx) for more details.
- b. *AVCHD–DVD*: This is the best format for delivering HD content on standard DVDs that will playback in (many but not all) Blu–ray players. AVC (Advanced Video Coding, using an H.264 CODEC) is currently the most efficient compression technique for HD content.
- c. *3X DVD*: As its name suggests this is HD content delivered on standard DVDs. The discs contain content in HD–DVD format as this is now part of the official HD–DVD specification. Since it is part of the official HD–DVD specification these discs *should* play back in all HD–DVD players that support the latest version of the specification.
- d. *HD REC*: Another format that is now part of the official HD–DVD specification that allows HD content to be stored on standard DVDs. Since it is part of the official HD–DVD specification these discs *should* play back in all HD–DVD players that support the latest version of the specification.

### Creating the Content

PTE v5 will currently output only AVI (Audio–Video Interlace) files. You have a choice of which audio and which video codec to use. (PTE calls a codec “Compressor” referring to the compression part of COmpressor/DECompressor because creating video content involves compressing whereas playing it back involves decompressing.) This is where the world of HD can get very complex. I won’t cover audio codecs here. The PTE codec is the default video codec. This is the best one to use if you plan to render (perhaps to some format other than AVI) using third–party video production/rendering software. There are many such software packages available and these are not covered here. One of the best is actually free! It is Windows Media Encoder, useful for creating WMV–HD DVDs, and can be downloaded from:

[www.microsoft.com/windows/windowsmedia/forpros/encoder/default.mspix](http://www.microsoft.com/windows/windowsmedia/forpros/encoder/default.mspix).

It is useful for file playback and WMV HD–DVD rendering, authoring and delivery.

The other codecs available to you will depend on your history of using your PC. You may have downloaded one of many “codec packs” available on the web; or you may have played movies on your PC using a player, such as Windows Media Player, that automatically finds and downloads the necessary codec if you don’t already have it installed; or you may have downloaded an individual codec manually for reasons of your own; or you may have software that installed one or more codecs when it was installed. Depending on your history the codecs available to you when using PTE may number a few or a few dozen.

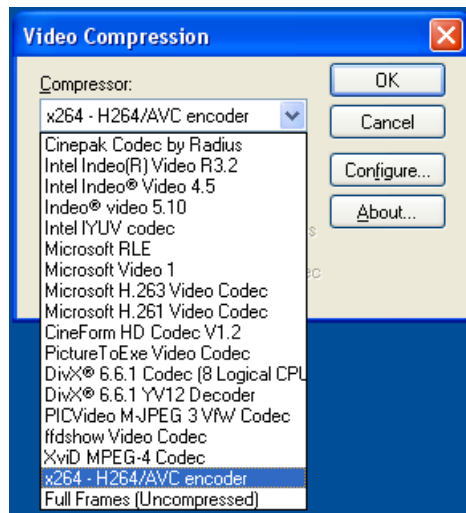


Figure F1. PTE will have a few or perhaps many video codecs available to it on your PC.

But PTE v5 will not work with all of them and it will work with others only if you configure them to match PTE's requirements and limitations. For example only RGB color space output is supported – YUV is not.

This is where you will just have to experiment using, at first, very short test video clips to see what works best for you given your video output requirements, your audience etc. As I've already mentioned the video resolution and delivery medium as well as the power of your PC are key factors but related factors are: file size, quality, location of your audience, equipment of your audience etc.

Here are a couple of codec configurations I have used for 1080p and 720p video output. I'll admit right now that I don't fully understand every single configuration option! It would take years to test every permutation so just experiment and go with what works for you.

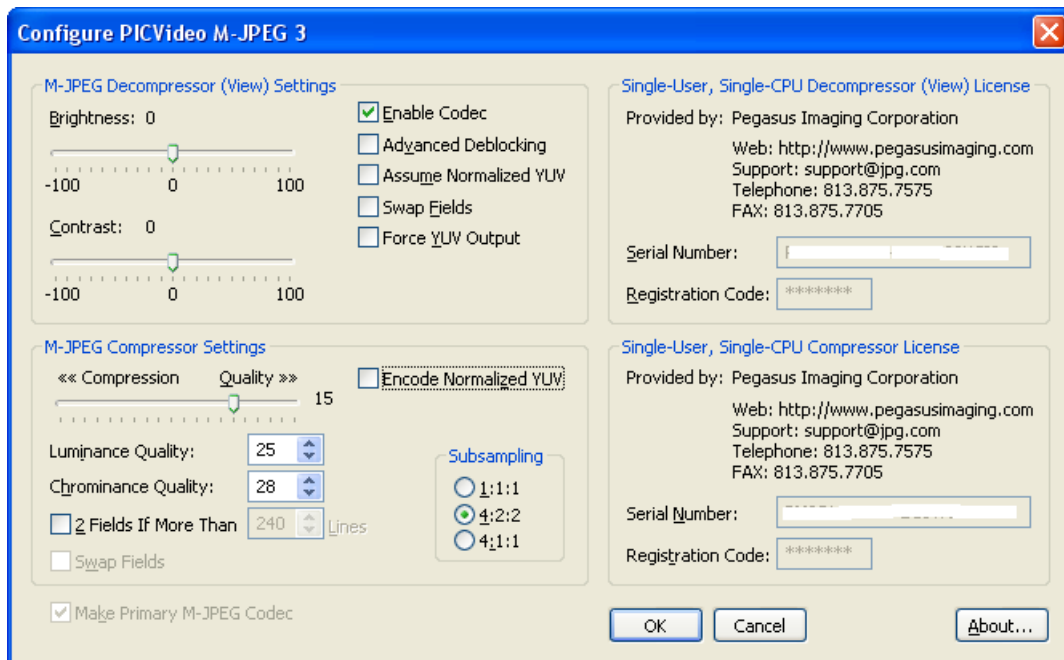
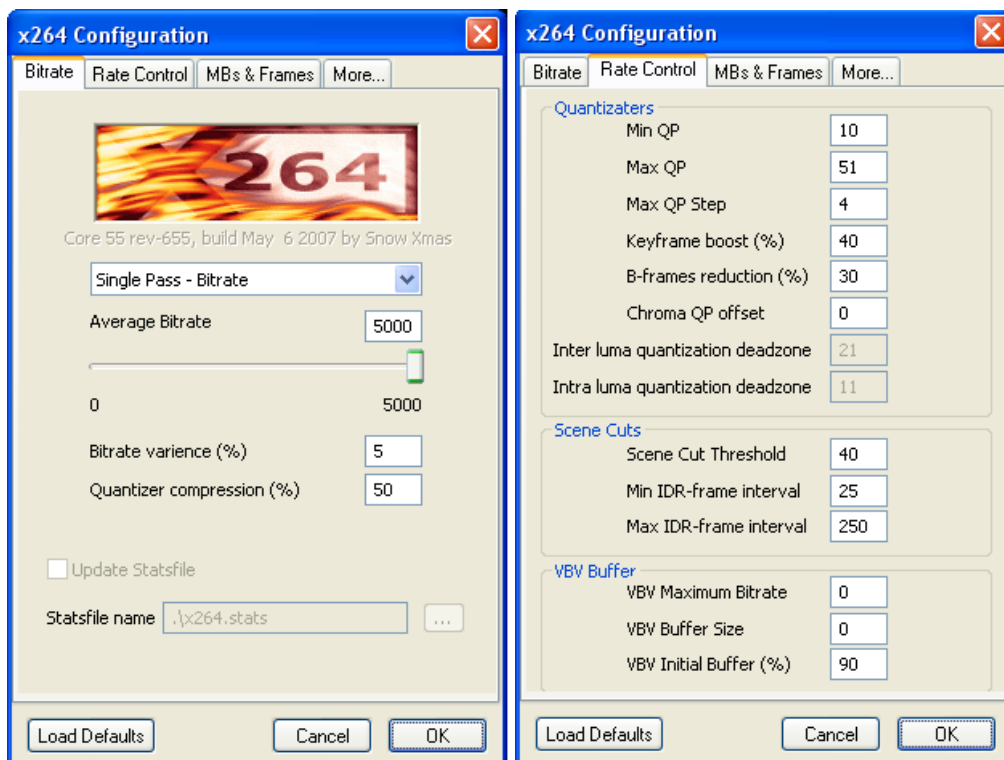


Figure F2. The M-JPEG codec from Pegasus Imaging Corporation produces good HD video at Quality factor 15.



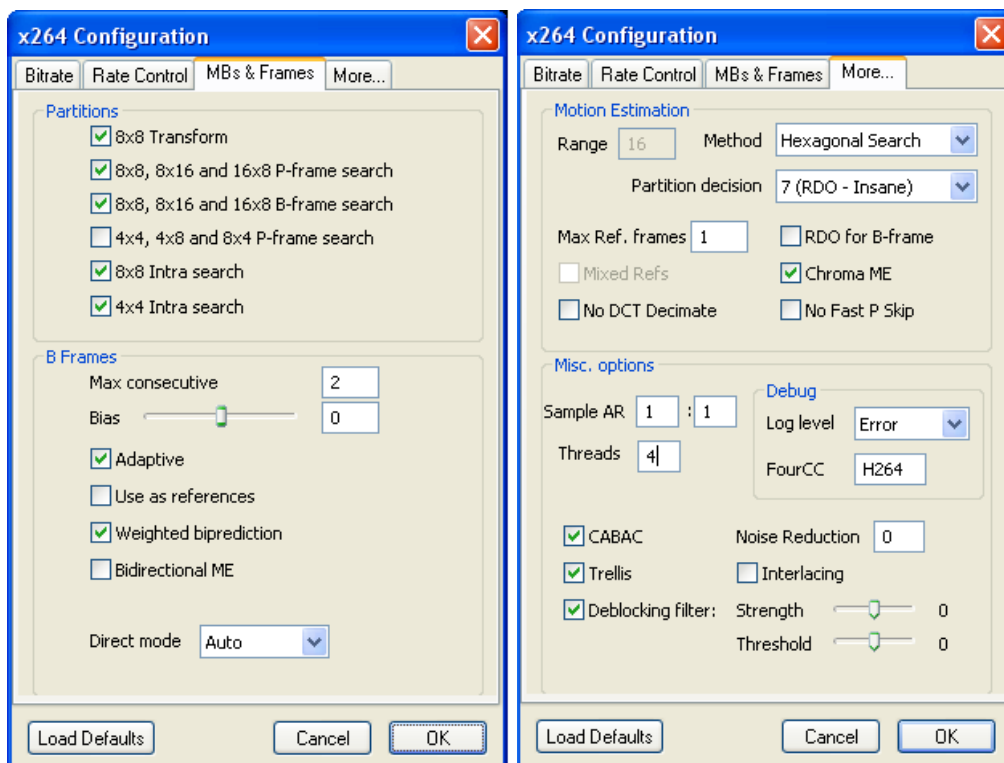


Figure F3. The free x264 codec is an excellent choice for producing HD output from PTE.

I've had my best experiences using

- (i) various different codecs then transcoding the output AVI file to .wmv format using Windows Media Encoder;
- (ii) the XviD MPEG-4 codec ([www.xvid.org](http://www.xvid.org)); and
- (iii) the only (as far as I know) freely available H.264/AVC codec, x264 ([www.videolan.org/developers/x264.html](http://www.videolan.org/developers/x264.html)). Of course your mileage may vary! All of these codecs can handle the three standard HD resolutions. If you are using third-party software it should already come with the codecs you need to render your video to your desired output format.

The next question is: what frame rate (frames-per-second or fps) should I use? PTE v5 allows any frame rate you choose but you should be aware of the standard frame rates that are used in HD video:

*Film*: Commonly called 24 fps the actual rate is 23.976 fps and this is the number you should enter into PTE. This is the same frame rate as movies (films) when you go to the cinema. It is the same all over the world. Generally only expensive, professional-level third-party software supports this frame rate.

*NTSC*: Commonly called 30 fps the actual rate is 29.97 fps and this is the number you should enter into PTE. This is the frame rate used on commercial DVDs, HD-DVDs and Blu-ray discs in North America and Japan. Many newer commercial DVDs, HD-DVDs and Blu-ray discs are encoded at 24 fps (to match the original film they are taken from) but that is a topic for a future version of this tutorial.

*PAL/SECAM:* Commonly called 25 fps the actual rate is 25 fps. This is the frame rate used on commercial DVDs, HD–DVDs and Blu–ray discs in all countries except North America and Japan. Many newer commercial DVDs, HD–DVDs and Blu–ray discs are encoded at 24 fps (to match the original film they are taken from) but that is a topic for a future version of this tutorial.

*Double NTSC:* Commonly called 60 fps the actual rate is 59.94 fps and this is the number you should enter into PTE. This is the frame rate used on some HD videos that are rendered at 1280x720.

*Double PAL/SECAM:* Commonly called 50 fps the actual rate is 50 fps. This is the frame rate used on some HD videos that are rendered at 1280x720.

I have found 24 fps works best for file playback and WMV HD–DVD. But you should probably use 30 fps for HD–DVD and Blu–ray. (Or 25 fps if your audience is not in North America or Japan.) This is changing though and players (and monitors) that can support native 24fps are beginning to emerge. Keep an eye on these technology developments.

The next question is: should I produce progressive or interlaced encoded video? PTE v5 allows both. Opinions vary on this. Many people claim that any part of a video having movement such as zoom looks better interlaced than progressive. I disagree and have consistently found that progressive encoding looks best to me. Again, your mileage may vary! As a rule of thumb, if your output is 720 it's almost certainly best to use progressive encoding. If you output to 1080 I suggest you experiment and go with what looks better to you for the video you are producing. You may find one video looks better interlaced and a different one looks better progressive. Commercial HD content is almost always encoded progressive outside of broadcast, cable and satellite TV delivery – and that is because of limited bandwidth.

The next question is: what bit rate should I use? This doesn't matter if you're using the PTE codec (but then it does matter once you move to the next step in your workflow – using your third–party software). For all other video codecs the “Configure” button will be enabled. There is no simple answer here. The higher the bit rate is the lower the compression is and the larger the file is and the better the quality is – *for the same codec at the same resolution*. Choose too–high a bit rate and your audience may find playback choppy; choose too–low a bit rate and the quality may not be good enough. The only answer is to experiment and ask your friends to play it back on their equipment and tell you their experience.

The choice of bit rate also depends on your audience and the equipment they are using. For example, .wmv files are typically encoded at 5 Mbps for 1280x720 video, 8 Mbps for 1440x1080 video and 10 Mbps for full 1920x1080 video. Your audience should have a very powerful PC for smooth playback of 8 Mbps and 10 Mbps .wmv files.

The final question is: what aspect ratio should I use? To understand the answer it is first necessary to understand the difference between video aspect ratio and pixel aspect ratio. HD video aspect ratio is *always* 16:9 (also commonly called anamorphic widescreen). For 1280x720 and 1920x1080 output you should use a 1:1 pixel aspect ratio (also called square pixels). The PTE codec doesn't allow you to choose pixel aspect ratio because it always uses square pixels.



Also don't confuse the pixels of the content you are creating with the pixels of the monitor or HDTV the video will be viewed on. While they are related it is important to understand the difference. You don't usually know if your 1920x1080 video might one day be viewed by someone who has a 1920x1080-pixel monitor/HDTV or a 1360x1024-pixel monitor/HDTV or one of the many other pixel resolutions that monitors/HDTVs have. And you shouldn't care. They're all capable of displaying your HD content – they'll scale it up or down if necessary, with some loss of quality if scaled up.

The pixels of your HD content in contrast are *virtual* pixels in your video output file. This means they describe how the player (the software player on a computer, such as Windows Media Player, Media Player Classic etc., or the set-top DVD/HD-DVD/Bu-ray player) *should* send the content to the monitor/HDTV. The combination of the player and the monitor/HDTV will actually determine how it looks when played. All you can do when creating your video is to specify how it *should* look.

All of that said your concern in this area should be only when creating 1440x1080 video. This is not an HD (16:9) video resolution so you must tell your codec or your third-party software that you want the (virtual) pixels of your video output file to have a 16:9 (non-square) pixel aspect ratio. Then your video file will tell the player how to make the file play back with a 16:9 appearance. When you test your 1440x1080 video on your computer you should be aware that not all software players can understand the non-square, virtual pixels in your video file. If your results look wrong it may be the player (or the way you have the player configured) and not your video file. Try playing it with other software players or learn how to configure the player you are using to correctly display your video file.

#### Authoring for Different Delivery Media

I've already covered file playback earlier. Here is some more information about other delivery media.

**WMV HD-DVD:** This is not only a format for HD content delivery on standard DVD. Microsoft has created a rich protocol for WMV HD-DVD content authoring for this format which you should read if you plan to deliver WMV HD-DVD content. More details are available at [http://www.microsoft.com/windows/windowsmedia/forpros/content\\_provider/wmvhddvd/default.aspx](http://www.microsoft.com/windows/windowsmedia/forpros/content_provider/wmvhddvd/default.aspx). I have successfully produced these although to use the term on the distributed media requires going through a Microsoft certification.

**HD-DVD:** If this is your delivery medium you need an HD-DVD burner. While these are still quite expensive for the average consumer they are continually dropping in price. HD-DVD burners typically come with consumer-level software required for authoring, rendering and burning HD-DVD content. Many popular consumer and professional video editing applications now also support HD-DVD authoring, rendering and burning HD-DVD content.

**3X DVD and HD REC:** I have not attempted to produce HD-DVD formatted DVD discs myself. Ulead MovieFactory is reported to support this as is Pinnacle Systems Studio product as well as some others. Expect more consumer-level software to support one or both of these formats in the near future.

**BD:** If this is your delivery medium you need a Blu-ray burner. While these are still quite expensive for the average consumer they are continually dropping in price. Blu-ray burners typically come with consumer-level software required for authoring, rendering

and burning Blu-ray content. Many popular consumer and professional video editing applications now also support BD authoring, rendering and burning HD-DVD content.

*AVCHD-DVD*: This is currently the most popular format for delivering HD content on standard DVDs. It is now supported by many consumer- and professional-level video editing applications. AVCHD-DVD discs will play back in most modern Blu-ray players because they contain a file structure similar to standard Blu-ray discs – see Figure F4.

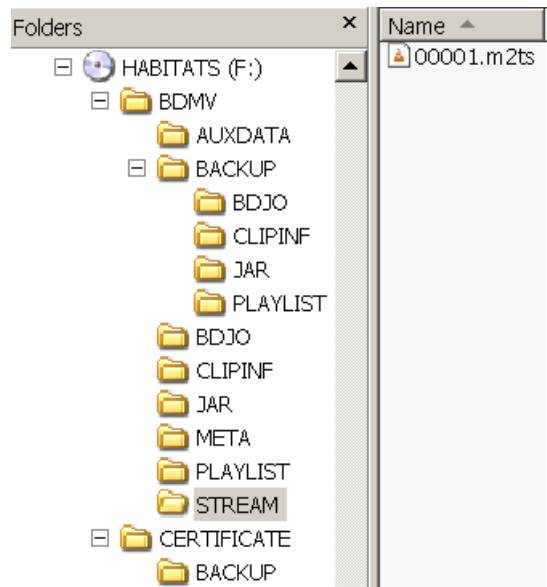


Figure F4. AVCHD-DVD discs are structured similarly to standard Blu-ray discs.

But AVCHD-DVDs are not a substitute for actual Blu-ray discs. An AVCHD-DVD at full 1920x1080 resolution at 24 fps burned to a single layer DVD can hold only about fifteen minutes of footage.

I can be reached at <http://www.peoplesoftheworld.org/contact.jsp?subject=hdtutorial>.

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## REVISION LIST

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