

Microsoft Inter-Office Memo

To: Distribution
From: Richard Hawes
Date: June 7, 1990
Re: PowerPoint 2.1 Development Schedule

Project Statistics:

	Schedule history:			Current
Schedule date:	3/29	4/26	5/24	6/7
Total hours:	7574	7565	7611	8482
Hours completed:	3900	4352	4664	4922
Hours remaining:	3674	3213	2947	3560
Total tasks:	104	104	104	125
Tasks completed:	21	26	26	43
Tasks remaining:	83	78	78	82
Balanced date:	8/2	8/2	9/2	11/25
Max date:	9/28	9/30	10/28	1/24

W W = 18% of time

People	Hrs/wk	Tasks	Hours	Completion date history:			Current	
DennisAb	36	2	36	13-Jun	4/2	4/30	5/28	6/14
RonU	36	20	854		9/17	9/28	10/17	11/20
DavePa	36	5	139	4-Jul	5/28	5/23	6/20	7/4
AndreB	36	15	728		9/2	9/30	10/28	10/26
PatF	36	19	811		9/1	9/14	10/2	11/11
RickH	30	21	992		9/28	9/21	9/16	1/24

Note: Hours/week above are less than 40 to account for:
 DavePa: Windows, AndreB: Translator, RickH: Management
 All: Consulting (2), Meetings (2)
 Balance dates before 6/6 don't account for DavePa and DennisAb leaving the project.

Distribution: RickH
 DavePa
 AndreB
 RonU
 DennisAu
 DennisAb
 PatF

* Receive schedule summary (cover page) only

Description	Pri	EstCost	ActCost	Who	Comp
Delay in starting	1	600	600	RickH	[6/7]
— Paste From —					
RTF Outlines from Acta or Word	1	80	80	RonU	[9/15]
Text file outlines	1	32	32	RonU	[9/15]
Paste from PICT with link	1	60	60	RonU	[1/18]
Paste from MacPaint with link	1	32	32	DavePa	[1/18]
Paste from EPSF with link	1	60	8	DavePa	[1/18]
Redo links for new pool	1	24	10	AndreB	[3/29]
— Slide Show —					
Save as Slide Show (Shower)	1	160	160	RonU	[9/15]
Use temporary (Multifinder) memory for image	1	24	24	RonU	[9/15]
New architecture design & data structures	1	60	55	RonU	[3/29]
Implementation of new structure	1	80	96	RonU	6/19
Transition dialog	0	32		RonU	6/13
Implementation of transitions	1	80	50	RonU	6/25
Slide show dialog	1	24	24	RonU	[6/6]
Rehearsal in slide show	1	32	4	RonU	6/30
Use timing in slide show	1	32	32	RonU	6/30
Use transitions	1	32	15	RonU	[6/6]
Use media events	1	32	16	RonU	7/3
Interruptable drawing	1	60		RonU	7/15
— Slide Sorter —					
Media controller architecture	1	126	118	PatF	6/18
Extend slide data structures	1	40	8	RonU	[6/6]
Media control bar / sorter layout	0	32		RonU	6/19
Show slide number and time	1	60	12	RonU	[6/6]
Dragging media icons	1	80		RonU	7/31
Print title sorter	3	16	Punt	RonU	[6/6]
Select/copy/cut/paste of icons	1	60		RonU	8/11
Interaction with media controllers	1	40	16	PatF	6/23
— Media Control Resources —					
Setup Contracts	1	80	160	PatF	6/23
Media controller test shell	1	108	84	PatF	6/28
Video (Arti)	1	100	25	PatF	7/12
CD Audio	0	60	8	PatF	6/17
Digitized Audio	1	80	40	PatF	7/20
MIDI (Opcode)	1	80	20	PatF	8/1
Director movies	1	64	12	PatF	8/11
Video Board controllers (various)	1	80	64	PatF	8/14
— Video Editor —					
Specification negotiation	1	80	12	PatF	8/27
Test and consultation	1	80		PatF	9/12
— Text Improvements —					
PowerEdit Text	1	2000	2000	DennisAb	[9/15]
New Rulers	1	100	100	DavePa	[9/15]
'styl' text format for clipboard	1	60	60	RonU	[9/15]
RTF text format for clipboard	1	60	60	RonU	[9/15]
Divide FontList module into command & support	1	32		PatF	9/18
Implement Style replacement	1	88	80	PatF	9/19
Check at startup for missing fonts	1	24		PatF	9/24

Description	Pri	EstCost	ActCost	Who	Comp
Smart Quotation marks ✓	1	32	8	AndreB	6/24
Allow label tool to select	1	24	8	DavePa	[6/7]
Improve text-edit model <i>46+2d</i>	1	80		AndreB	7/9
Line spacing for labels <i>12</i>	1	24		AndreB	7/14
Superscript/Subscript <i>2 + 2</i>	1	26	10	DennisAb	6/10
New menu item for other sizes <i>x 2</i>	1	8		AndreB	7/15
Kerning ✓	1	40		AndreB	7/23
Positioning dialog box	1	40	20	DennisAb	6/14
Non-Roman Scripts	0	120	56	AndreB	6/19
Right-to-Left Scripts	2	80		AndreB	10/14
Right-to-Left Rulers	2	60		AndreB	10/26
Text Shadows <i>2</i>	1	60	10	AndreB	[6/6]
Maintain Show Ruler state during session <i>2</i>	1	8		AndreB	7/25
Show text attributes in menu for graphics selections <i>4</i>	1	24		AndreB	7/29
— Pictures —					
New Picture Pool	1	80	45	AndreB	[2/27]
Substitution of scheme colors	1	32	15	AndreB	[2/27]
Retain old colors	1	32	25	AndreB	[2/27]
Remove 8-color limitation	1	24	20	AndreB	[2/27]
— Keyboard Control —					
Opt, Cmd, & shift with arrow keys	1	40	40	DennisAb	[9/15]
Forward delete key	1	32	32	DennisAb	[9/15]
Home, End, Page up/down, Help <i>2</i>	1	16		RickH	6/10
Font size control keys <i>5</i>	1	24		RickH	6/16
Arrow keys in slide sorter <i>2*</i>	1	16		RickH	6/20
New command keys	1	8		RickH	6/21
— Miscellaneous —					
Moveable modal dialogs for position, line spacing and shadow	3	40		RickH	1/24
Slide Setup dialog box changes	1	32		PatF	9/30
Delete color table comments when pasted into PP <i>mac only</i>	1	24		PatF	10/5
Replace gray scale output with line drawing	1	32		RickH	6/29
Out of frame checks like Windows version	1	16		RickH	7/3
Anti-virus measures	1	64		RickH	7/18
Graphics & Screen Module updates <i>7</i>	1	80	25	DavePa	6/29
Use BeginPostScriptNoSave comment in EPS reader	1	24		RickH	7/23
— Drawing —					
Shape command	1	108	108	DavePa	[3/29]
Adjust shape	1	40	40	DavePa	[3/29]
Shapes in drawing tools	1	50	24	DavePa	[4/26]
High resolution internal mode (superscale)	1	2	2	DavePa	[6/6]
Shadowed lines	1	10	5	DavePa	[4/26]
Adjustable shadows and embossing	1	80	60	AndreB	8/2
Shadow Dialog UI design and Implementation	1	40		AndreB	
Embossed & shadowed palette work	1	40		RickH	8/2
Crop command interface	1	32	16	DavePa	[4/26]
Grid release key	1	24	4	DavePa	[4/26]
Quick Drag	1	48	16	DavePa	[4/26]
Corner readout % on picture resize	0	32		DavePa	6/13
Fix undo state across graphics/text	1	40		RickH	8/11
Show undo titles on menu	0	32	4	DavePa	6/18

Description	Pri	EstCost	ActCost	Who	Comp
Highlight during band select	3	32	Punt	RickH	[6/6]
Draw while dragging	3	24	Punt	DavePa	[6/6]
Constraints after mouse down	3	32	12	DavePa	[6/6]
Autoscroll when dragging	1	24	24	DavePa	[6/6]
Control select	1	8	8	DavePa	[6/6]
Option copy	1	8	8	DavePa	[6/6]
Text Hit testing	1	8	8	DavePa	[6/6]
— System 7.0 Work —					
Outline all font sizes on menu if font is Royal	1	24		AndreB	8/7
Balloon Help	1	40		RickH	8/20
Basic AppleEvents	1	80		RickH	9/8
Presentation Events	1	60		RickH	9/22
— Publication management —					
Internal design	1	80		RonU	8/27
Subscription data structures	1	24		RonU	8/31
Publishing a slide as Pict	1	40		RonU	9/8
Subscribing to a Pict	1	32		RonU	9/14
Publishing a Slide in native	1	80		RonU	9/30
Subscribing to a Slide	1	80		RonU	10/16
Subscribing to non-editions	1	32		RonU	10/22
Link to large editions	1	40		RonU	10/30
—Embedding Pictures—					
UI Design	1	60		RickH	10/6
Protocol Design	1	60		RickH	10/20
Internal Implementation	1	60		RickH	11/3
Implementation in Graph	1	100		RickH	11/26
UI Implementation	1	20		RickH	12/1
—Translator—					
Update AFE translator	1	80		AndreB	8/23
— Overhead —					
Rework and bug fixing	1	80	4	RonU	11/13
Rework and bug fixing	1	80		AndreB	9/7
Rework and bug fixing	1	80		RickH	12/20
Rework and bug fixing	1	20	8	DavePa	7/1
Rework and bug fixing	1	80		PatF	10/20
Holidays & vacation	1	80	48	RonU	11/20
Holidays & vacation	1	120	8	AndreB	9/29
Holidays & vacation	1	120	8	RickH	1/15
Holidays & vacation	1	20	8	DavePa	7/4
Holidays & vacation	1	120	8	PatF	11/11
END OF DATABASE - DUMMY RECORD					
Schedule sorted by Logical order					
Priorities:					
0 - Work in progress					
1 - Definite must for product - no release without this completed					
2 - Should do early on schedule - (e.g. needed by user-ed) - definitely wanted in product					
3 - Would be missed if omitted - but consequences of omission are not grave					
4 - Nice to do if we have time, no serious impact if not done - minor doc hit, if any					

Description	Pri	EstCost	ActCost	Who	Comp
5 - Blue Sky luxury item, undocumented, vacation time, or misc weekly reserves					

Description	Pri	EstCost	ActCost	Who	Comp
Superscript/Subscript	1	26	10	DennisAb	6/10
Positioning dialog box	1	40	20	DennisAb	6/14

Description	Pri	EstCost	ActCost	Who	Comp
Transition dialog	0	32		RonU	6/13
Media control bar / sorter layout	0	32		RonU	6/19
Implementation of new structure	1	80	96	RonU	6/19
Implementation of transitions	1	80	50	RonU	6/25
Rehearsal in slide show	1	32	4	RonU	6/30
Use timing in slide show	1	32	32	RonU	6/30
Use media events	1	32	16	RonU	7/3
Interruptable drawing	1	60		RonU	7/15
Dragging media icons	1	80		RonU	7/31
Select/copy/cut/paste of icons	1	60		RonU	8/11
Internal design	1	80		RonU	8/27
Subscription data structures	1	24		RonU	8/31
Publishing a slide as Pict	1	40		RonU	9/8
Subscribing to a Pict	1	32		RonU	9/14
Publishing a Slide in native	1	80		RonU	9/30
Subscribing to a Slide	1	80		RonU	10/16
Subscribing to non-editions	1	32		RonU	10/22
Link to large editions	1	40		RonU	10/30
Rework and bug fixing	1	80	4	RonU	11/13
Holidays & vacation	1	80	48	RonU	11/20

Description	Pri	EstCost	ActCost	Who	Comp
Corner readout % on picture resize	0	32		DavePa	6/13
Show undo titles on menu	0	32	4	DavePa	6/18
Graphics & Screen Module updates	1	80	25	DavePa	6/29
Rework and bug fixing	1	20	8	DavePa	7/1
Holidays & vacation	1	20	8	DavePa	7/4

Description	Pri	EstCost	ActCost	Who	Comp
Non-Roman Scripts	0	120	56	AndreB	6/19
Smart Quotation marks	1	32	8	AndreB	6/24
Improve text-edit model	1	80		AndreB	7/9
Line spacing for labels	1	24		AndreB	7/14
New menu item for other sizes	1	8		AndreB	7/15
Kerning	1	40		AndreB	7/23
Maintain Show Ruler state during session	1	8		AndreB	7/25
Show text attributes in menu for graphics selections	1	24		AndreB	7/29
Adjustable shadows and embossing	1	80	60	AndreB	8/2
Outline all font sizes on menu if font is Royal	1	24		AndreB	8/7
Update AFE translator	1	80		AndreB	8/23
Rework and bug fixing	1	80		AndreB	9/7
Holidays & vacation	1	120	8	AndreB	9/29
Right-to-Left Scripts	2	80		AndreB	10/14
Right-to-Left Rulers	2	60		AndreB	10/26

Description	Pri	EstCost	ActCost	Who	Comp
CD Audio	0	60	8	PatF	6/17
Media controller architecture	1	126	118	PatF	6/18
Interaction with media controllers	1	40	16	PatF	6/23
Setup Contracts	1	80	160	PatF	6/23
Media controller test shell	1	108	84	PatF	6/28
Video (Arti)	1	100	25	PatF	7/12
Digitized Audio	1	80	40	PatF	7/20
MIDI (Opcode)	1	80	20	PatF	8/1
Director movies	1	64	12	PatF	8/11
Video Board controllers (various)	1	80	64	PatF	8/14
Specification negotiation	1	80	12	PatF	8/27
Test and consultation	1	80		PatF	9/12
Divide FontList module into command & support	1	32		PatF	9/18
Implement Style replacement	1	88	80	PatF	9/19
Check at startup for missing fonts	1	24		PatF	9/24
Slide Setup dialog box changes	1	32		PatF	9/30
Delete color table comments when pasted into PP	1	24		PatF	10/5
Rework and bug fixing	1	80		PatF	10/20
Holidays & vacation	1	120	8	PatF	11/11

Description	Pri	EstCost	ActCost	Who	Comp
Home, End, Page up/down, Help	1	16		RickH	6/10
Font size control keys	1	24		RickH	6/16
Arrow keys in slide sorter	1	16		RickH	6/20
New command keys	1	8		RickH	6/21
Replace gray scale output with line drawing	1	32		RickH	6/29
Out of frame checks like Windows version	1	16		RickH	7/3
Anti-virus measures	1	64		RickH	7/18
Use BeginPostScriptNoSave comment in EPS reader	1	24		RickH	7/23
Embossed & shadowed palette work	1	40		RickH	8/2
Fix undo state across graphics/text	1	40		RickH	8/11
Balloon Help	1	40		RickH	8/20
Basic AppleEvents	1	80		RickH	9/8
Presentation Events	1	60		RickH	9/22
UI Design	1	60		RickH	10/6
Protocol Design	1	60		RickH	10/20
Internal Implementation	1	60		RickH	11/3
Implementation in Graph	1	100		RickH	11/26
UI Implementation	1	20		RickH	12/1
Rework and bug fixing	1	80		RickH	12/20
Holidays & vacation	1	120	8	RickH	1/15
Moveable modal dialogs for position, line spacing and shadow	3	40		RickH	1/24

Get styles
notes out

Use of movable modals?

Position
Line Spacing
Shadow
other size
other color X

Text

Editing model	80
Line spacing in labels	24
New Line Spacing dialog	24
New Show Ruler state	8
Right-to-left ruler	60
Right-to-left scripts	80
Keyboard size control	24
add trap to menu, use 10% inc.	
Menu readout on non-standard	8
Kerning	40
sub/super	10
Dialog-positioning	16
Font names	done
check even fonts in pict	24
Outline fonts - show outline on menu	8
Divide Fontlist internally	32
Style replacement	8
Text attr. on menu in graphic sel	24

Shapes

exactly which shapes
shift key on draw

?

Shadows

User interface design

Implementations

Embossing colors not on palette

} 40
} 40

Mouse interface

Ctrl key down up

Constraints after mouse down

Draw while drag

Highlight during band select

?

Undo

text vs graphics

Undo names on menu

40
32

Pictures

resizing - corner readout

32

Edition Mgr

6 wks

Publish sequences

Edition format = file format

Resize to fit

Apply new schema

Draw over top

Subscribe to non Edition

32

Large file subscriptions

16

Slide Sorter

Hard stuff - mm icons

160

Effects dialog

Fill Screen

Slide Show

Save as Slide Show

Transition dialog

Transitions

Interruptable drawing

* key - interrupt media

Print Title List

Misc.

Graph

Microsoft Inter-Office Memo

To: Distribution
From: Dennis Austin
Date: May 24, 1990
Re: PowerPoint 2.1 Development Schedule

Project Statistics:

	Schedule history:			Current
Schedule date:	3/1	3/29	4/26	5/24
Total hours:	7279	7574	7565	7611
Hours completed:	3371	3900	4352	4664
Hours remaining:	3908	3674	3213	2947
Total tasks:	102	104	104	104
Tasks completed:	17	21	26	26
Tasks remaining:	85	83	78	78
Balanced date:	7/13	8/2	8/2	9/2
Max date:	9/10	9/28	9/30	10/28

People	Hrs/wk	Tasks	Hours	Completion date history:			Current
DennisAb	36	2	22	Done	4/2	4/30	5/28
RonU	36	21	751	8/27	9/17	9/28	10/17
DavePa	24	4	95	4/23	5/28	5/23	6/20
AndreB	36	16	808	8/22	9/2	9/30	10/28
PatF	36	19	675	8/29	9/1	9/14	10/2
TBH	36	16	596	8/31	9/28	9/21	9/16

Note: Hours/week above are less than 40 to account for:
 DavePa: Windows, AndreB: Translator
 All: Consulting (2), Meetings (2)

Distribution: TBH
 DavePa
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New command keys	1	8		TBH	6/2
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Autoscroll when dragging	1	24		TBH	7/20
— System 7.0 Work —					
Outline all font sizes on menu if font is Royal	1	24		AndreB	9/7
Use file references (if 7.0) for links	1	60		AndreB	9/19
Balloon Help	1	40		TBH	7/28
Basic AppleEvents	1	80		TBH	8/12
Presentation Events	1	60		TBH	8/24
— Publication management —					
Internal design	1	80		RonU	9/5
Subscription data structures	1	24		RonU	9/9
Publishing a slide	1	40		RonU	9/17
Subscribing to a Pict	1	32		RonU	9/23

Description	Pri	EstCost	ActCost	Who	Comp
Subscribing to a Slide	1	40		RonU	10/1
— Translator —					
Update AFE translator	1	80		AndreB	10/4
— Overhead —					
Rework and bug fixing	1	80		RonU	10/17
Rework and bug fixing	1	80		AndreB	10/20
Rework and bug fixing	1	80		TBH	9/9
Rework and bug fixing	1	20		DavePa	6/14
Rework and bug fixing	1	80		PatF	9/24
Holidays & vacation	1	40	40	RonU	10/17
Holidays & vacation	1	40		AndreB	10/28
Holidays & vacation	1	40		TBH	9/16
Holidays & vacation	1	20		DavePa	6/20
Holidays & vacation	1	40		PatF	10/2
END OF DATABASE - DUMMY RECORD					
Schedule sorted by Logical order					
Priorities:					
0 - Preliminary work/Preperation					
1 - Definite must for product - no release without this completed					
2 - Should do early on schedule - (e.g. needed by user-ed) - definitely wanted in product					
3 - Would be missed if omitted - but consequences of ommission are not grave					
4 - Nice to do if we have time, no serious impact if not done - minor doc hit, if any					
5 - Blue Sky luxury item, undocumented, vacation time, or misc weekly reserves					

Graph interaction

Estimated Test Hours for PowerPoint 2.1

Test Item	Hrs	Wks	
AFE Conversion			
Product Support Prep	150	5	
Slide Show Scripts	60	2	<i>build test present</i>
Configuration Script	30	1	
Organize Print Testing	30	1	
Documentation (2 manuals)	90	3	
PowerPoint Regression	120	4	
Genigraphics	240	8	<i>assumes brand new driver</i>
Help/Templates	120	4	<i>output</i>
Output	600	20	<i>?</i>
Configuration Testing	150	5	
Draw (other than pic)	80	2.5	
Text Edit	210	7	
Printing (set up)	30	1	<i>slide setup, etc.</i>
Clipboard (RTF)	30	1	
External Pictures ?	60	2	
RTF <i>outlines</i>	60	2	
MultiMedia Controls	600	20	
	2,660		
Add 50%	1,330		
Total	3,990		
Rnd Off	4,000		

8/1 to 12/15 = 570 person hours

9/1 to 12/15 = 410 person hours

RTM 12/15 = 9.0 people

RTM 1/15 = 7.0 people

Arrow key
sorter
slide

Micro items
out of frame check
high res operation

PowerPoint 2.1

Product Specification

Dennis Austin

Draft 3, April 24, 1990

This is a working specification of PowerPoint 2.1 for the Macintosh. It is written as a collection of changes to PowerPoint 2.0 rather than as a complete description of the product. The spec is divided into a narrative and an appendix with illustrations. The narrative is generally authoritative, but in many cases it leaves details unspecified that can be found in the pictures of dialog boxes, etc. The layout of menus and the available commands, for example, is present only in the pictures.

2.1 is a step on the road to PowerPoint 3.0. It will recapture interest in the Macintosh market quickly without waiting for the sweeping changes planned for 3.0. Although it contains many improvements, its electronic slide show will be the centerpiece of its positioning. It will allow us to take advantage of the current enthusiasm for multimedia among Macintosh users. Its multimedia capability is limited, but more practical than might be expected.

During an on-screen slide show, a user will have individually set times for each slide, transition effects between slides, and control of external media including video (tapes or disks), audio (digitized sound, compact disks, or MIDI synthesizer), and MacroMind animation sequences. With suitable add-on video genlock equipment, PowerPoint slides and full motion video can be combined on the same screen.

2.1 will be shipped fairly soon after Apple's 7.0 system software, and will take advantage of several new 7.0 features such as Inter-application Communication (IAC). Because many users will still have the older 6.0 system, however, 2.1 will not require 7.0. Some features, such as publications, are not available without 7.0 installed.

Main changes from Draft 2:

- Edition Manager interface, integration of Paste From
- Mouse interface changed to include more from 3.0 proposal
- Clarify shapes, shadow, and superscript/subscript

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Summary of Changes

The look and feel of PowerPoint is changed very little. There are only a few changes to the menus and to the window appearance. This will allow us, if we choose, to issue the update with only a secondary manual rather than a complete new book.

One issue not addressed in this specification is graphs. It will not be possible to adapt Windows PowerPoint Graph for the Macintosh, and we currently have no suitable replacement. The most likely choice at this point is bundling with a graph program from a non-Microsoft source, achieving integration through the Edition Manager.

Miscellaneous Improvements

Recolor Picture can recolor more than eight colors. (Windows PowerPoint already has this capability.)

Microsoft's Rich Text Format (RTF) is now supported for reading outlines (Paste From in a sorter view). Thus it is possible to import outlines created in Microsoft Word or in Acta, in addition to More.

There are a number of new shapes available in addition to the simple rectangle, rounded rectangle, and ellipse: triangle, parallelogram, diamond, etc.

The position of an object's shadow is now adjustable.

An object can be given a highlight as well as a shadow to give an embossed look.

The roundness of a round rectangle is now adjustable.

Mouse interaction has been improved to make PowerPoint easier to use, especially for novices.

Text

RTF format and 'styl' format are supported for clipboard exchange with other programs. Thus formatted text can now be cut and pasted between PowerPoint and various word processors, including Microsoft Word and MacWrite II.

Text rulers have been changed to look like those in Microsoft Word and in PowerPoint for Windows. Centered and right tabs are supported.

The internal text engine has been changed. PowerPoint now works with the Macintosh Script Manager, so it can be localized for markets requiring a non-Roman script such as Kanji or Arabic.

Character positioning is now adjustable, both in the direction of text flow (letterspacing and kerning) and across the flow (subscript and superscript).

Text shadows are now drawn by duplicate text drawing rather than relying on QuickDraw shadows. The shadow can be colored.

Line spacing is adjustable for label text.

A type style on the Styles submenu can be replaced throughout a presentation.

Slide Show

Separate automatic timing for each slide.

Transition effects such as wipes and dissolves.

Digitized sound files can be played at a transition.

Media controllers can be triggered at transitions to control video, etc.

A presentation can be saved as a "run-time" Slide Show.

System Software 7.0 Support

The edition manager is supported. You can subscribe to any edition file and you can publish slides. You can also subscribe to PICT and EPS files. Large pictures can optionally be kept separate from the presentation file.

AppleEvents will allow PowerPoint to operate under the control of AppleScript macros and the control of auxiliary applications. Only a limited set of AppleEvents will be supported by 2.1, but it will include all standard events and a few custom events that will allow a separate application to control a slide show.

"Balloon help" will be available on window parts, menu items, and dialog box controls.

Drawing

PowerPoint is going to receive an entirely new, platform independent, drawing engine in its 3.0 release. The 2.1 release changes drawing in less ambitious, but very helpful, ways..

New Shapes.

The implementation of two-dimensional objects (i.e. objects other than lines) considers them all to be variations on a single type. Round rectangles, for example, have a varying roundness that allows them to form almost a continuum from rectangles to ovals. The implementation has never been used to advantage before.

PowerPoint now has a new command that permits one shape to be changed into another, and also adds many new shapes. The Shape command is a hierarchical item with a custom submenu illustrating all the shapes which PowerPoint supports. Selecting from the menu converts one into another.

The tool palette also has a new tool for drawing the added shapes. It is a multiplexed tool. Holding down the mouse button on the tool will pop out a menu of alternative shapes that can be chosen for the tool. Clicking the tool just picks up the last shape selected.

Some shapes are also adjustable. For an adjustable shape, an extra handle is displayed when the object is selected. The handle can be dragged along the move fuzz to adjust the shape. For rounded rectangles, for example, the roundness of the corners is adjusted. For parallelograms, the shear angle is adjusted, and so on.

All shapes support attached text labels just as the original three did. For some of the new shapes, triangles for example, the correct placement of the text is not at the center of the bounding box. Size to Text also works for all shapes.

Shadows

Shadowed Lines

Unlike earlier versions of PowerPoint, the shadow attribute can be applied to line objects.

Shadowed Text

Text that is shadowed is now implemented in a new way that is particularly important for presentations recorded on video. When the object is drawn, the text is drawn twice. The first time, any runs with a shadow are drawn separately, offset as a shadow. It is drawn in the shadow style of the object. The second time, all the text is drawn normally.

Shadow Style

The Shadow command allows you to set the style and offset of an object's shadow. The style can be colored, darkened, or embossed.

Darkened shadows are drawn by using QuickDraw to blend the shadow area with black. Since it is a bitmap operation, it works only on color Macintosh systems. On non-color systems the shadow is drawn solid black. Blended shadows also print black on PostScript printers since they do not support the blending.

For a colored shadow, the shadow color is selected from a popup menu in the Shadow dialog box. This is the same as PowerPoint 2.0 except that the color is no longer set from the color menu.

“Embossing” means drawing both a highlight and a shadow in opposite directions. The color of each is computed from the color of the object to give the object a raised appearance. It is best used with unframed objects that are the same color as the background.

The Shadow dialog box also permits adjustment of the shadow offset to control the position of the apparent light source. The offset is adjusted by dragging the shadow on a sample object. The offset of the object shadow and the offset of the text shadow are separately adjustable, unlike the shadow style which is the same for both.

Mouse Drawing Interface

Version 2.1 introduces a number of changes to the details of the mouse drawing interface that are meant to simplify matters, especially for new users. The classic PowerPoint model of selection, resize, and drag has a number of unique advantages, but it is severely lacking in one respect: conformity with other applications. The new rules are designed to follow as many traditions as possible and yet give a high degree of control to experienced users.

Quick drag

The most unconventional thing about PowerPoint's mouse interface is that you can't drag an unselected object and you have to use the move fuzz on selected objects. It isn't so much a practical problem as it is a habit problem, but it is definitely a problem. Users are accustomed to being able to drag objects directly, without selecting them first and without using a special drag handle.

In Windows PowerPoint 2.0, the problem is mitigated by using of the right mouse button for moving according to CUA guidelines. For Macintosh versions, we have designed another method called quick drag.

In 2.0, mousing down on an object and dragging will drag out a selection rectangle, just as it will when mousing down away from any object. In 2.1, however, it will move the object on the slide. If multiple objects are selected, the whole group is dragged in the same way. The price to pay is that a selection

rectangle can now be drawn only by beginning the drag on an unoccupied spot. (Or by use of the control key as discussed below.)

One well-known problem in this approach is that small, unintentional motion may move an object when only selection was wanted. That problem has an also well-known, but weak, solution: the motion must exceed about three screen pixels before it is really considered motion. The reason it is weak is that it makes it hard to do precise screen adjustments with the mouse.

PowerPoint will use a different solution pioneered by Canvas. Object motion actually begins only after a timer has elapsed (about one quarter second). If the mouse goes up before the timer expires, the gesture is taken to be a selection no matter how far the mouse moved. Otherwise, if the mouse moved at all, the gesture is a drag.

Text tool as selector

PowerPoint does not require a special tool to select text. Not understanding this, many customers mistakenly try to select text using the label tool. To make life simpler for those users, we now allow the label tool to also select text. When the label tool passes over any object containing text it changes to an I-beam and allows immediate text selection.

Don't do

More Accurate Selection

The presence of the new shapes requires us to be more particular in our selection method. Originally, for non-lines, anywhere within the object rectangle was suitable for a hit. It worked satisfactorily for the simple shapes.

Now, however, there are shapes like triangles where selection hits must be restricted only to the shape itself. Consequently, the new selection algorithm requires that the selection point be within the actual shape. An exception is made for text protruding outside of the shape; selecting on the text will also select the object.

For 2.1, we will retain the rule that unfilled objects can be selected exactly like filled objects. The rule is quite helpful for most PowerPoint situations where the entire slide is on view without scrolling.

default to original

Selection highlighting

Although it is now possible to move objects without using the move fuzz highlighting, move fuzz is still displayed. This is partly for consistency with the past versions, but it is useful for other reasons.

The pointer turns to an I-beam inside a selected object that contains text, so dragging selected text objects still requires that the arrow be placed in the move fuzz.

inside the text only

Move fuzz makes the selection easier to see on colored or shaded backgrounds.

The move fuzz gives a visual guide to adjustment handle that appears on certain shapes.

It makes clearer which objects are selected, especially in a multiple selection.

It makes it easier to drag small objects or to drag one of several objects that are close together.

Multiple selections are not resizable. Since no resize handles are shown on multiple selections, we rely on move fuzz exclusively for the highlighting.

Copy object on Drag

PowerPoint 2 doesn't use the option key during move. In PowerPoint 2.1 we follow the strongest traditional use for this, begun in MacPaint. The option key duplicates the selected objects before dragging them. The option key must be down before the start of the drag.

should also work in sorters - icons & slides

Dave

Control Select

One of the problems with Quick Drag is that you can no longer begin a selection rectangle where an object already exists. If you try, the object is moved instead. Most drawing programs do not handle this situation at all, but Macintosh PowerPoint allows the selection rectangle anywhere if the control key is held down when the drag begins. The key behaves as follows:

- No matter what tool is in use, it changes to the pointer when the control key is pressed. Clicking will always select. *- not text*
- A drag with the control key down will never be interpreted as an object move (quick drag). It will always drag out a selection rectangle instead.
- If the mouse is only clicked while the key is down, the object selected will not be the currently selected object unless there is no possible candidate. Holding the control key down while clicking will cycle the selection through all objects at the pointer location. This additional behavior, borrowed from Canvas 2.0, allows you to select obscured objects.

can't select guides - not text

Key constraints applicable after mouse down

In PowerPoint 2, key constraints must be applied before mouse down. This allows you to let go of the keys once the mouse is down, but always requires you to think in advance. PowerPoint 3 allows the constraint to be applied or unapplied dynamically while the mouse is down.

This is a difficult feature to retrofit in the current drawing code. May need to be dropped from the 2.1 schedule.

Grid-release key

Since there is now a cropping command, the command key is available for this more worthwhile purpose. When the command key is down, the mouse is

freed from the constraints of the grid and the guides. Shift and option modifiers retain their effects.

does it work on guides?

Mouse Modifier Summary

PC Key	Mac Key	Drawing	Resizing	Moving	Selecting
Ctrl	Option	Pin Center	Pin Center	Duplicate* Dave ✓	
Alt	⌘	Grid Release*	Grid Release*	Grid Release*	
Shift	Shift	Regular figure	Proportional or horiz/ vert only	Horiz/Vert only	Multi-select
	Control				Never move Dave ✓ Select Next ✓

not in aspect?

*New for 2.1

Drawing text as you drag

Dragging text objects on the screen shows only the outline of the object. In many cases, however, the text itself needs to be visible in order to accurately align the object. In 2.1, text will be drawn while an object is being dragged.

The problem with the feature is speed; it is not clear that we can always display text because of the slow redraw. In MacDraw, holding down command while you drag draws the selection in detail rather than just its outline. PowerPoint has no modifier key available for this purpose, so we hope that always drawing will be satisfactory.

Auto-scroll while dragging

This feature has had a controversial history, but is now becoming more standard. While drawing, resizing, or dragging an object the window will automatically scroll if the pointer hits the side of the window.

Dave ✓

The trick to a good implementation is controlling the speed of the scroll. The scroll should never be too fast or view context is quickly lost. Speed may be proportional to mouse distance from the window edge as it is for text selection.

Undo

Undo of text vs. undo of graphics.

Earlier versions of PowerPoint always lost the ability to undo the last change whenever changing between text selection and graphics selection. This will no longer be the case.

Undo will also be possible across changes to the viewing scale.

Undo menu item changes name.

PowerPoint 2.0 never changes the name of the Undo command. PowerPoint 3 changes the name to reflect the nature of the last command: Undo typing, undo Cut, Undo Ruler Change, etc. After Undo is performed, the command changes again to Redo typing, etc.

Pictures**Resizing**

When a picture is resized, the cursor changes to a numeric indicator that can dynamically show the percentage of reduction or enlargement. If the shift key is down, constraining the resizing to proportional measurements, a single percentage is shown. Otherwise two numbers are shown, one for horizontal and one for vertical.

The original plan also called for the scale of a picture to be displayed in the Picture Info dialog box, making this readout essentially unnecessary. The Picture Info dialog box has disappeared with the new user interface for the Edition Manager, so this method is lost.

Cropping

PowerPoint originally supported picture cropping by use of the command key. This interface was convenient, but obscure. PowerPoint 2.1 will use the more evident interface for cropping used in Windows PowerPoint. This is a Crop command that gives the user a special cropping cursor.

To crop a picture object, first select the picture. Then choose the crop command. The pointer changes to a special form similar to that used for PageMaker's cropping tool. Dragging the resize handles now resizes the object as usual, but the picture inside is not stretched to fit. Instead, it is cropped to fit.

Once cropped, a picture may be uncropped or recropped using the same command. The object cannot be uncropped larger than the original image. The shift and option key constraints operate as usual, but the snap grid is automatically disabled during cropping.

Recolor Picture

The existence of Subscribers (see Publishing and Subscribing) as a special type of picture requires that the implementation of picture recoloring be changed. The picture itself will no longer be modified. Instead, a map of old and new colors will be retained so the picture can be recolored as it is drawn. This allows the picture itself to be changed without losing the remapping information. It will have the side effect of using scheme colors in the remapping; changing the scheme can change the colors of recolored pictures.

why should we?

shift double click to original size

Recolor Picture is also modified to recolor a large number (64) of colors rather than the former limit of eight. This conforms to the Windows version of PowerPoint.

Text

PowerPoint 2.1 uses PowerEdit instead of the old CoreEdit text engine. This establishes a foundation for considerable improvements in text features. It fundamentally improves the speed and robustness of our text implementation and makes use of the Macintosh Script Manager to allow use of non-Roman scripts.

Editing Model

The first implementation of PowerEdit imitates the CoreEdit performance as much as possible, but this is changing. The dotted outline surrounding text box edits, for example, has always looked ugly because it is not kept up to date with the changing text. Because of the indeterminate background, Macintosh PowerPoint has so far been unable to use HiliteMode text highlighting during text edits. This can now be fixed.

In the new method, opening a text selection automatically redraws all of the text on a solid, fixed background. The background color is the same one currently used for erasing while text is in open edit, namely the object fill or the slide background as appropriate. The editing area will be surrounded by a dotted line. The area automatically adjusts its size as required to contain the text. The system highlight color is used for text unless it is "similar" to the background color. In that case an alternative background color is used that is opposite the system highlight in HSV.

Line Spacing in Labels

Line spacing attributes may now be applied to labels. The dialog is different from the dialog for text boxes since labels have no paragraphs or indent levels.

Text Ruler

The ruler appearance has changed to look more like Word's ruler. Tab markers use Word's icons and the left margins are marked with small right triangles instead of the MacWrite-style isosceles triangles. The appearance is identical to Windows PowerPoint 2.0.

Since PowerPoint 2.1 will work with non-Roman scripts, there may be additional changes to the ruler (and possibly PowerEdit) to accommodate scripts that read right to left. *This may be harder than we anticipate and need to be dropped from the 2.1 schedule.*

Tabs

Macintosh PowerPoint 2.0 supports only left and decimal tab stops. 2.1 adds right and center tabs, conforming with the Windows PowerPoint 2.0.

Text Shadow

As explained in the section on shadow styles, text shadowing is improved to automatically implement what users often did by hand with the 2.0 version. QuickDraw shadowing is no longer used. Shadows are supplied instead by drawing the characters twice. The offset and color of the shadow are taken from the attributes assigned in the Shadow dialog box.

Instead of an ordinary shadow, an embossing effect can be designated for text just as it is for objects.

Keyboard size control

Macintosh PowerPoint will implement the classic keyboard controls for adjusting font size: Command-shift < reduces the size to the next smaller standard size, Command-shift > increases the size to the next larger standard size. Standard sizes are the sizes listed on the Size submenu.

System 7.0 uses TrueType fonts. Should the keyboard control adjust in finer increments? 1 point? 10% of current size? 20%?

Kerning

PowerPoint 2.1 has manual kerning. Letterspacing can be precisely adjusted with the Positioning command. It allows spacing to be set numerically as a percentage of standard spacing.

For visual kerning adjustments, a keyboard method is also available. Option-command-< decreases spacing and Option-command-> increases spacing. These can be applied to a run of characters or to an insertion point between two characters. The steps used by these keyboard commands depends on the size of the font involved; a step is about one tenth of the point size.

Subscript and Superscript

Baseline position can be adjusted precisely with the Positioning command on the Style menu. Its dialog box allows offsets to be specified in percentage of normal overall character height for the font in its nominal size. The default is 30%.

When either subscript or superscript offset has been set for a character, the font size is automatically reduced to 2/3 its nominal size.

Baseline position can also be set visually through keyboard commands. Option-command-shift-< lowers the baseline and Option-command-shift-> raises the baseline. The steps used by these keyboard commands depends on the size of the font involved; a step is about one tenth of the point size.

Font Names

PowerPoint 2.1 keeps track of fonts by their names rather than their font number. That way, it is aware when a font is not installed on a machine. An alert appears when a document is opened and one of its fonts is missing. (Geneva is used as substitute in these cases.) This feature also keeps the name from disappearing from the styles sub-menu. The font menu itself also lists the union of fonts that are installed on the machine and those used in the document. Fonts that are used but not available are shown in parentheses.

In system 7.0, it will be possible to retain the font names of fonts used in pictures. When opening a presentation, we could also verify that the fonts in the Macintosh system are identical with those in the presentation. We have not decided whether these should be done for 2.1 or not.

Outline Fonts

System Software 7.0 allows the use of outline fonts. Whenever a font is an outline, all sizes shown on the size menu are outlined. Even the word Other is shown in outline style.

Line Spacing

The line spacing dialog has been redesigned to be easier to use without giving up any flexibility. The command begins with a simple dialog box that allows setting of line spacing and paragraph spacing for all outline levels. A button unfolds the dialog box to reveal a finer level of detail. Here the spacing can be set individually for each outline level. The spacing at level changes is selected with an icon rather than checkbox. A separate spacing can be set up for each level in a single trip to the dialog box.

If new values are entered in the all-level fields, the values in the individual fields are changed to match. On a text box which already has spacing differentiated by level, the dialog comes up pre-unfolded.

Version 2.1 will also support a new method of line spacing designed to match the line spacing algorithm used in Windows PowerPoint. Standard line height will not be derived from the Macintosh font manager, but rather calculated from the nominal type size.

2.0 presentations are converted to the new algorithm when they are opened. their line spacing is adjusted to convert to the new algorithm. The line spacing will no longer be set to 1.0, though. It will be some value that minimizes the appearance change.

Smart Quotes

PowerPoint will implement automatic, contextual translation of ASCII quotation marks into real quotation marks. This feature is often called "Smart Quotes". It will be implemented exactly like the same feature in Microsoft Word.

The translation can be turned on or off with a command on the Style menu. The default is on.

Publishing and Subscribing

When run with the Macintosh 7.0 system software, PowerPoint 2.1 takes advantage of the new Edition Manager. It allows a presentation to subscribe to a picture rather than simply pasting it onto a slide. A subscriber records the source of pasted picture so that the data remains "live". When the picture needs to be changed, PowerPoint can find the responsible application, launch it, and have it edit the original document. After editing, the user saves the new picture and the updated version is automatically sent to the PowerPoint presentation for display.

The original picture can be published by any application. The user creates a publisher in the source document. The published data is copied to a separate file called an Edition file named by the user. To get the picture into a presentation, the user creates a subscriber on a slide; the subscriber names the same Edition file to complete the connection between the two documents.

Much more detail on the publication metaphor, the underlying communication mechanism, and the user interface is available from Apple in the documentation for system 7.0, Inside Macintosh, Volume VI.

Publishing

PowerPoint publishes only entire slides. In a future version we may wish to have PowerPoint define sections of slides for publication, but the additional complication is not appropriate at this time.

A Slide is published by the Create Publisher command on the Edit menu. It leads to a standard dialog box in which the edition file is created. The command is dimmed in master and notes views. In slide view, the new publisher is the entire slide on view. In sorter views, the publisher encompasses a single slide. If more than one slide is selected, an alert explains that only a single slide can be published. If no slide is selected, the command is dimmed.

Publishers are displayed only in sorter views. It appears as a 3 pixel wide border in 50% gray surrounding the slide title or miniature. The publisher itself cannot be selected, only the slide is selected. When a published slide is selected, the Publisher Options command, also on the Edit menu, is available for use.

When a published slide is copied to the clipboard, however, the publisher is not copied. If the slide is Cut, the publisher is copied. This insures that there is always only one copy of the publisher. When a published slide is dragged to a different location in the presentation, or Cut and pasted to a new presentation, the publisher follows it.

Media events associated with a slide are not published.

Subscribing

PowerPoint can subscribe to any publication that includes a picture for its rendering; this is likely to be 100% of all publications. A subscriber is created with the **Subscribe To** command on the **Edit** menu. The command leads to a standard dialog box in which the **Edition** file is chosen. It creates a subscriber on the current slide that displays the edition. PowerPoint normally keeps a local copy of the picture in the presentation so the edition file need not be available to show the presentation.

For most purposes, a subscriber is no different from any other picture. When a subscriber is selected, however, an additional 3 pixel wide border of 75% gray is displayed outside the selection highlighting. The **Subscriber Options** command on the **Edit** menu becomes available.

Subscribers have the same attributes as other objects—shape, fill, line, shadow, etc.—plus the recoloring and cropping that are available on other pictures. When the new edition is published, the subscriber in PowerPoint will change as well. The attributes that have been set in PowerPoint are retained, however, and are reapplied to the new edition.

This means, for example, that a recolored subscriber can be updated without losing its color mapping. If it has been cropped, the same cropping will be applied to the new version. If it has been resized, the scale is applied to the new version.

Subscriber/Publisher Options

This is a single command on the **Edit** menu that changes its name between **Subscriber Options** and **Publisher Options** depending on context. When a published slide is selected in a sorter, or when viewing a published slide in slide view, it reads **Publisher Options**. If a subscriber is selected, it reads **Subscriber options**. If neither of these cases apply, the command is dimmed and shows whatever text it last showed when active. The commands are both standard parts of the **Edition manager** user interface.

Subscriber options displays the path of the edition file and allows changing the option to get new editions automatically or on request. It also has buttons to request the latest edition, to cancel a subscription (turning the subscriber into an ordinary picture), and to go to the **Publisher** (start the publishing application and open the publishing document scrolled to the publisher).

Publisher options display the path of the edition file and allows changing the option to send new editions on request or automatically on file save. It also has a button to send a new edition immediately.

Subscribing to Slides Published by PowerPoint

The sections above describe the ability to create subscribers on slides that behave like other pictures. It is also possible to make an entire slide a

subscriber by using the Subscribe to command while in a sorter view. In this case, only slides published by PowerPoint are available.

Slides that are subscribers inherit the master slide from the subscribing presentation rather than the publisher. They can have their color scheme changed, and they can have new objects drawn on top of them, but the content of the published slide itself cannot be edited or selected.

This highly desirable feature has not been given enough design consideration and may need further honing.

Subscribing to Non-edition Picture Files

The Edition Manager makes it possible to subscribe to files that are not actually edition files, so long as the application is able to interpret the contents of the file itself. PowerPoint can subscribe to PICT, EPS, and MacPaint format files using this feature. The current Apple documentation is not specific, but it seems that updates would always have to be manually retrieved for non-edition files.

Subscribing to pictures in this way replaces the former Paste From capability that read files of these same formats. The Paste From command is now replaced by Import Outline.

When running on 6.0.x versions of the system software, the Edition manager is not available. On these systems there will be no Subscribe to command, so a replacement must be used that implements the function of the old Paste From command. It is called Paste from File and appear on the Edit menu.

On the Macintosh system 7.0, the edition manager locates a file by the alias manager. On 6.0.x, a search path is used: PowerPoint first looks in the same folder where the document is located, so as long as the pictures are copied along with the document, the document can be moved from folder to folder. If the picture is not in the same folder, PowerPoint will try the folder where the picture was located at the time the link was created.

If the picture can't be found by reference or search path, PowerPoint will offer a standard file dialog for the user to locate the picture. If the dialog is canceled, the picture will be drawn as a rectangle with an X through it. The X will continue to be used until the picture file reappears in its original folder or in the same folder with the document.

The 6.0.x design hasn't received much thought as yet.

Handling Large Edition and Picture Files

Normally, PowerPoint stores a copy of a subscriber's picture in the presentation. This is very convenient for normal pictures, but in the case of very large pictures, particularly scanned color images, it can be a problem. It becomes a large consumer of disk and memory space.

When a subscriber is created, the size of the edition file is checked to see how practical a copy of the file is. If the image is larger than a certain size (16k

bytes?) an alert will appear offering to omit the local copy. If no local copy is made, the external file must be present in order to draw the subscriber.

The images for these subscribers are placed in memory as they are needed, but can be purged if required for other memory requirements. PICT files can be spooled into memory as used, so it is not necessary for the entire picture to fit in memory.

For EPS and MacPaint files, the entire picture must be able to fit in memory, because it is constructed dynamically whenever it is needed from the external file.

Slide Show

Slide Show has been improved to make electronic presentations a central feature of PowerPoint's capability.

Slide Sorter Changes

The slide sorter is augmented to add Slide Show controls. These include the time for each slide, screen transition from one to the next, and control of accompanying media.

An icon palette is added at the top of the window, and iconic annotations are added under each slide miniature. These include slide number, the time on screen, and miniature icons to represent transition, sound, video, etc.

The annotation icons can be selected individually. They can be dragged from one slide to another to change which slide controls a media event. They can be copied and pasted on other slides.

Opening (double clicking) an icon brings up a dialog in which the event is described in full. Dragging an icon from the palette at the top of the window creates a new media event that can be placed on any slide. A definition dialog immediately appears in this case.

The arrow keys now work in this view to move the selection. Since the slides are arranged in a sequence much like text, the text usage of the arrow is a model for slide sorter. The option key (move by words) and command key (move to edge of object) are not used, but the shift key functions just as it does in text, extending or shortening a sequential selection.

The actual viewing scale of the miniatures is now correctly called out on the View menu.

Timing

Automatic slide shows can now be set up with a unique display time assigned to each slide. To do this you click the Rehearse checkbox in the slide show dialog box. When rehearsing, a tiny window appears in the corner of the screen showing two numbers: the seconds that the current slide has been on the screen (continuously advancing) and the seconds it was on the screen during the last rehearsal (static). At the conclusion of the slide show, an alert asks whether the new times should be saved.

Times can also be set directly in the dialog that controls slide transition effects.

Fill Screen

In 2.0, Slide Shows always displayed at one of the menu views (full, 66%, 50%, or 33%) so that fonts would look as good as possible. With the advent of

Reinstall
option, but
change the
default.

TrueType fonts, any size will give equally good results. For 2.1 running with TrueType, PowerPoint always scales the actual slide size to the biggest possible screen image. (Note that there is no guarantee that all the fonts in the presentation are TrueType fonts; if they are not, fonts will look bad.)

Some screens are larger than the slide size. For those displays, as for 24-bit color displays, PowerPoint is unlikely to find sufficient memory for an off-screen pixmap.

Transition Effects

The transition from one slide to the next can now be controlled. A transition is associated with each slide along with its display time. Simple transitions include direct (CopyBits), fade through black, or wipe.

The transition is symbolized by a transition icon that appears with each slide in the slide sorter view. Opening the icon invokes the transition dialog box where a new transition can be selected. The dialog also allows specifying the number of seconds for a slide, as an alternative to the rehearsal method discussed above.

Effects are stored as special code resources (PPFX) with a standard interface to PowerPoint. This makes it easy to add new effects, etc., but is not intended to allow the effects to be stored in separate files.

Control of other Media

Each slide can have an associated list of events that are triggered when the slide is displayed in slide show. Media events are handled by controller programs stored as separate code files. The controllers have two functions. First, in slide sorter view, they can present dialogs to define events. Second, in slide show, they interpret the events and drive the corresponding media device.

If an event results in extended media activity like the playing of a video clip, no further events can be accepted on the same device until the first is complete. Slide changing may proceed while the media play proceeds. Media controllers normally accept Pause and Stop commands for interactive override.

Digitized Sound

A digitized sound is a sampled sound stored in a separate Macintosh file and played by the Macintosh sound manager. This is the simplest form of a media addition to the show—no external equipment is necessary.

The digitized sound controller includes capabilities from Farallon Systems that will allow recording of a sound directly from the controller dialog. With the MacRecorder microphone attached, voice commentary can be added without ever leaving PowerPoint.

Video

The video controller is being supplied by ARTI. The definition dialog can choose clips that were previously defined by ARTI's XXX program, or it can directly define a new clip interactively.

Once the video starts, it will play until the end even if several slides change while the video plays. This makes it possible to have graphics overlay the video at different times while it plays. The slide show timing rehearsal makes it easy to synchronize the slides with the video. If a video is already playing when a new video is requested by a slide change, the new video is ignored.

During slide show, the video can be interrupted by keyboard commands . Pausing the slide show (“+”) will pause the video, freezing the current frame. Stopping the slide show (Cmd-period) will stop the video. A new command, “*”, stops the video without otherwise interrupting the show.

Video on the Mac Display

With a video genlock board (not currently available from Apple, but sold by several third parties), the video can actually be combined with the slide image on a single screen. The slide itself may be blank if no image is meant to overlay the video.

Setting up the single-screen display can be done outside of PowerPoint, but for some boards we may provide a media controller that can tell the board to play video in a particular part of the screen, with a particular chroma-key, etc.

CD Audio

Compact disks in the Apple CD ROM drive can be played. Position selection is defined in the standard way for CDs.

MIDI Audio

The controller may play MIDI files in standard format by using the Apple MIDI manager. Opcode Systems is providing the media controller for MIDI. It allows selection of a MIDI file and also various modifications of the sound: channel mapping, tempo adjustment, etc.

Director Clips

The Director controller plays a single Director animation clip. The clip would ordinarily contain its own sound, but may not. The controller uses a standard player module to be licensed from MacroMind.

Slide Shower

The Save As command is also extended to allow saving the presentation as a slide show. The saved presentation is then itself an application instead of a document. Running that application starts a slide show exactly like that run from within PowerPoint. The show starts without offering the slide show

dialog, using whatever settings were last used when the show was saved. The dialog can be brought up with Command-period as usual. The only difference from an internal slide show is that the dialog's Cancel button is labelled 'Quit'.

Other Features

Clipboard formats

Macintosh PowerPoint 2 supports three clipboard formats: PICT, TEXT, and MWRT. PICT and TEXT are standard and mandatory; MWRT is the MacWrite format and allowed PowerPoint to exchange styled text with MacWrite.

Windows PowerPoint supports RTF text for styled text interchange. RTF text is not used on the Macintosh, but it is now supported by Word 4.0 and Excel 2.2 so some other applications may adopt it as well. PowerPoint now supports RTF on the clipboard.

Apple's TextEdit defines another, weaker, standard for styled text that is used by a number of programs on the Macintosh such as MacWrite II and MacDraw II. Macintosh PowerPoint now also supports this format.

All versions support the platform's native metafile format for pictures.

Importing Outlines

Pasting outlines from text, More, Acta (RTF), or Word (RTF) files is now available. The Paste From command has a submenu with an Outline choice to make this ability more obvious. New slides are created at the selection point in a sorter view, or after the current slide in slide view.

From text files, the outline structure is inferred from leading tabs at the beginnings of paragraphs. From Acta RTF files it comes from the paragraph indentation. From Word RTF files it is picked up from the style information.

When reading an RTF file, only paragraphs marked as part of the outline are used on the slides. This allows a user to write a paper using Microsoft Word with its outliner and construct the shell of a presentation automatically. Just save the document in RTF and then read it into PowerPoint's outline sorter.

Outlines create slides in the same way they do in version 2.0, so Word outlines can be placed on slides, on the notes pages, or on both.

System Software 7.0

PowerPoint 2.1 will be completely 7.0 compatible. A few features of PowerPoint 2.1 are available only when running with 7.0.

Stationery

A stationery document is the same as any other document except that, when opened in PowerPoint, an untitled copy is created. Any document may be converted into a stationery document by clicking the Stationery checkbox in the Finder's Get Info dialog box.

This new feature replaces the "Open as Untitled" feature on PowerPoint's Open command dialog box. The Open as Untitled checkbox is removed regardless of which system software is running.

Open read-only instead?

Color Icon

PowerPoint will have a sixteen color version of its icon for use by the Finder in system 7.0. It will also have color and black and white small icons for use in menus, etc. We will convert to icons that are similar to those used by Windows PowerPoint.

Balloon Help

The Help Manager allows us to specify help for all of our window parts, menus, and dialog boxes. We will take good advantage of this new ability. The help presentation can be reduced in size to omit all similar information and retain only help that answers the "How do I...?" type of question.

AppleEvents™

2.1 will not make extensive use of AppleEvents, but it will implement all the standard ones necessary to be fully 7.0 compatible. It will also define sufficient private events to allow another program to start and control a slide show in PowerPoint. These are not yet documented.

Edition Manager

PowerPoint will fully support the Edition Manager when running on 7.0. When not on 7.0, the three Edition Manager commands on the menu are replaced with a single Paste from File command.

When a presentation containing publishers or subscribers is opened under a 6.0.x environment, the edition manager information is retained so far as possible, similar to the way color is handled on non-color Macintoshes.

Outline Fonts

PowerPoint will take advantage of outline fonts with no particular work needed. There are possibilities, however, for many improvements. It can check to see if the font used by a presentation is exactly the same as the one now available in the Macintosh system and warn if it is not. It can use much more precise font metrics to layout text using better character shapes.

Internal Mechanisms

New Picture Utilities for Resolution, Fonts, and Colors

In system 7.0 PowerPoint can use toolbox routines to analyze the color and font content of pictures. We should switch to these tools in order to have a completely standard color presentation. PowerPoint does not currently examine fonts at all, but could easily do so with 7.0.

Graphics Worlds

Graphics Worlds allow PowerPoint to manipulate off-screen images with less dependence on QuickDraw specifics.

Alias manager

2.1 may use the alias manager to keep track of spelling dictionaries. It is not yet clear how beneficial this would be.

Preference file

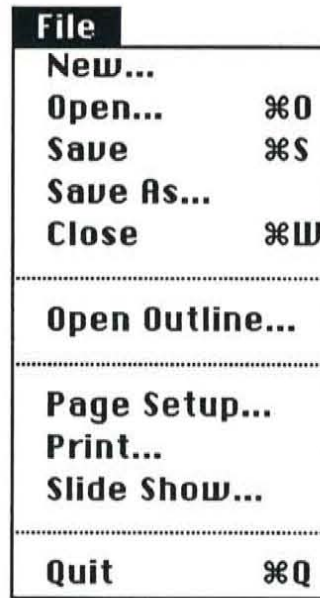
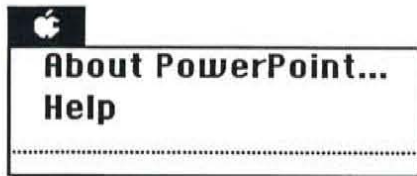
PowerPoint currently has no preferences or other settings that are carried between sessions, but are not part of a file. The first candidate we have to consider is the smart quotes options—is it an application global or should it be carried with each presentation?

For any globals of this kind, system 7.0 defines a special folder in which to place files to hold the information.

Appendix

Annotated Illustrations

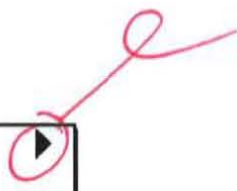
Overview of the Menus



Overview of the Menus


Edit	
Undo	⌘Z
.....	
Cut	⌘H
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
.....	
Paste as Picture	
Crop Picture	
.....	
Create Publisher...	
Subscribe to...	
Subscriber Options...	
.....	
Omit Master Items	
Set as Title	
New Slide	⌘N

View	
Full Size	▶
66% Size	
✓50% Size	
33% Size	
.....	
✓Slides [#1]	⌘D
Notes [#1]	⌘E
.....	
Slide Master	
Notes Master	
Handout Page	
.....	
Title Sorter	
Slide Sorter	



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Overview of the Menus



Style	
Plain	⌘P
Bold	⌘B
Italic	⌘I
Underline	⌘U
Outline	
Shadow	

Font	▶
Size	▶
Positioning...	

Styles	▶
Define Styles...	

Smart Quotes	

Text	
✓Left	
Center	
Right	
Justify	

Indent <<	⌘L
Indent >>	⌘R

Show Text Ruler	
Line Spacing...	
Set as Default	

Find/Replace...	
Find Next	⌘F
Spelling...	

Overview of the Menus

Draw	
Opaque	
Framed	
Filled	
Shadowed	
Sized to Text	
<hr/>	
Pattern	▶
Line Style	▶
Arrowheads	▶
Shape	▶
Shadow...	
<hr/>	
Bring to Front	⌘=
Send to Back	⌘-
<hr/>	
Snap to Grid	
Show Guides	⌘G
Show Edges	

Color	
Fill	▶
Line	▶
Pattern Contrast	▶
Text	▶
<hr/>	
Color Scheme...	
Recolor Picture...	
Add Extra to Menu...	

Window
Untitled
Spelling

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File Menu

File

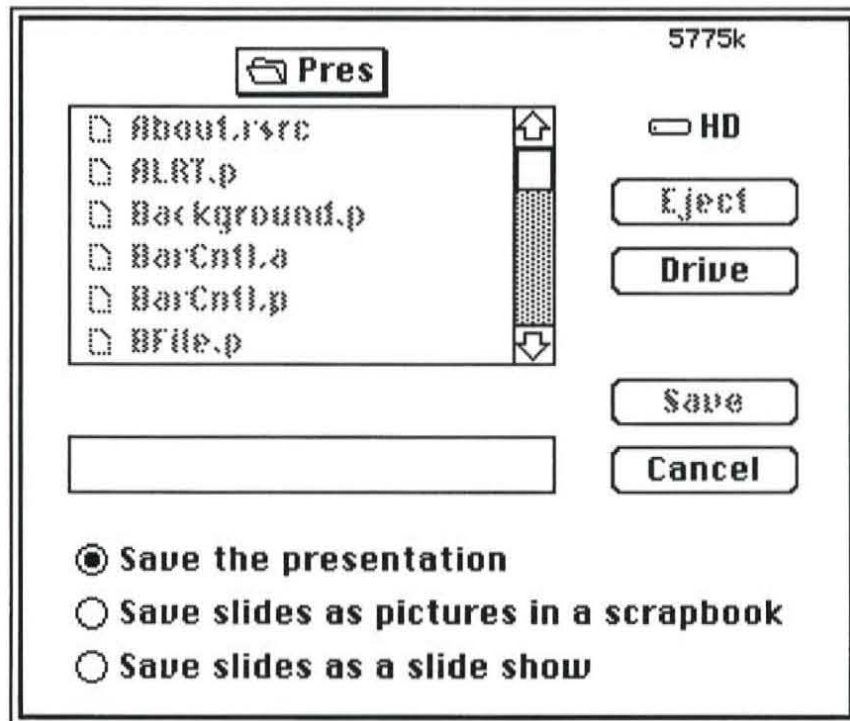
New...	
Open...	⌘O
Save	⌘S
Save as...	
Close	⌘W
Read Outline...	
Page Setup...	
Print...	
Slide Show...	
Quit	⌘Q

There are new keyboard commands for Open and Close. These are the standard keys for this purpose, used in the Finder and many applications. The New command still has no keyboard equivalent because the standard ⌘ N is used for New Slide, a much more frequently used command.

The Paste From command has been replaced by the Read Outline command. Pasting pictures from a file is now handled by the Subscribe To command on the edit menu. This not only integrates picture files and editions, but makes the ability to read outlines more obvious.

Read Outline is available even in slide view, but using the command will automatically switch to Title Sorter.

Save Dialog Box



The dialog has a new radio button allowing a presentation to be saved as a slide show “run-time application”. Once the presentation is saved in this way, it can be opened from the Finder without the need for PowerPoint’s presence. It performs only the slide show.

Note that saved slide shows will not be entirely self-contained if they contain links to external pictures (Paste from) or to sound files and video. The fonts necessary for the presentation must also be present on the show machine. The advent of outline fonts in system 7.0 will make it unnecessary to have the correct sizes available.

Print Dialog Box

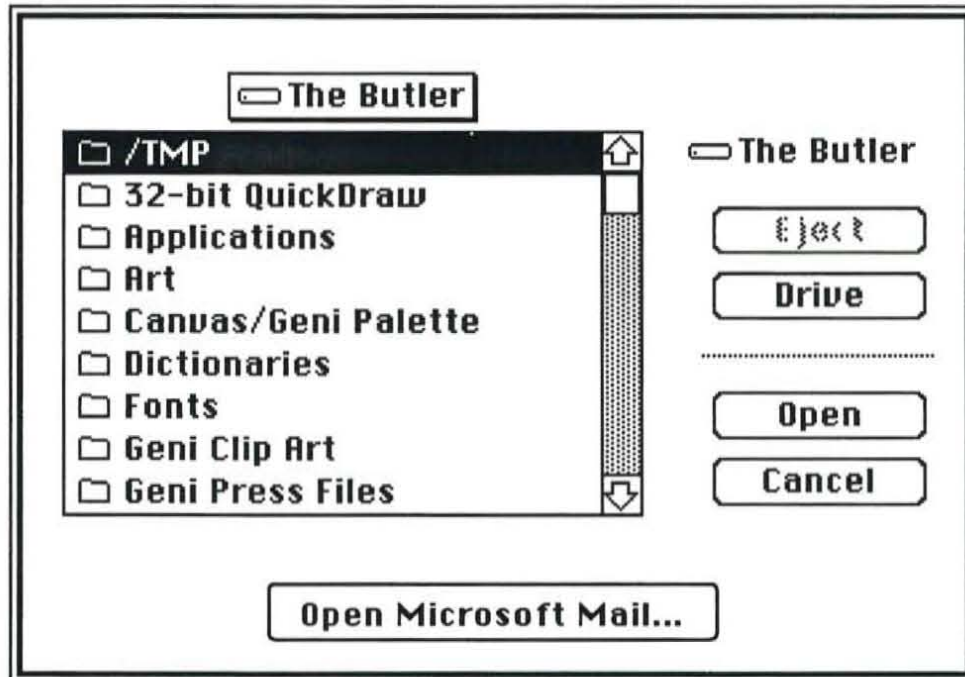
LaserWriter "South LaserWriter NTX "		5.2	OK
Copies: <input type="text" value="1"/>	Pages: <input checked="" type="radio"/> All <input type="radio"/> From: <input type="text"/>	To: <input type="text"/>	Cancel
Cover Page: <input checked="" type="radio"/> No <input type="radio"/> First Page <input type="radio"/> Last Page			Help
Paper Source: <input checked="" type="radio"/> Paper Cassette <input type="radio"/> Manual Feed			
Print: <input checked="" type="checkbox"/> Slides	<input type="checkbox"/> Print Back to Front		
<input type="checkbox"/> Notes Pages	Slide Printing:		
<input type="checkbox"/> Handouts (2 slides per page)	<input checked="" type="radio"/> Normal		
<input type="checkbox"/> Handouts (3 slides per page)	<input type="radio"/> Omit Solid Fills		
<input type="checkbox"/> Handouts (6 slides per page)			
<input type="checkbox"/> Title List			

This is a slight modification of the the Macintosh PowerPoint 2.0 print dialog box. The former Slide Colors option is now renamed Slide Printing. Since the LaserWriter now handles gray scale printing better than PowerPoint can, that option has been deleted.

In place of inverse gray scale printing, a new option provides readable printing on purely black and white devices. It prints using the same drawing technique that PowerPoint 3 will use on black and white Macintoshes: solidly colored objects are represented by drawing their frames in black and their fills in white. This permits overlapping objects, and particularly text set against a colored background, to be seen.

The option to print a list of the slide titles has been added. This is primarily as an aid to giving slide shows. The printing format is fixed and looks like the Title Sorter. (Font and size could be settable by menu commands in Title Sorter if we want to.)

Open/Save as Dialogs for MS Mail



The Open dialog is modified as shown above to allow PowerPoint to directly open presentations that are in the user's MS Mail box rather than in a file on disk. Note that the former option to Open an Untitled Copy is deleted as unnecessary with the new stationery feature.

A similar button is available in the Save As dialog box that allows a presentation to be sent as mail rather than saved to disk.

Page Setup Dialog Box

Slide (gray) on Page:

Number Slides Starting from:

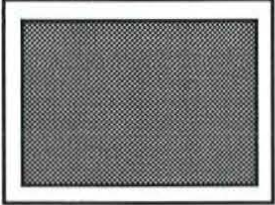
Slide Dimensions:

Printer Page Size

Genographics Presentation Size

Custom Size: Inches Tall by Inches Wide

Screen Size: Pixels Tall by Pixels Wide



This dialog box follows a proposal originally made for PowerPoint 2.01 in which the 3:4 and 2:3 aspect ratio options from the original PowerPoint have been deleted. This is similar to Windows PowerPoint except that orientation is not selected here but screen size is.

PowerPoint 2.1 will not use the system 7.0 print model since it must also run on 6.0 systems.

not applicable

Slide Show Dialog Box

Advance to next slide:		OK
<input checked="" type="radio"/> Using rehearsed timing		Cancel
<input type="radio"/> Manually, by mouse click		Help...
<input type="radio"/> Automatically every <input type="text"/> seconds		
Start with slide <input type="text" value="1"/>		
<input checked="" type="checkbox"/> Use media	<input type="checkbox"/> Rehearse new slide timing	
<input type="checkbox"/> Repeat show until ⌘. is pressed		
Choose a Screen...		

The Slide Show dialog box has been augmented to handle the new variable timing feature and also enlarge-to-screen. When Rehearse is checked, the slide show is run with a small window showing each slide's time on the screen. These times are saved and used in a subsequent slide show by advancing "Using rehearsed timing". (A slide's new time is not saved if the option key is pressed when the mouse is clicked.)

The Use Media option (normally on) can be turned off to suppress sound & video.

The dialog expands to include the Choose a Screen button only on Macintosh systems with more than one display. (Same as 2.01.)

Interactively, two new slide show controls are available: pause and stop. Pause stops the automatic timer and also the playing of external media during the show. If the media are paused, giving the pause command again restarts. Stop also pauses the slide show, but aborts playing media completely.

Edit Menu

Edit

Undo	⌘Z
Cut	⌘H
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
Paste as Picture	
Crop Picture	
Create Publisher...	
Subscribe to...	
Subscriber Options...	
Omit Master	
Set as Title	
New Slide	⌘N

There are new commands for working with pictures and publications. Create Publisher and Subscribe To are standard Apple commands. They lead to the Edition Manager dialogs.


Subscribe is only available in slide views. It creates a picture which is a subscriber.

Create Publisher publishes the current slide in slide view, or the selected slide in sorters. Publishers are shown with borders in sorter views.

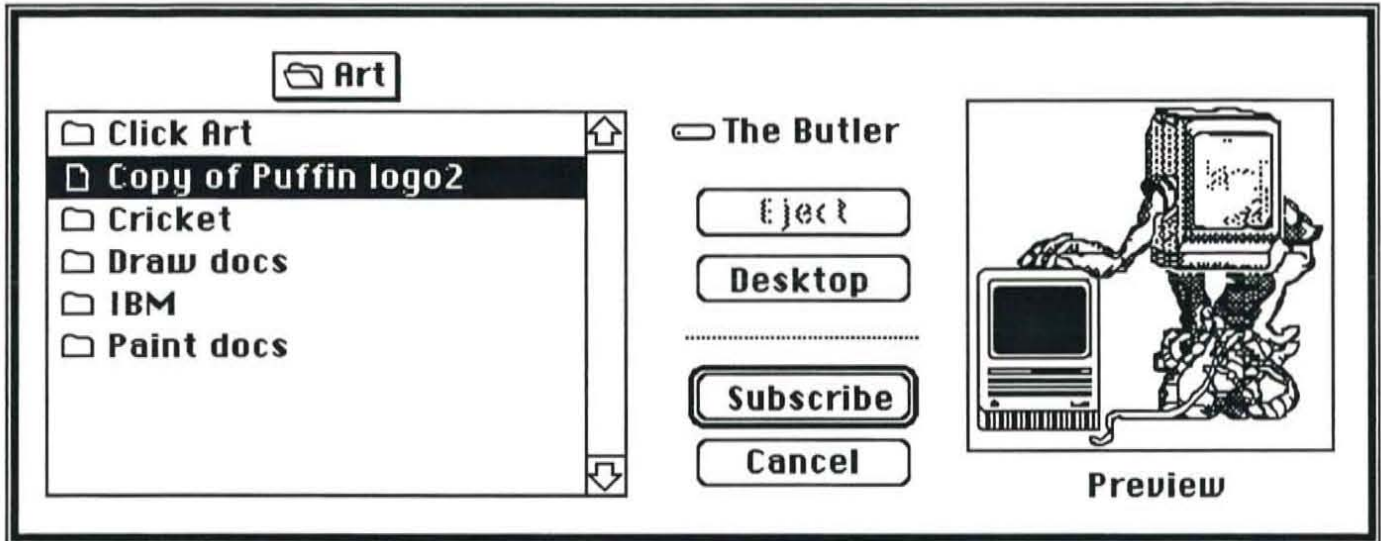
Subscriber Options changes its name according to the selection. If the selection is a subscriber, its name is Subscriber Options. If the selection is a publisher (or there is no selection and the current slide is a publisher) it reads Publisher Options. Dialogs for subscribers and publishers are standard Apple.

If the Edition Manager is not available in the system, i.e. it is a pre-7.0 system, the group is collapsed to just the Subscribe To command. It allows "subscribing" to a picture file (EPS, PICT, or MacPaint).

Crop Picture invokes the cropping cursor and allows cropping as the command key did in 2.0.

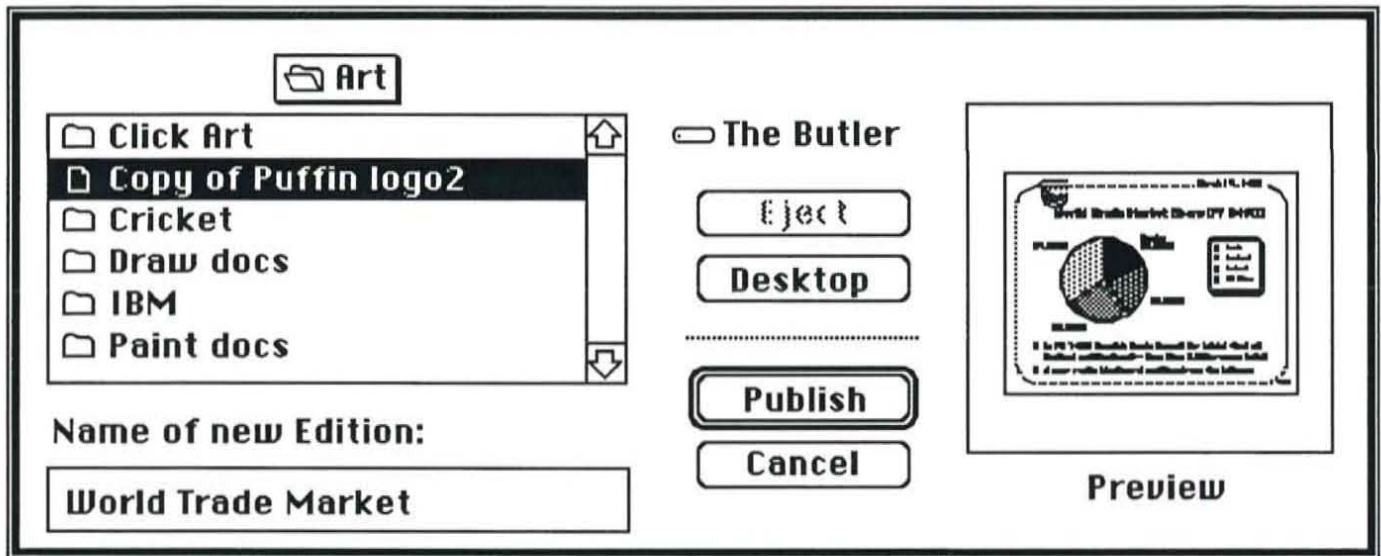
Cropping cursor: 

Subscribe Dialog Box



This is the standard Apple dialog for creating a subscriber.

Create Publisher Dialog Box



This is the standard Apple dialog for creating a publisher.

Subscriber Options Dialog Box

Subscriber to:

Mac Picture
Art
The Butler

Cancel Subscription

Find Publisher

Get Edition Now

Get New Editions: **Automatically** **On Request**

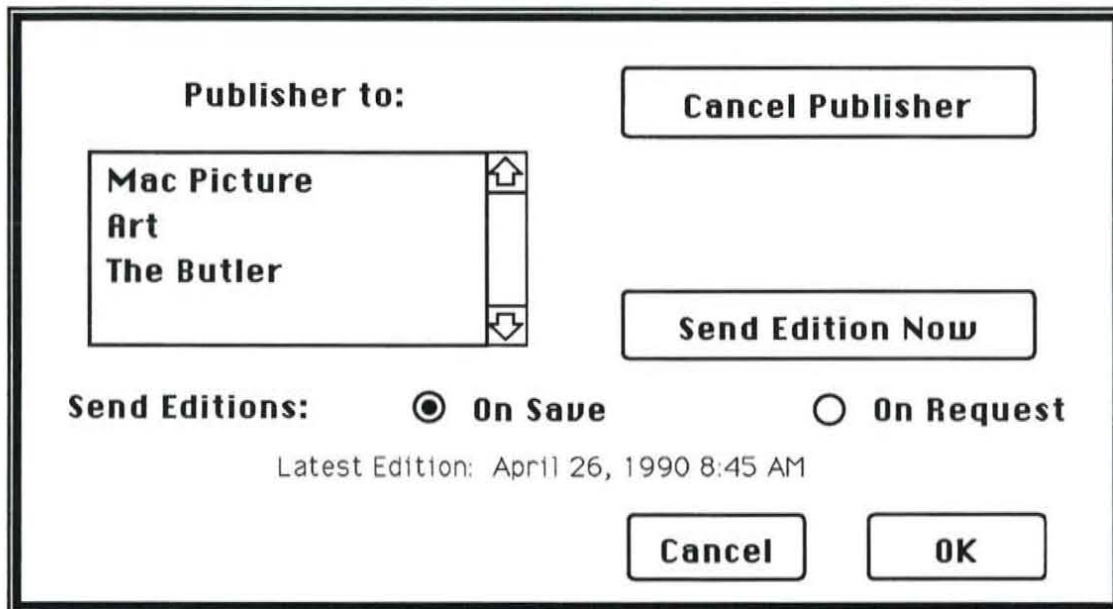
Latest Edition: April 26, 1990 8:45 AM

Cancel **OK**

Subscriber Options shows the Edition file location. The Find Publisher button switches to the publishing document, opened by the publishing application. Get Edition Now retrieves the latest available edition. Cancel Subscription turns the subscriber into an ordinary picture object.

The Subscriber Options dialog box is supplied by the Edition Manager.

Publisher Options Dialog Box



Publisher Options shows the Edition file location. Send Edition Now updates the edition file with from the current contents of the publisher. Cancel Publication turns the publisher into an ordinary slide.

The Publisher Options dialog box is supplied by the Edition Manager.

View Menu

View

Full Size
66% Size
50% Size
33% Size
Slides (#1) ⌘ D
Notes (#1) ⌘ E
Slide Master
Notes Master
Handout Page
Outline Sorter
Slide Sorter

The View menu is unchanged.

Style Menu



The main new item here is Positioning. It leads to a dialog box that allows numeric control of subscript/superscript position and also of letterspacing. Both of these functions can also be adjusted directly through the keyboard.

At the end of the menu is a new checkmark attribute to control typing of quotation marks.

Positioning Dialog

Letterspacing		<input type="button" value="OK"/>
<input type="radio"/> Normal		
<input checked="" type="radio"/> Condense	by <input type="text" value="5"/> %	<input type="button" value="Cancel"/>
<input type="radio"/> Expand		
Baseline		
<input type="radio"/> Normal		
<input checked="" type="radio"/> Superscript	by <input type="text" value="50"/> %	
<input type="radio"/> Subscript		

The Positioning command allows fine control over letterspacing and over the positioning of subscript and superscript text. Adjustments are made as a percentage of the normal position.

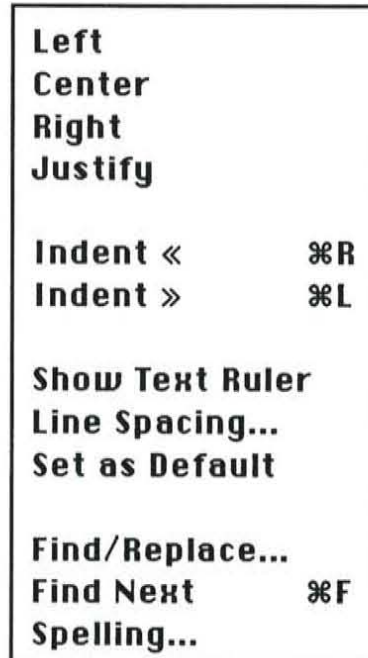
For baseline, the percentage is of normal line height for the font and size of the selection. Both superscript and subscript positioning have the side effect of reducing the nominal font size by a third.

For Letterspacing, the percentage is taken for each character cell in the font and size being used. Condensing by 5% will reduce the length of an arbitrary string of text by 5%.

Normal => blank
Movable modal?

Text Menu

Text



The Text menu is unchanged.

Line Spacing Dialog

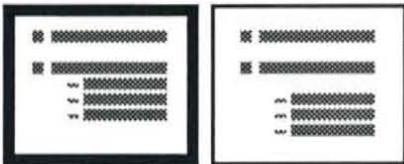
Set Line Spacing for All Indent Levels:

Between Lines % of Normal

Between Paragraphs % of Line Spacing

	1	2	3	4	5
Between Lines	<input type="text" value="100"/>	<input type="text" value="100"/>	<input type="text" value="100"/>	<input type="text" value="100"/>	<input type="text" value="100"/>
Between Paragraphs	<input type="text" value="150"/>	<input type="text" value="150"/>	<input type="text" value="150"/>	<input type="text" value="150"/>	<input type="text" value="150"/>

At a change to a deeper level, use:

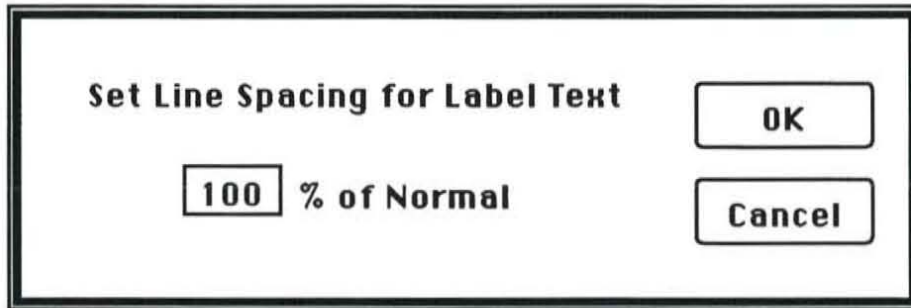


The line spacing dialog box is normally small and allows setting the line spacing for all indentation levels simultaneously. Pressing the large central button *Unfolds* the dialog box, revealing controls for setting spacing on an individual basis.

When the dialog is brought up on a text box that has individual settings, it is already unfolded. Filling in one of the all-levels settings at the top of the box, and then leaving the field, sets all the displays in the bottom to the same value.

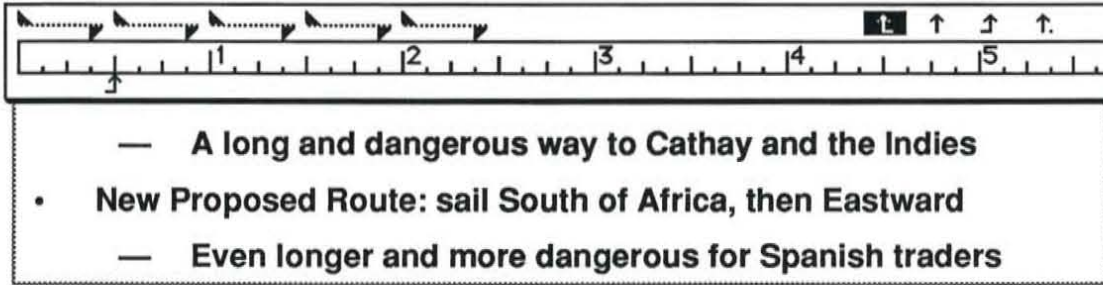
This is basically the proposal recently designed for Windows PowerPoint but postponed.

Line Spacing for Labels



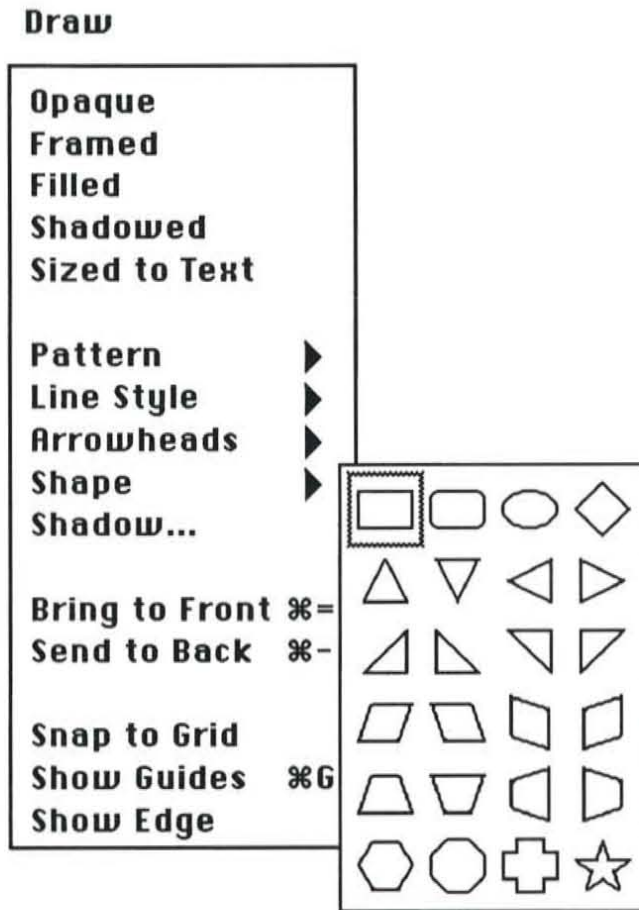
Label text does not word wrap and is divided into lines only by return characters. There is no distinction, therefore, between paragraph and line spacing. Likewise there are no levels of outline indention, so there is no option for the unfolding portion of the dialog.

New Text Ruler



The new text ruler operates the same way the old one did, but the appearance has been changed to be like the Microsoft Word ruler. Word places both tab markers and indent markers on the lower side of the scale, but this would be too hard to read with PowerPoint's five sets of indent markers so tabs and indents are on opposite sides. This ruler is exactly like the Windows PowerPoint ruler.

Draw Menu

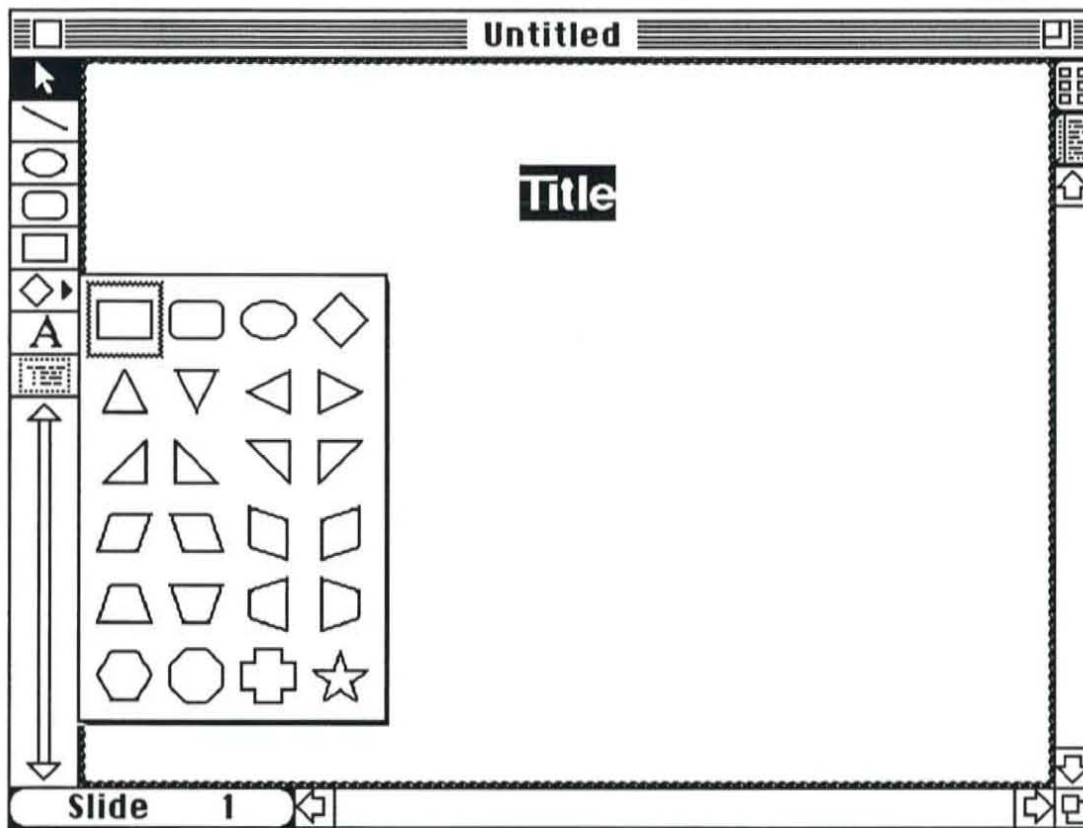


The Draw menu contains several new commands. The Shadow command allows adjustment for type, offset, and color of the shadow. This command replaces the shadow color selector on the Color menu.

The Shape command allows two-dimensional shapes to be substituted for one another. There is no way to set a default shape (item is dimmed when there is no selection), but the shape of selected objects can be changed by choosing from the submenu. Line styles, patterns, and colors apply to all shapes in the same way.

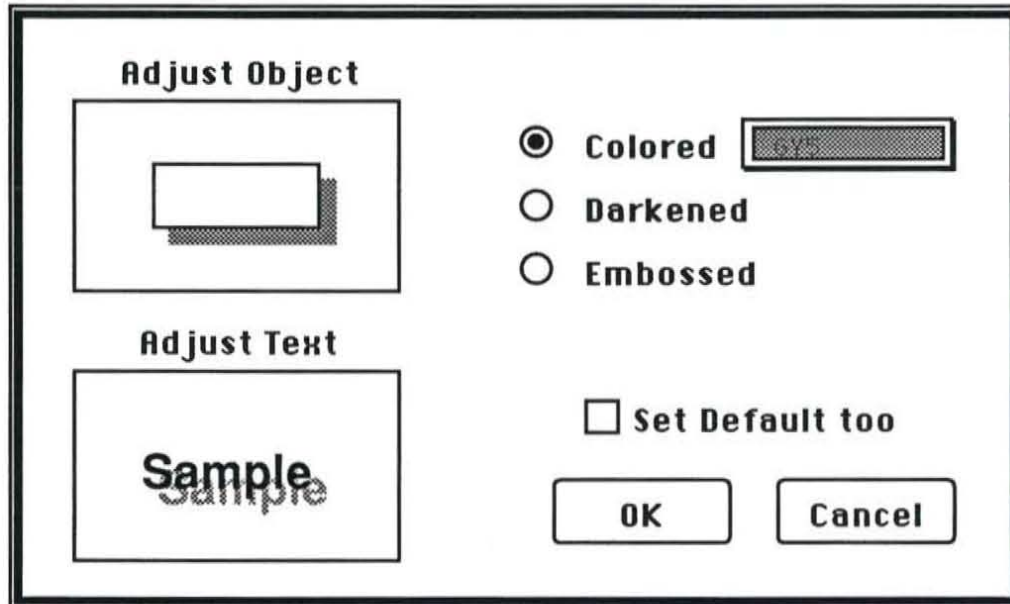
Bring to Front and Send to Back were moved here from the Edit menu in order to allow room for publication commands.

The Shape Tool



The appearance of the PowerPoint document window has changed only in the drawing tool palette, where the new shape tool appears. The currently selected shape is displayed, accompanied by the small triangle to show the presence of a popup. Clicking the tool engages the displayed shape. Leaving the mouse down slightly longer pops up the shapes submenu to allow changing the tool to create a different shape.

Shadow Dialog



The Shadow command replaces the shadow color on the Color menu. The dialog sets both the style and the offset of the shadow.

Shadows can be colored, in which case the popup chooses the color, or it can be simply darkened, which makes the shadow a darker image of what ever it is cast upon. (This effect does not work on PostScript printers.) Choosing a color selection from the popup automatically switches the radio button choice to Colored.

If the shadow style is embossed, a highlight is also drawn in the opposite direction that the shadow is drawn. The colors for the shadow and highlight are computed from the object fill color or the text color depending on which type of shadow is turned on.

The offset of object shadows and text shadows are set independently. It is adjusted by positioning the mouse over the Offset picture and dragging to achieve the effect you want.

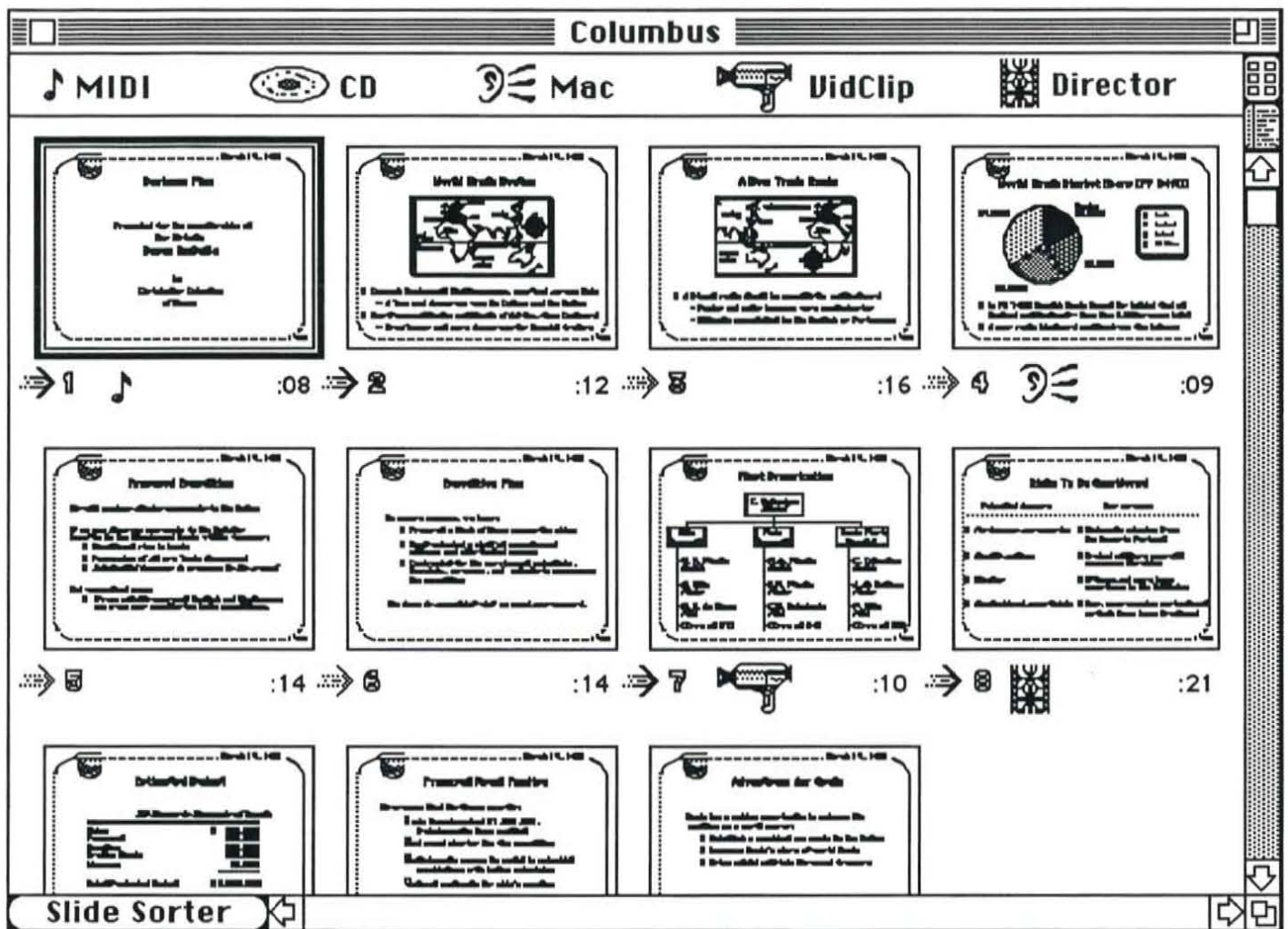
Color Menu

Color Menu



The Color menu is unchanged except that shadow color has been removed. It is now set from the Shadow command dialog box.

Multi-media Slide Sorter



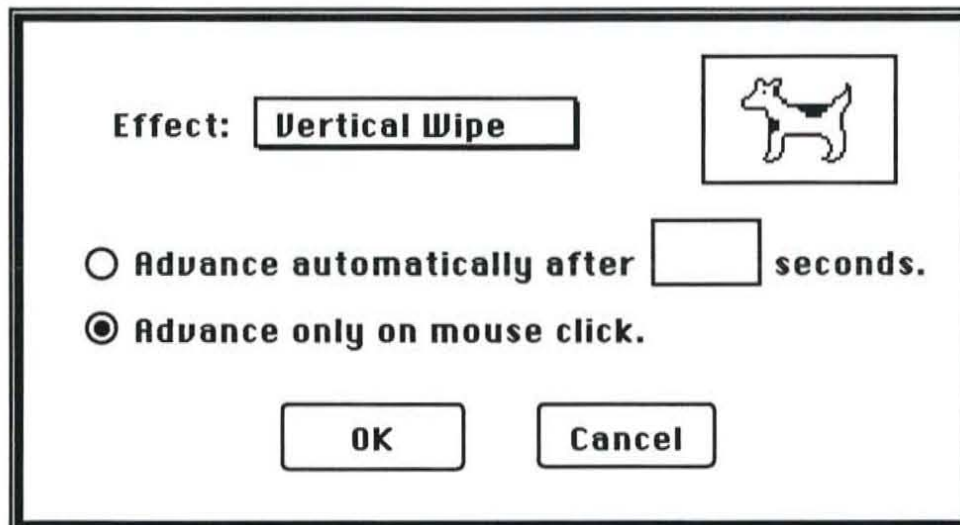
The slide sorter now shows a small icon for each media control resource across the top of the window. The icons are labelled. Both the icon and label are supplied by the media controller. PowerPoint tries to fit as many as possible into a row and will add additional rows if necessary. Media controllers reside in either the PowerPoint folder or the system folder.

A media icon can be dragged from the top bar onto a slide. Doing so invokes a dialog, supplied by the controller, in which the required event can be described. PowerPoint then displays the unlabelled icon below the slide. If a slide uses more media events than fit, additional rows of icons will open.

Once an icon appears under a slide, and be selected and opened to reviewer modify the event it denotes. The icon can also be dragged to another slide in the presentation, or it can be deleted. Only one media icon can be selected or dragged at one time.

Also under the image is the slide number and the rehearsed time. After the time is a transition icon. These can also be opened to set the transition type.

Transition Dialog



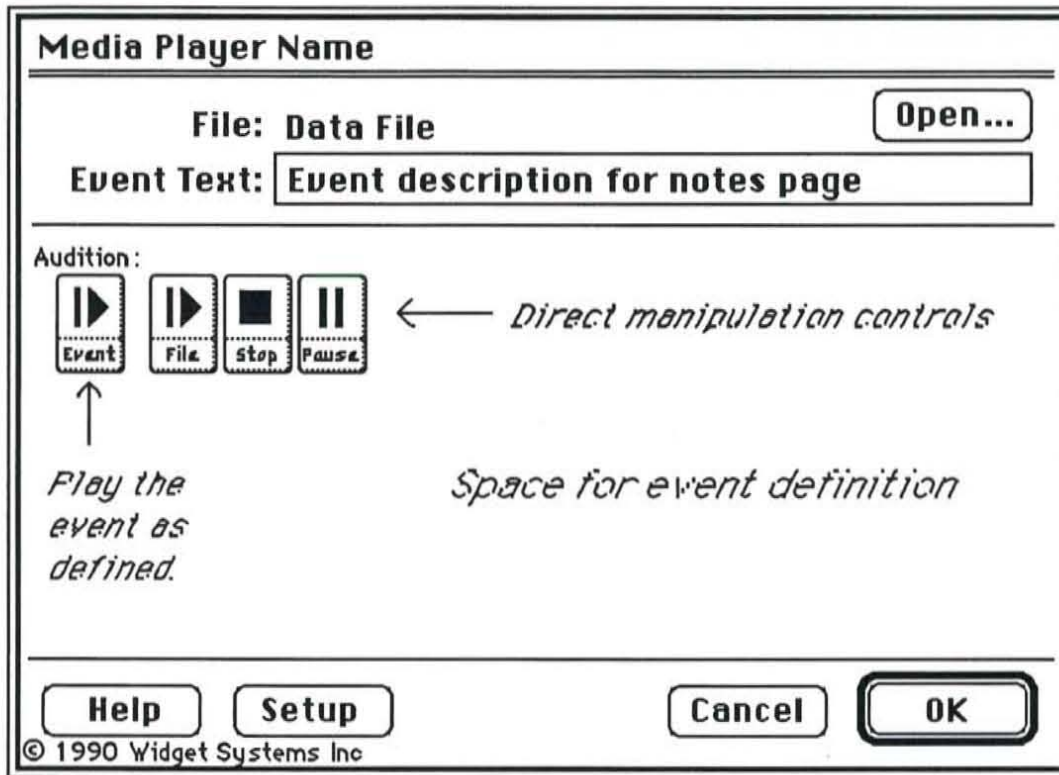
The Transition Dialog appears when a slide sorter transition icon is opened by double clicking or with the Open command. It controls the transition that takes place when a slide is displayed in PowerPoint's Slide Show. Double clicking the slide time also opens the dialog since time can be set here as well.

The transition can use a special effect such as fading, sliding, etc. One of these methods is chosen from the popup menu. Whenever a new choice is made, or whenever the picture at the right is clicked, the chosen effect is demonstrated on the small sample picture. Internally, the effects are implemented as named resources so that additional effects can be added by resource editing.

The slide's time on screen can be set directly here. This is an alternative to the rehearsal method performed with slide shows. If "Advance only on mouse click" is chosen, the slide will advance automatically only if the slide show is using fixed auto-advance. This is the default.

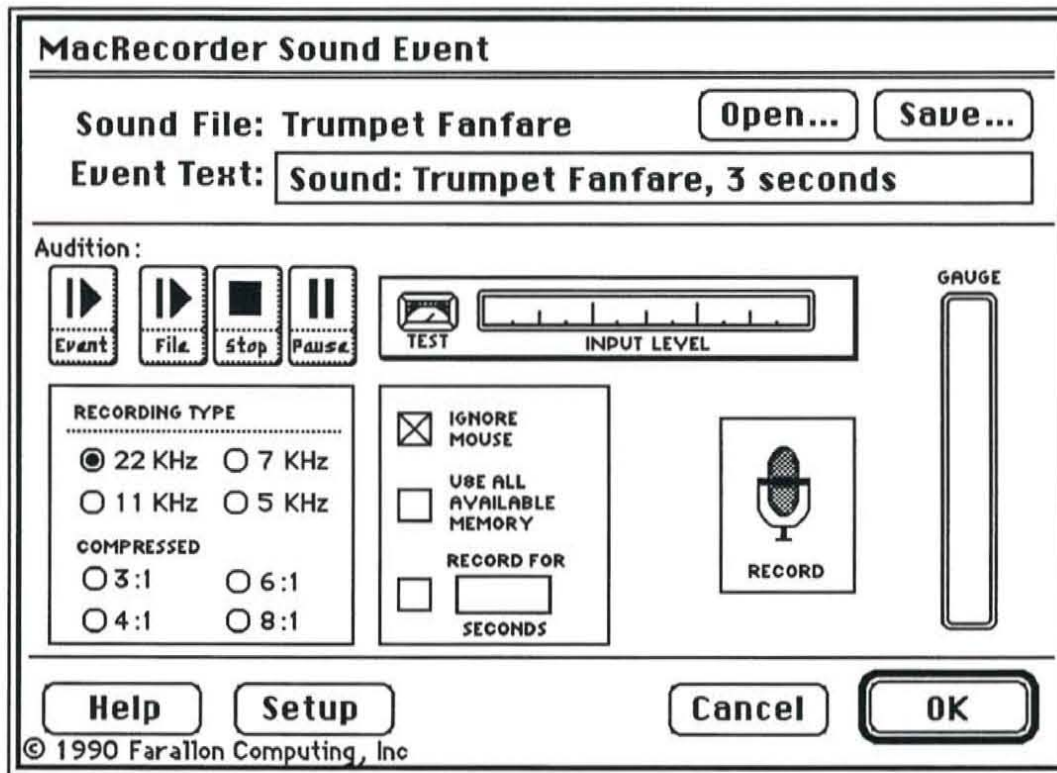
If timing is entered, it may be any number in the range 0..32767. Zero means that the slide should be changed as fast as possible. Fractional seconds are accepted, but timing is not guaranteed to be accurate.

Media Dialog Box Template



All the media event dialog boxes are designed to have a similar look. The picture above illustrates the model that all contractors have designed from.

Digitized Sound Dialog Box









Farallon is building our media controller for digitized sound. The dialog box they provide can not only select an existing sound file to be played, but can also record a new sound.


MIDI Media Dialog Box





MIDI File Event

MIDI File: **Over the Rainbow** Open...

Event Text: **MIDI: Over the Rainbow, 33 seconds**

Audition:      

Master Volume: 

Track	Vol.	Mute	Ch.	Prog.
Piano		<input type="checkbox"/>	1	125
Lead Guitar		<input type="checkbox"/>	-	33
Fill		<input checked="" type="checkbox"/>	4	-
Drums		<input type="checkbox"/>	9	8

Segment: Timing: End Point:

→ Start at bar: **4** Play Duration: **33** sec. Cut

→ Loop start: **4** Tempo Adjust: **100** % to Bar Line

→ Loop end: **6** Loops: **2** times to End

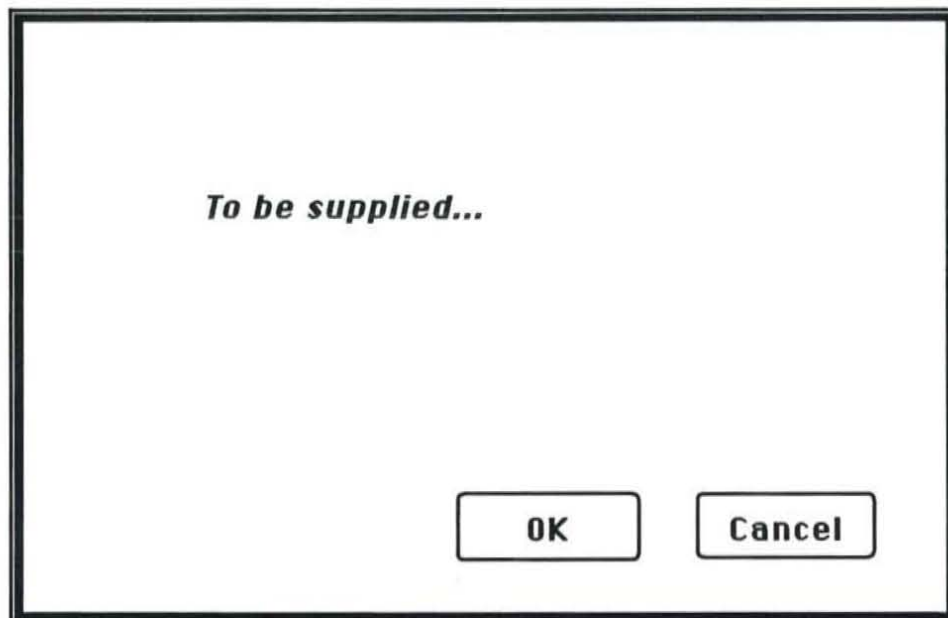
→ End at bar: **11** Loop Indefinitely Fade: **1.2** sec.

Help Setup Cancel OK

© 1990 Opcode Systems, Inc.

OpCode is building our MIDI media controller. The dialog box they provide can select an existing MIDI file and adjust its parameters to suit the purposes of the presentation.

Video Dialog Box












ARTI is building our Video media controller. The dialog box is not yet designed.

Keyboard Commands

Menu Shortcuts

⌘O	Open
⌘S	Save
⌘W	Close
⌘Q	Quit
⌘Z	Undo
⌘H	Cut
⌘C	Copy
⌘V	Paste
⌘A	Select All
⌘N	New Slide
⌘D	Slides
⌘E	Notes
⌘L	Indent «
⌘R	Indent »
⌘F	Find Next
⌘=	Bring to Front
⌘-	Send to Back
⌘[Align Left
⌘\	Align Right
⌘]	Align Center
⌘P	Plain text
⌘B	Bold
⌘I	Italic
⌘U	Underline

Text Editing

	Backspace or Clear
	Delete next character
	(Enter) Switch between graphics and text selection
	(Return) New paragraph or, in label, new line
	New line
⌘ ↑ <	Decrease font size
⌘ ↑ >	Increase font size
⌘ ⇧ <	Decrease letterspacing
⌘ ⇧ >	Increase letterspacing
⌘ ↑ ⇧ <	Lower baseline
⌘ ↑ ⇧ >	Raise baseline
	(Any one.) Move insertion point in arrow direction
	Extend selection in arrow direction
⌘ 	Move insertion point to extreme of text object
⇧ 	Move insertion point a word at a time

Miscellaneous

⌘ →	Next slide
⌘ ↑ →	Previous slide
Page Down	Next slide
Page Up	Previous slide
Home	First slide
End	Last slide
Esc	Cancel