

**TSMorph**

**COLLABORATORS**

	<i>TITLE :</i> TSMorph		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		January 6, 2023	

**REVISION HISTORY**

NUMBER	DATE	DESCRIPTION	NAME

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# Chapter 1

## TSMorph

### 1.1 TSMorph.guide

TSMorph 3.0 Contents

\*\*\*\*\*

Overview	Quick overview
Installation	Installation instructions
Requirements	Software and Hardware required
Parameters	Tool types and Shell parameters
Info Window	The information window
Control Window	The control window
Edit Windows	The point edit windows
Edit Modes	Point editing modes
Requesters	Requesters which appear
Interface	Changing the interface
File Format	Internal file formats

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ARexx	ARexx interface to TSMorph-render and TSMorph
Algorithms	Morphing algorithms
File Names	File naming
Error Messages	Error Messages
Bugs	Known (and unknown) errors
Hardware&Software	Hardware and Software used in development
History	Version History (since 2.0)
Hints & Tips	Some useful hints and tips
Distribution	Copyright and distribution requirements
Index	The index for this guide

## 1.2 TSMorph.guide/Overview

Quick overview

\*\*\*\*\*

For a quick tutorial see Tutorial/Tutorial.readme  
"Tutorial/Tutorial.readme/Main").

TSMorph is a set of morphing programs. It consists of two programs:

TSMorph	Edit the Morph parameters
TSMorph-render	Generate the morphed images

TSMorph is used to create a  
parameter file  
which is used by  
TSMorph-render to produce the morphed images. TSMorph-render works with  
24 bit internally. Run times can be about 3 seconds per frame for a  
150x150 image on a 28Mhz 68040 - See  
Benchmarks

---

TSMorph-render can be used to morph one image to another in a set number of frames with a number of control points, just distort one image with control points. It can also be used to morph or warp a series of images (e.g. to morph between two animations). When TSMorph is run without parameters it will display an ASL file requester for a file created by TSMorph, it will then create the images, displaying a

Progress Requester

on the default (or named) public screen allowing the process to be interrupted and/or stopped.

ARexx

scripts are run before and after each image is processed, and also

before each image is loaded. These allow the changing of movement and colour to be controlled along with the ability to only generate some frames, and also pre and post image processing (e.g. to change to a non-24-bit format and build an animation).

TSMorph is used to generate the parameter file . When run it displays an

Information Window

on a public screen. This allows the input of the file names to morph between, the number of frames, the start frame, the output file names, and the type of morph (single or dual images) to be changed.

It also allows the editing of control points on the images. The images (most image formats can be loaded - See

OPENMODE

) are displayed on a

public screen in resizable, scrollable windows

.

When the images are displayed control points can be edited in various

modes

. These modes allow the addition, deletion, linking and unlinking of the control points.

Context sensitive help is displayed using amigaguide (if available). The Help key can be pressed in the gadgets, over the gadgets, on menus or anytime a window is active.

TSMorph is ©1993/94 Topicsave Limited.

The author can be contacted by EMail as mark@topic.demon.co.uk or mpaddock@cix.compulink.co.uk.

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## 1.3 TSMorph.guide/Installation

Installation instructions

\*\*\*\*\*

If you wish to use Installer then TSMorph can be installed using the supplied script. If not then the following is a description of what the script does.

- \* 1) Make a new drawer for the executables - default Work:TSMorph,
- \* 2) Copy TSMorph, TSMorph-render, TSMorph.doc, TSMorph.guide, TSMorph-prefs and the Rexx drawer and its contents and all their icons to the drawer created in 1) above (if you have a 68020/030 with 68881/2 then copy the FPU version TSMorph-render.881 and rename it as TSMorph-render instead of copying TSMorph-render, or if you have a 68040 then copy the 040 version TSMorph-render.040 and rename it as TSMorph-render instead of copying TSMorph-render)
- \* 3) If required copy the Brush and Cursor drawers and contents.
- \* 4) Make new drawers ENVARC:TSMorph and ENV:TSMorph,
- \* 5) Copy the default Icons to the directories created above.
- \* 6) Amend your s:user-startup to assign TSMorph: to the drawer created in step 1).
- \* 7) Manually perform the assign in step 6).
- \* 8) If you are running system version 3.0 (or greater) change the default tool for TSMorph.guide to MultiView.
- \* 9) If required copy the Tutorial directory to TSMorph:.
- \* 10) If required copy the HTML directory to TSMorph:, also copy the View\_HTML icon and use an editor to make the file contain:

```
CD HTML
Path:Mosaic file://localhost/TSMorph:html/TSMorph.html
```

Where Path:Mosaic is the location of your version of Mosaic.

The following files are included in this distribution:

COPYING	GNU General Public License
TSMorph-render.881	The rendering program 68020/68881 version
TSMorph-render.881.info	Icon
TSMorph-render.040	The rendering program 68040 version
TSMorph-render.040.info	Icon
TSMorph	The parameter set up program
TSMorph.info	Icon
TSMorph-prefs	Preferences editor
TSMorph-prefs.info	Icon
TSMorph-render	The rendering program
TSMorph-render.info	Icon

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TSMorph.doc	Documentation in plain text format
TSMorph.doc.info	Icon
TSMorph.guide	Documentation in amigaguide format
TSMorph.guide.info	Icon
Install	Installation script for Installer
Install.info	Icon
Installer	Commodore Installer
Read.Me	Short read me file
Read.Me.info	Icon
View_HTML.info	Icon
HTML/#?	.html files
HTML/Images/#?	.html images
Env.info	Icon
Env/TSMorph.info	Icon
Env/TSMorph/def_points.info	Default project Icon
Env/TSMorph/def_bw16.info	Default 16 colour grey Icon
Env/TSMorph/def_bw256.info	Default 256 colour grey Icon
Env/TSMorph/def_ham6.info	Default HAM 6 Icon
Env/TSMorph/def_ham8.info	Default HAM 8 Icon
Env/TSMorph/def_dctv3.info	Default DCTV 3 plane Icon
Env/TSMorph/def_dctv4.info	Default DCTV 4 plane Icon
Env/TSMorph/def_iff.info	Default OpalVision IFF Icon
Env/TSMorph/def_ilbm.info	Default 24 bit ILBM Icon
Env/TSMorph/def_jpg.info	Default OpalVision JPEG Icon
Env/TSMorph/def_ppm.info	Default PPM Icon
Env/TSMorph/def_prefs.info	Default prefs Icon
Rexx.info	Icon
Rexx/FadeToBlack.TSM	Example prescript script
Rexx/FadeToBlack.TSM.info	Icon
Rexx/FadeToWhite.TSM	Example prescript script
Rexx/FadeToWhite.TSM.info	Icon
Rexx/Loadscript.TSM	Example loadscript script
Rexx/Loadscript.TSM.info	Icon
Rexx/PixelMorph.TSM	Example prescript script
Rexx/PixelMorph.TSM.info	Icon
Rexx/PixelWarp.TSM	Example prescript script
Rexx/PixelWarp.TSM.info	Icon
Rexx/PostAnim.TSM	Example postscript script
Rexx/PostAnim.TSM.info	Icon
Rexx/Postscript.TSM	Example postscript script
Rexx/Postscript.TSM.info	Icon
Rexx/PreAll.TSM	Example prescript script
Rexx/PreAll.TSM.info	Icon
Rexx/PreAnim.TSM	Example preview script
Rexx/PreAnim.TSM.info	Icon
Rexx/Prescript.TSM	Example prescript script
Rexx/Prescript.TSM.info	Icon
Rexx/Preview.TSM	Example preview script
Rexx/Preview.TSM.info	Icon
Rexx/ToHam.TSM	Example postscript script
Rexx/ToHam.TSM.info	Icon
Tutorial.info	Icon
Tutorial/cat.pic	Cat IFF image
Tutorial/girl.pic	Girl IFF image
Tutorial/Tutorial.readme	Tutorial instructions
Tutorial/Tutorial.readme.info	Icon
Brush.info	Icon

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Brush/1st	Brush
Brush/1st.info	Icon
Brush/Add	Brush
Brush/Add.info	Icon
Brush/Del	Brush
Brush/Del.info	Icon
Brush/Goto	Brush
Brush/Goto.info	Icon
Brush/Last	Brush
Brush/Last.info	Icon
Brush/Link	Brush
Brush/Link.info	Icon
Brush/Next	Brush
Brush/Next.info	Icon
Brush/None	Brush
Brush/None.info	Icon
Brush/one	Brush
Brush/one.info	Icon
Brush/Prev	Brush
Brush/Prev.info	Icon
Brush/Rel	Brush
Brush/Rel.info	Icon
Brush/Two	Brush
Brush/Two.info	Icon
Brush/Unlink	Brush
Brush/Unlink.info	Icon
Cursor.info	Icon
Cursor/XAdd	Pointer
Cursor/XAdd.info	Icon
Cursor/XDel	Pointer
Cursor/XDel.info	Icon
Cursor/XL1	Pointer
Cursor/XL1.info	Icon
Cursor/XL2	Pointer
Cursor/XL2.info	Icon
Cursor/XMov	Pointer
Cursor/XMov.info	Icon
Cursor/XOne	Pointer
Cursor/XOne.info	Icon
Cursor/XRel	Pointer
Cursor/XRel.info	Icon
Cursor/XTwo	Pointer
Cursor/XTwo.info	Icon
Cursor/XU1	Pointer
Cursor/XU1.info	Icon
Cursor/XU2	Pointer
Cursor/XU2.info	Icon

## 1.4 TSMorph.guide/Requirements

Software and Hardware required

\*\*\*\*\*

The following libraries (with minimum version) are required to run

---

TSMorph:

```

intuition.library      37
iffparse.library      37
graphics.library      37
layers.library        37
gadtools.library      37
asl.library           37
utility.library       37
diskfont.library     36
icon.library          37
rexsyslib.library    0

```

The following will also be used if present:

```

amigaguide.library    34
dctv.library          3
opal.library          0 Note: OpalVision board is not required
reqtools.library      38 reqtools is ©1991/1992 Nico François
                        This is required for Animated Warps/Morphs
nofrag.library        2 nofrag is © Copyright 1991 Jaba Development.
egs.library           0 EGS is © Copyright 1990/93 VIONA Development.
egsintui.library      0
egsgfx.library        0
egsrequest.library    0

```

TSMorph-render requires a large amount of chip memory (or opal.library). If you have 1Mb then 512x512 images can be morphed (though you may have to run workbench on a 2 colour 640x200 screen). 640x512 is probably impossible without 2Mb of chip memory.

The amount of chip memory required by TSMorph can be reduced to 1/5 by setting the

```

        ZOOM
        parameter to OFF.

```

## 1.5 TSMorph.guide/Par

Tool types and Shell parameters

\*\*\*\*\*

Both TSMorph and TSMorph-render can be run from the Shell or the Workbench. Most parameters can be edited using the

```

        Settings
        menu.

```

Note: TSMorph and TSMorph-render both require a stack size of more than 4096. 8192 should be OK. If the stack is not set large enough then the programs will probably just crash.

Parameters can be supplied, normally either on the Shell command line, as Icon Tool Types on the Project, TSMorph or TSMorph-render Icon, or in a settings file.



The format of settings files is a text file with lines in the format:

```
Settingstype=settingsvalue
```

Blank lines or lines starting with a ; (semi-colon) are treated as comments. Any settings supplied on the Shell command line or as an Icon Tool Type override values specified in this file. Parameters on the Project Icon override parameters on the Tool Icon.

Note: All the Project Icon tool types are used if the project is run with a default tool or by double clicking a tool, some are not used if the project is selected using a file requester, if the Tool was run from the Shell then file requester selected project tool types are ignored. Also some settings can not be changed on open projects,

The Settings file name used is first file found from:

- 1) The name supplied in the SETTINGS= parameter on the project.
- 2) The name supplied in the SETTINGS= parameter on the tool.
- 3) TSMorph.prefs  
in the project directory for the workbench,  
the current directory from the Shell.
- 4) TSMorph.prefs  
in the directory TSMorph was loaded from.
- 5) ENV:TSMorph/TSMorph.prefs

Unless

```
KEEPSETTINGS
```

```
is set to NO current settings are saved in
```

```
ENV:TSMorph/TSMorph.prefs when TSMorph is quit. Settings can be saved  
and loaded from the
```

```
Settings  
menu.
```

```
TSMorph-prefs
```

```
Preferences editor
```

```
TSMorph
```

```
Parameters to TSMorph
```

```
TSMorph-render
```

```
Parameters to TSMorph-render
```

## 1.6 TSMorph.guide/Par-TSMorph

```
Parameters to TSMorph
```

```
=====
```

The following parameters can be supplied, normally either on the Shell command line, as Icon Tool Types on the Project or TSMorph Icon, or in

a settings file:

CHANGEPALETTE	Change screen palette to match image
CREATEICONS	Create project Icons
CREATEICONSP	Create prefs Icons
CUSTOMDEPTH	Custom screen depth
CUSTOMMODE	Custom screen mode
EGS	Use EGS for image windows
FILES	Specify file to open
HELP	Display continuous help
KEEPSETTINGS	Save settings on Quit
OPENMODE	How to open images
PREVIEW	ARexx script to preview image
PUBSCREEN	Public screen to use
REQTOOLS	Use Reqtools.library?
SETTINGS	Settings file name
ZOOM	Zoom image 2 times

## 1.7 TSMorph.guide/P-CHANGEPALETTE

CHANGEPALETTE=YES/NO/OFF

-----

---

Sets the default value of the Change Palette? settings menu item - defaults to YES.

This item toggles if each images palette should be used to display the image when the window is active. Each image window can have its own palette. This option operates with the

OPENMODE  
parameter.

Since the ability to change screens colour palettes is not supported by CBM this menu option can be disabled by setting this parameter to OFF.

## 1.8 TSMorph.guide/P-CREATEICONS

CREATEICONS=YES/NO  
-----

Sets the default value of the Create Icons? settings menu item - defaults to YES.

This item toggles if Icons are to be saved with  
parameter files

. If it

is selected then an Icon will be saved. The icon will come from ENV:TSMorph/def\_points if this exists, secondly from ENV:SYS/def\_points, otherwise the default project Icon is used.

This parameter is not changed by Requester loaded projects.

## 1.9 TSMorph.guide/P-CREATEICONSP

CREATEICONSP=YES/NO  
-----

Sets the default value of the Create Prefs Icons? settings menu item - defaults to YES.

This item toggles if Icons are to be saved with  
Settings

files. If it is

selected then an Icon will be saved. The icon will come from ENV:TSMorph/def\_prefs if this exists, secondly from ENV:SYS/def\_prefs, otherwise the default project Icon is used.

---

## 1.10 TSMorph.guide/P-CUSTOMDEPTH

```
CUSTOMDEPTH=4
```

-----  
This gives the depth of the custom screen to open if  
CUSTOMMODE  
is  
specified.

It can be changed using the menu item (if reqtools.library is available), a requester is displayed allowing the input of the screen mode, but any change is ignored until TSMorph is reloaded.

The default value is 4.

## 1.11 TSMorph.guide/P-CUSTOMMODE

```
CUSTOMMODE=screen_mode
```

-----  
This gives the mode of the custom screen to open.

The mode is as show in the Screen Mode requester - case is ignored (e.g. "PAL:Low Res"). This parameter is not changed by Requester loaded projects.

The name of the screen must be given by the  
PUBSCREEN  
parameter. The  
depth is given by the  
CUSTOMDEPTH  
parameter. The screen will mostly  
clone the Workbench, but other colours will be set up as a grey scale.

It can be changed using the menu item (if reqtools.library is available), a requester is displayed allowing the input of the screen mode, but any change is ignored until TSMorph is reloaded.

The default value is nothing which means do not open a custom screen.

## 1.12 TSMorph.guide/P-EGS

```
EGS=YES/NO
```

-----  
This controls the use of EGS when displaying the  
edit

---

windows. See  
requirements  
for library requirements. If set to yes then the  
edit  
windows and relevent  
error  
requesters are displayed on the default EGS  
screen.

ZOOM  
is always set to OFF when using EGS.  
OPENMODE  
may also be ignored  
in some circumstances.

This parameter is not available as a menu option, is not saved in  
settings files and can not be specified on a project Icon.

Default values is NO.

### 1.13 TSMorph.guide/P-FILES

FILES=filename  
-----

This is only relevant to the Shell, only one name can be supplied -  
default is to open a new unnamed project.

### 1.14 TSMorph.guide/P-HELP

HELP=YES/NO  
-----

Sets the default value of the Continuous Help? settings menu item -  
defaults to NO.

This option has more effect when running release 3.0 or later. When set  
to YES help is continuously displayed using amigaguide (if available).

### 1.15 TSMorph.guide/P-KEEPSETTINGS

KEEPSETTINGS=YES/NO  
-----

---

Sets the default value of the Keep Settings? settings menu item - defaults to YES.

By default current settings are saved in ENV:TSMorph/TSMorph.prefs when TSMorph is quit. This parameter and menu item enable this behaviour to be turned off.

## 1.16 TSMorph.guide/P-OPENMODE

OPENMODE=ALWAYS/IFILBM/IFCOLOURS/REMAP/OPAL

-----

This parameter and menu item specify how images should be loaded for displaying by TSMorph.

- \* ALWAYS - Only try and load normal ILBM images. Fail if not.  
The  
CHANGEPALETTE  
parameter has an affect on the image display.
- \* IFILBM - First try to load as an ILBM image, load and remap the image if the image is not an ILBM or has 24 planes.
- \* IFCOLOURS - As IFILBM but remap if the number of planes in the image exceed the number of the screen.
- \* REMAP - Loads most ILBM (including 24 bit, EHB, HAM6, HAM8 and DCTV (with dctv.library [REMAP needs to be specified to correctly display DCTV images]), JPEG, TARGA, PPM and GIF. For JPEG if  
CHANGEPALETTE=YES or NO  
and the screen (see  
PUBSCREEN  
) has  
more than 2 bit planes then the image is remapped to a dynamic  
type  
palette  
. Otherwise the image is remapped to the screen  
palette. If this fails then opal.library will be used (if  
present). This may be required for some JPEGs.
- \* OPAL - Always use opal.library to load the image. This is probably only useful to load images in Opal FAST IFF format. The images are remapped to the current palette.

When loading and remapping complex images a requester is displayed with a title of Loading Image, a text gadget giving progress messages, a Pass gadget, and a third progress gadget. There is no way of interrupting the load process.

For slow machines it is suggested that you convert the images to ILBMs and specify ALWAYS.

---

## 1.17 TSMorph.guide/P-PREVIEW

```
PREVIEW=scriptname
```

-----

This specifies the name of an  
ARExx  
script to run to preview the  
rendered image.

The default script is Rexx/Preview.

The version supplied renders the image as a 16 colour grey scale with a resolution of about 128/64 and displays it.

It can be changed using the menu item (if reqtools.library is available), a requester is displayed allowing the input of the value.

## 1.18 TSMorph.guide/P-PUBSCREEN

```
PUBSCREEN=pubscreenname
```

-----

This gives the name of the Public Screen on which to open all TSMorph windows - default is the default public screen.

This parameter is not changed by Requester loaded projects.

It can be changed using the menu item (if reqtools.library is available), a requester is displayed allowing the input of the screen name, but any change is ignored until TSMorph is reloaded.

If

```
CUSTOMMODE
```

```
is supplied as well then a public screen of this name is  
opened.
```

## 1.19 TSMorph.guide/P-REQTOOLS

```
REQTOOLS=YES/NO/ALL
```

-----

This controls the use of reqtools.library. If set to NO then reqtools will not be used (except in very unusual circumstances). It will still

---

however be opened and closed. If set to YES then reqtools will be used for various requesters. If set to ALL then it will be used for the File Requesters as well.

This parameter is not available as a menu option, is not saved in settings files and can not be specified on a project Icon.

Default values is YES.

## 1.20 TSMorph.guide/P-SETTINGS

SETTINGS=filename  
-----

This can only be supplied on the Shell command line, or an Icon Tool Type. It specifies the name of a file for more parameters. See

parameters  
.

This parameter is not changed by Requester loaded projects.

## 1.21 TSMorph.guide/P-ZOOM

ZOOM=YES/NO/OFF  
-----

Sets the default value of the Zoom? settings menu item. If set to YES then images will be initially displayed 2x normal size, if set to NO then images will be initially displayed normal size, setting to OFF disables the Zoom? option, this reduces chip memory usage to 1/5 - defaults to NO.

## 1.22 TSMorph.guide/Par-TSMorph-render

Parameters to TSMorph-render  
=====

The following parameters can be supplied, normally either on the Shell command line, as Icon Tool Types on the Project or TSMorph-render Icon, or in a settings file:

ANTI\_ALIAS

Anti-Alias the output files

---



---

CREATEICONS	Create image Icons
DEPTH	Depth for search algorithm
DX	Horizontal Pixelation
DY	Vertical Pixelation
EGS	Render to EGS window as well
FILES	Specify file to open
INTEGER	Integer render calculation
LOADSCRIPT	Script before each image loaded
MODE	Mode for rendering algorithm
POSTSCRIPT	Script after rendering frame
PRESCRIPT	Script before rendering frame
PUBSCREENR	Public screen to use
QUALITY	JPEG Quality
REQTOOLS	Use Reqtools.library?
SAVEFORMAT	Format to save images
SETTINGS	Settings file name
TOOLPRI	Priority of TSMorph-render

---

## 1.23 TSMorph.guide/P-ANTIALIAS

ANTIALIAS=NO/YES

-----

This parameter and menu item select if the output files should be Anti-Aliased. Setting to YES can improve the quality of the images but will slow down the rendering process.

This parameter is ignored if  
     INTEGER  
     is set to YES.

Default value is NO.

## 1.24 TSMorph.guide/P-CREATEICONS

CREATEICONS=NO/YES

-----

This parameter and menu item selects if Icons are to be saved with image files. If it is YES then an Icon will be saved. The icon depends on the

    save format

    .

ENV:TSMorph/def\_bw16 - 16 colour grey scale images  
 ENV:TSMorph/def\_bw256 - 256 colour grey scale images  
 ENV:TSMorph/def\_ham6 - HAM 6 images  
 ENV:TSMorph/def\_ham8 - HAM 8 images  
 ENV:TSMorph/def\_dctv3 - DCTV 3 plane images using dctv.library  
 ENV:TSMorph/def\_dctv4 - DCTV 4 plane images using dctv.library  
 ENV:TSMorph/def\_iff - 24 bit ILBM saved using opal.library  
 ENV:TSMorph/def\_ilbm - 24 bit ILBM saved without opal.library  
 ENV:TSMorph/def\_jpg - JPEG files saved using opal.library  
 ENV:TSMorph/def\_ppm - PPM files

If the file does not exist then ENV:SYS/def\_ilbm (etc.) is tried, if this does not exist then the default project Icon is used.

Default value is NO.

## 1.25 TSMorph.guide/P-DEPTH

DEPTH=number

-----

This parameter indicates how deep the Morphing

---

algorithm  
should search

to find the points to use for morphing. The maximum value is 20 (higher values are accepted but will be taken as 20).

Default value is 2.

It can be changed using the menu item (if reqtools.library is available), a requester is displayed allowing the input of the value.

## 1.26 TSMorph.guide/P-DX

DX=number  
-----

This parameter can be used to speed up the rendering process. The default value is 0.

If set to a number then only some Horizontal pixels will be generated. e.g. if set to 3 then only every 4th pixel will be generated. The others will be copied from the previous pixel. This can be overridden by using

ARexx  
. Also see  
DY  
.

It can be changed using the menu item (if reqtools.library is available), a requester is displayed allowing the input of the value.

## 1.27 TSMorph.guide/P-DY

DY=number  
-----

This parameter can be used to speed up the rendering process. The default value is 0.

If set to a number then only some Vertical pixels will be generated. e.g. if set to 1 then only every other line will be generated. The others will be copied from the previous line. This can be overridden by using

ARexx  
. Also see  
DX  
.

It can be changed using the menu item (if reqtools.library is

---

available), a requester is displayed allowing the input of the value.

## 1.28 TSMorph.guide/P-EGS-R

EGS=YES/NO

-----

By default TSMorph-render does not show its output when rendering. If this parameter is set to YES then output will be displayed in an EGS window on the default EGS screen a line at a time. See requirements for library requirements.

This parameter is not available as a menu option, is not saved in settings files and can not be specified on a project Icon.

Default values is NO.

## 1.29 TSMorph.guide/P-FILES-R

FILES=filename

-----

This is only relevant to the Shell, only one name can be supplied - default is to show an ASL file requester for the file to run.

## 1.30 TSMorph.guide/P-INTEGGER

INTEGGER=NO/YES

-----

This parameter and menu item select if the render process should use integer or floating point arithmetic. The process will be faster if integer arithmetic is used (especially on machines without an FPU). However the output quality will not be so good.

If this parameter is set to YES then the ANTIALIAS parameter is ignored.

Default value is NO.

---

### 1.31 TSMorph.guide/P-LOADSCRIPT

```
LOADSCRIPT=Scriptname/OFF
```

-----

This specifies the name of an  
 ARexx  
 script to run before each image 24  
 bit image is loaded. This can be used to e.g. hold the images on disc  
 in JPEG format to save space and convert each image back to 24 bit ILBM  
 when required. Note however that TSMorph-render now has the ability to  
 load a large variety of image formats (All ILBM including HAM6, HAM8,  
 EHB, and DCTV with `dctv.library`, JPEG, TARGA, PPM, and GIF).

The default script is REXX/Loadscript  
 "REXX/Loadscript.TSM/Main").

The version supplied does nothing.

Set to OFF to run no script.

It can be changed using the menu item (if `reqtools.library` is  
 available), a requester is displayed allowing the input of the value.

### 1.32 TSMorph.guide/P-MODE

```
MODE=0-31
```

-----

This parameter and menu item indicate how the Morphing  
 algorithm  
 should  
 search to find the points to use for morphing.

The values are additive:

- 1 : Leaves un-triangled point stationary
- 2 : Searches all the closest points
- 4 : Uses a squaring algorithm to find close points
- 8 : Uses a Delaunay algorithm to find triangles
- 16: Precalculate close points

Default value is 0.

### 1.33 TSMorph.guide/P-POSTSCRIPT

```
POSTSCRIPT=Scriptname/OFF
```

-----

---

This specifies the name of an  
    ARexx  
        script to run after each image is  
rendered. This can be used to build an animation or change the image  
format from 24 bit.

The default script is REXX/Postscript  
"REXX/Postscript.TSM/Main"}.

The version supplied does nothing.

Set to OFF to run no script.

It can be changed using the menu item (if reqtools.library is  
available), a requester is displayed allowing the input of the value.

### 1.34 TSMorph.guide/P-PRESCRIPT

```
PRESCRIPT=Scriptname/OFF
```

-----  
This specifies the name of an  
    ARexx  
        script to run before each image is  
rendered. This can be used to produce only some of the frames and  
control the movement and colour of the images.

The default script is REXX/Prescript  
"REXX/Prescript.TSM/Main"}.

The version supplied does nothing.

Set to OFF to run no script.

It can be changed using the menu item (if reqtools.library is  
available), a requester is displayed allowing the input of the value.

### 1.35 TSMorph.guide/P-PUBSCREENR

```
PUBSCREENR=pubscreenname
```

-----  
This gives the name of the Public Screen on which to open  
TSMorph-render windows - default is the default public screen.

It can be changed using the menu item (if reqtools.library is  
available), a requester is displayed allowing the input of the screen  
name.

---

### 1.36 TSMorph.guide/P-QUALITY

QUALITY=number  
-----

This specifies the quality of output files. This option only applies if opal.library is available and

SAVEFORMAT

is JPEG or JPEGT. Possible

values are 0 to 100.

Default value is 75.

It can be changed using the menu item (if reqtools.library is available), a requester is displayed allowing the input of the value.

### 1.37 TSMorph.guide/P-REQTOOLS-R

REQTOOLS=YES/NO/ALL  
-----

This controls the use of reqtools.library. If set to NO then reqtools will not be used (except in very unusual circumstances). It will still however be opened and closed. If set to YES then reqtools will be used for various requesters. If set to ALL then it will be used for the File Requesters as well.

This parameter is not available as a menu option, is not saved in settings files and can not be specified on a project Icon.

Default values is YES.

### 1.38 TSMorph.guide/P-SAVEFORMAT

SAVEFORMAT=ILBM24/OPAL24/OPAL24T/OPAL24F/OPAL24FT/JPEG/JPEGT/PPM/ ↔  
BW16/BW256/HAM6/HAM8/DCTV3/DCTV4  
-----

This parameter and menu item specify the format TSMorph-render should use to save the output images. OPAL and JPEG formats are only available if opal.library is available. DCTV3 and DCTV4 formats are only available if dctv.library is available.

ILBM24 - IFF 24 bit ILBM with no CAMG chunk

---

```

OPAL24   - IFF 24 bit ILBM saved using opal.library
OPAL24T  - as OPAL24 with a Thumbnail
OPAL24F  - as OPAL24 in Fast Format
OPAL24TF - as OPAL24F with a Thumbnail
JPEG     - JPEG format using opal.library
JPEGT    - as JPEG with a Thumbnail
PPM      - PPM format
BW16     - ILBM 16 colour grey scale
BW256    - ILBM 256 colour grey scale
HAM6     - ILBM 6 plane HAM
HAM8     - ILBM 8 plane HAM
DCTV3    - ILBM 3 plane DCTV using dctv.library
DCTV4    - ILBM 4 plane DCTV using dctv.library

```

The quality of JPEG images can be set using the  
 QUALITY  
 parameter.

PPM format is basically uncompressed 24 bit. The files are therefore very large and it is suggested that a compressing file handler (such as XFH or EPU) is used. This format is provided mainly to allow the easy production of MPEG movies.

The save format also controls which  
 Icon  
 is saved with the image.

### 1.39 TSMorph.guide/P-SETTINGS-R

```

SETTINGS=filename
-----

```

This can only be supplied on the Shell command line, or an Icon Tool Type.

This specifies the name of a file to contain settings. See  
 parameters

.

### 1.40 TSMorph.guide/P-TOOLPRI

```

TOOLPRI=number
-----

```

This can only be supplied as a Tool Icon tool type. It sets the priority of the rendering process.

Setting to -1 is a good idea if you wish to run the program in the

---



background. The default value is 0. Setting to positive values is generally not a good idea.

## 1.41 TSMorph.guide/Info

The Information Window

\*\*\*\*\*

This window is always displayed when TSMorph is running. It displays information about the current project. The window title is TSMorph, the screen title will be displayed as the project name if the project has a name. It is used to set up all the information required by TSMorph-render.

Gadgets

Gadgets displayed in the Info Window

Menus

Menus available in the Info Window

Keyboard

Keyboard controls in the Info Window

## 1.42 TSMorph.guide/l-gad

Gadgets in Info Window

=====

```

-----
|
|           .
|           |TSMorph           |
|           |
|           |
|-----|
|
|           Help Text
|
| File One
|           .....
|           X
|           |
| File Two
|           .....

```

```

      X
      |
|24 File 1
      .....

      X
      |
|24 File 2
      .....

      X
      |
|   Width
      ...
      Height
      ...
      |
|
      Single
      Frames
      ..
      Start
      .
      |
|   Name
      .....

      X
      |
|
      Edit Points...
      |
-----

```

Help Text	Displays help messages (release 3.0+)
File One	The first image file for point editing
Get file	Get file gadget for above
File Two	The second image file for point editing
Get File	Get file gadget for above
24 File 1	The first 24 bit image file to morph
Get File	Get file gadget for above

---

24 File 2	The second 24 bit image file to morph
Get File	Get file gadget for above
Width	Read only gadget showing width
Height	Read only gadget showing Height
Single	Cycle morph mode gadget
Frames	Number of frames to generate
Start	Frame number to start at
Name	File name of animation frames
Get File	Get file gadget for above
Edit Points...	Display images to edit points
Close gadget	Quit program
Zoom gadget	Standard zoom window
Depth gadget	Standard depth gadget

## 1.43 TSMorph.guide/l-gad-Help

Help Text gadget

-----  
This gadget displays short help messages.

From release 3.0 and up it displays more information. See also

Continuous Help

.

---

## 1.44 TSMorph.guide/l-gad-File\_One

File One gadget

-----

This gadget allows the editing of the file name of the first image to be used when editing points. This gadget is disabled if the

Edit Windows  
 are currently open. The file name can be either edited in  
 the string gadget or by using the  
 Get File  
 to display an ASL file  
 requester.

This image should be a Workbench displayable version of the

first 24 bit file  
 . (See  
 OPENMODE  
 for what images can be loaded.) It is  
 displayed in the first  
 Edit Window  
 when editing points.

o can be used to activate this gadget - See  
 Keyboard

.

See

File naming  
 for how to specify the file name.

## 1.45 TSMorph.guide/l-gad-Get\_File\_One

Get File One gadget

-----

This gadget displays an ASL file requester to select the file to appear in the

File One  
 gadget.

o with shift is the same as using this gadget - See  
 Keyboard

.

---

## 1.46 TSMorph.guide/l-gad-File\_Two

File Two gadget

-----  
 This gadget is the same as the  
     File One  
     gadget for the second  
 displayable image. This image should be the same size as the first.

t can be used to activate this gadget - See  
     Keyboard

.

See

    File naming  
     for how to specify the file name.

## 1.47 TSMorph.guide/l-gad-Get\_File\_Two

Get File Two gadget

-----  
 This gadget displays an ASL file requester to select the file to appear  
 in the

    File Two  
     gadget.

t with shift is the same as using this gadget - See  
     Keyboard

.

## 1.48 TSMorph.guide/l-gad-24\_File\_1

24 File 1 gadget

-----  
 This gadget allows the editing of the file name of the first image to  
 be used when morphing. The file name can be either edited in the string  
 gadget or by using the

    Get File  
     to display an ASL file requester.

This image should be a 24 bit version of the  
     first displayable file

.

Also see the

    LOADSCRIPT

---

parameter. Note: TSMorph now has the ability to load a large variety of images as 24 bit files. If this gadget is left blank then the name from the first displayable file is used.

1 can be used to activate this gadget - See Keyboard .

See File naming for how to specify the file name.

## 1.49 TSMorph.guide/l-gad-Get\_24\_File\_1

Get 24 File 1 gadget  
-----

This gadget displays an ASL file requester to select the file to appear in the

24 File 1  
gadget.

1 with shift is the same as using this gadget - See Keyboard .

## 1.50 TSMorph.guide/l-gad-24\_File\_2

24 File 2 gadget  
-----

This gadget allows the editing of the file name of the last image to be used when morphing. The file name can be either edited in the string gadget or by using the

Get File  
to display an ASL file requester.

This image should be a 24 bit version of the second displayable file .

Also see the

LOADSCRIPT

parameter. Note: TSMorph now has the ability to load a large variety of images as 24 bit files. If this gadget is left blank then the name from the second displayable file

---

is used.

If

Single Image  
mode is selected then this is ignored.

2 can be used to activate this gadget - See  
Keyboard

.

See

File naming  
for how to specify the file name.

## 1.51 TSMorph.guide/l-gad-Get\_24\_File\_2

Get 24 File 2 gadget

-----  
This gadget displays an ASL file requester to select the file to appear  
in the

24 File 2  
gadget.

2 with shift is the same as using this gadget - See  
Keyboard

.

## 1.52 TSMorph.guide/l-gad-Width

Width gadget

-----  
This gadget displays the width of the images being edited. If images  
have not been selected then it should display the maximum width of the  
current points.

## 1.53 TSMorph.guide/l-gad-Height

Height gadget

-----  
This gadget displays the height of the images being edited. If images  
have not been selected then it should display the maximum height of the  
current points.

---

## 1.54 TSMorph.guide/l-gad-Single

Single image gadget  
-----

This gadget cycles between Morphs, Warps, Animated Morphs and Animated Warps.

In Warp mode one image is distorted based on the control points.

In Morph mode one image is distorted/recoloured into a second image based on control points.

In animated Warps and Morphs the input images can change on each output frame.

r and R can be used to cycle this gadget forward and backward - See

Keyboard

.

Note: Animated Warps/Morphs are only available if Reqttools is available.

## 1.55 TSMorph.guide/l-gad-Frames

Number of Frames gadget  
-----

This gadget can be used to specify the number of frames to generate.

In

Single

mode the total number of frames will be this number plus the first image.

In dual mode the total number of frames is the first image, this number and the last image.

f can be used to activate this gadget - See

Keyboard

.

This gadget is disabled if Images are displayed and an animated Morph/Warp is being edited.

---



## 1.56 TSMorph.guide/l-gad-Start

Start Frame gadget  
-----

This gadget can be used to specify the number to use in the Name of the first generated file. This number is then incremented by 1 for each subsequent frame.

a can be used to activate this gadget - See Keyboard

.

This gadget is disabled if Images are displayed and an animated Morph/Warp is being edited.

## 1.57 TSMorph.guide/l-gad-Name

Anim file Name gadget  
-----

This gadget is used to name the files produced by TSMorph-render.

The file name can be either edited in the string gadget or by using the

Get File  
to display an ASL file requester.

The file name should contain the characters %ld. These characters will be replaced by the frame number, starting from that specified in the

Start  
gadget.

n can be used to activate this gadget - See Keyboard

.

See

File naming  
for further information on how to specify the file name.

## 1.58 TSMorph.guide/l-gad-Get\_Name

Get Anim file Name gadget  
-----

This gadget displays an ASL file requester to select the file to appear in the

Name  
gadget.

n with shift is the same as using this gadget - See  
Keyboard  
.

## 1.59 TSMorph.guide/l-gad-Edit\_Points

Edit Points... gadget

-----  
This button gadget has the same effect as the

Edit Points  
menu option.

It opens the

Control Window  
and  
Edit Windows  
to allow editing of the

control points. If these windows are already open then the Control Window is activated.

p is the same as using this gadget - See  
Keyboard  
.

## 1.60 TSMorph.guide/l-gad-Close

Close gadget

-----  
This is a standard close gadget. Clicking quits the program.

If the current project has been changed but not saved then the

Unsaved Project requester  
is displayed.

## 1.61 TSMorph.guide/l-gad-Zoom

Zoom gadget  
-----

This is a standard Zoom gadget which switches the window between full size and a title bar and the help text.

## 1.62 TSMorph.guide/l-gad-Depth

Depth gadget  
-----

This is a standard depth gadget.

## 1.63 TSMorph.guide/l-men

Menus on the Info Window

=====

The following menus are available on the Information Window:

Project  
Project menu

Settings  
Settings menu

## 1.64 TSMorph.guide/l-men-P

Info Window Project menu  
-----

This menu contains the following items with their associated Amiga short-cuts in the Info Window:

New            N            Create a new project

Open...        O            Open a file

---

Save	S	Save file
Save As...		Save named file
Delete...		Delete a Project
About...		Show about requester
Quit	Q	Quit program
Preview...		Preview render
Edit Points	E	Open windows to edit points

## 1.65 TSMorph.guide/l-men-P-New

Info Window Project/New menu item  
.....

This menu item creates a new project.

If the current project has been changed but not saved then the

Unsaved Project requester  
is displayed.

## 1.66 TSMorph.guide/l-men-P-Open

Info Window Project/Open menu item  
.....

This menu item allows the loading of a previously created

Parameter file  
.

If the current project has been changed but not saved then the

---

Unsaved Project requester  
is displayed.

## 1.67 TSMorph.guide/l-men-P-Save

Info Window Project/Save menu item  
.....

This saves the current project using the current name. If the project does not yet have a name then an ASL file requester is displayed.

See

File Format  
.

## 1.68 TSMorph.guide/l-men-P-Save\_As

Info Window Project/Save As... menu item  
.....

This saves the current project using a name chosen using an ASL file requester.

See

File Format  
.

## 1.69 TSMorph.guide/l-men-P-Delete

Info Window Project/Delete... menu item  
.....

This can be used to delete a Project. It will delete the main file, its icon (if present) and any associated Anim points files.

See

File Format  
.

---

## 1.70 TSMorph.guide/l-men-P-About

Info Window Project/About... menu item

.....

This displays some program version information in the  
About Requester  
.

## 1.71 TSMorph.guide/l-men-P-Quit

Info Window Project/Quit menu item

.....

This quits TSMorph.

If the current project has been changed but not saved then the

Unsaved Project requester  
is displayed.

## 1.72 TSMorph.guide/l-men-P-Preview

Info Window Project/Preview... menu item

.....

This menu item renders the image using the ARexx script supplied in the

PREVIEW  
parameter.

If required it first displays the  
Frame Number  
requester.

This menu option is only available if reqtools.library is available.

If the current project has been changed but not saved then the

Unsaved Project requester  
is displayed.

## 1.73 TSMorph.guide/l-men-P-Edit\_Points

---

Info Window Project/Edit Points menu item

.....

This is the same as the  
Edit Points  
gadget.

It opens the  
Control Window  
and  
Edit Windows  
to allow editing of the  
control points. If these windows are already open then the Control  
Window is activated.

## 1.74 TSMorph.guide/l-Key

Keyboard controls in the Info Window

=====

The following keyboard controls are available in the Info Window:

- o Activate
  - File One  
gadget
  - With shift - show file requester - See  
Get File One
  - .
- t Activate
  - File Two  
gadget
  - With shift - show file requester - See  
Get File Two
  - .
- 1 Activate
  - 24 File 1  
gadget
  - With shift - show file requester - See  
Get 24 File 1
  - .
- 2 Activate
  - 24 File 2  
gadget
  - With shift - show file requester - See  
Get 24 File 2
  - .
- rR Cycle
  - Single image

```
        gadget.  
  
f  Activate  
    Frames  
    gadget.  
  
a  Activate  
    Start  
    gadget.  
  
n  Activate  
    Name  
    gadget  
    With shift - show file requester - See  
    Get Name  
    .  
  
p  Same as  
    Edit Points  
    gadget
```

Help displays context sensitive help using amigaguide if available.

## 1.75 TSMorph.guide/Con

The Control Window

\*\*\*\*\*

The control window displays various gadgets for different for different point editing modes. The title bar displays the current editing mode as does the Mouse pointer. The screen title bar displays TSMorph for non-animated Warps/Morphs and TSMorph - Frame nnn for animated Warps/Morphs.

Gadgets

Gadgets displayed in the control window

Menus

Menus on the Control Window

Edit Modes

Point editing modes

Keyboard

Keyboard controls in the Control Window

---



## 1.76 TSMorph.guide/Con-gad

Control and Image Window gadgets

=====

```

-----
|
|           .
|           | Mov |
|           |
|-----|
|
|           ONE
|           TWO
|           |
|           REL
|           ADD
|           |
|           DEL
|           LNK
|           |
|           UNL
|           MOV
|           |
|           |<
|           <
|           ?
|           >
|           >|
|           |
-----

```

Most are used to set the edit mode. The rest except the close and depth gadgets are used to set the current

Frame Number

.

One

Move points in one window

Two

Move points in both windows

Rel

Move points relatively in both windows

Add

Add a new point

---

Del	Delete an existing point
Lnk	Link two points
Unl	Unlink two points
Mov	Scroll the window
<	First Frame
<	Previous Frame
?	Goto Frame
>	Next Frame
>	Last Frame
Close	Close window
Depth	Depth gadget

## 1.77 TSMorph.guide/Con-gad-First

Control Window First Frame gadget

-----

This gadget goes to the first frame. This is the same as the  
First  
menu  
item.

This gadget is disabled if the Morph/Warp is not animated, or the first frame is already displayed.

---

## 1.78 TSMorph.guide/Con-gad-Previous

Control Window Previous Frame gadget

---

This gadget goes to the previous frame. This is the same as the

Previous  
menu item.

This gadget is disabled if the Morph/Warp is not animated, or the first frame is currently displayed.

## 1.79 TSMorph.guide/Con-gad-Goto

Control Window Goto Frame gadget

---

This gadget goes to a chosen frame. This is the same as the

Goto  
menu  
item. It displays the  
Frame Number  
Requester.

This gadget is disabled if the Morph/Warp is not animated.

## 1.80 TSMorph.guide/Con-gad-Next

Control Window Next Frame gadget

---

This gadget goes to the next frame. This is the same as the

Next  
menu  
item.

This gadget is disabled if the Morph/Warp is not animated, or the last frame is currently displayed.

## 1.81 TSMorph.guide/Con-gad-Last

---

### Control Window Last Frame gadget

---

This gadget goes to the last frame. This is the same as the  
 Last  
 menu  
 item.

This gadget is disabled if the Morph/Warp is not animated, or the last frame is already displayed.

## 1.82 TSMorph.guide/Con-gad-Close

### Control Window Close gadget

---

This closes the  
 Control Window  
 , and the  
 Edit Windows  
 .

## 1.83 TSMorph.guide/Con-gad-Depth

### Control Window Depth gadget

---

This is a standard depth gadget.

## 1.84 TSMorph.guide/CI-men

### Control and Edit Windows menus

---

The following menus are available on the  
 Control  
 and  
 Edit  
 Windows:

Project

Project menu

---

Edit  
Edit menu

Settings  
Settings menu

## 1.85 TSMorph.guide/CI-men-P

Control and Edit Windows Project menu

---

This menu contains the following items with their associated Amiga short-cuts in the

Control  
and  
Edit  
Windows:

New Points	N	Delete all points
Open Points...	O	Read points from a file
Save	S	Save file
Save As...	A	Save named file
About...		Show about requester
Exit Points		Open windows to edit points
Quit	Q	Quit program
Preview...		Preview render

---

## 1.86 TSMorph.guide/CI-men-P-New

Control and Edit Window Project/New Points menu item  
 .....

This menu item deletes all existing points.

## 1.87 TSMorph.guide/CI-men-P-Open

Control and Edit Window Project/Open Points menu item  
 .....

This menu item allows the loading of a previously created

Parameter file

.

Only the points are loaded from the file. Other parameters are retained.

If the current project has been changed but not saved then the

Unsaved Project requester  
 is displayed.

## 1.88 TSMorph.guide/CI-men-P-Save

Control and Edit Window Project/Save menu item  
 .....

This saves the current project using the current name. If the project does not yet have a name then an ASL file requester is displayed.

See

File Format

.

## 1.89 TSMorph.guide/CI-men-P-Save\_As

Control and Edit Window Project/Save As... menu item

.....

This saves the current project using a name chosen using an ASL file requester.

See

File Format

.

## 1.90 TSMorph.guide/CI-men-P-About

Control and Edit Window Project/About... menu item

.....

This displays some program version information in the  
About Requester

.

## 1.91 TSMorph.guide/CI-men-P-Exit\_Points

Control and Edit Window Project/Exit Points menu item

.....

This is the same as closing the  
Control Window  
or either of the

Edit Windows

. It closes all of these windows.

## 1.92 TSMorph.guide/CI-men-P-Quit

Control and Edit Window Project/Quit menu item

.....

This quits TSMorph.

If the current project has been changed but not saved then the

Unsaved Project requester  
is displayed.

### 1.93 TSMorph.guide/CI-men-P-Preview

Control and Edit Windows Project/Preview... menu item  
 .....

This menu item renders the image using the ARexx script supplied in the

PREVIEW  
 parameter.

If required it first displays the  
 Frame Number  
 requester.

This menu option is only available if reqtools.library is available.

If the current project has been changed but not saved then the

Unsaved Project requester  
 is displayed.

### 1.94 TSMorph.guide/CI-men-E

Control and Edit Window Edit menu  
 -----

This menu contains the following items with their associated Amiga  
 short-cuts in the

Control  
 and  
 Edit  
 Windows:

Add Grid... G	Add a grid of points
Triangulate T	Convert links to triangles
Frame »	Change the Frame Number
Mode »	Set the edit mode.



## 1.95 TSMorph.guide/CI-men-E-Grid

Control and Edit Window Edit/Add Grid... menu item

This menu item displays the  
Add Grid

requester to add a grid of points  
to the images.

## 1.96 TSMorph.guide/CI-men-E-Triangulate

Control and Edit Window Edit/Triangulate menu item

This menu item deletes all links between points and attempts to convert  
them to triangles (similar to the

MODE=24

option of TSMorph-render). If

the current project has been changed then the

Unsaved Project

requester

is displayed.

## 1.97 TSMorph.guide/CI-men-E-Frame

Control and Edit Windows Frame sub menu

This sub menu contains the following items with their associated Amiga  
short-cuts in the

Control

and

Edit

Windows:

First <

First Frame

Previous -

Previous Frame

Goto... .

Goto Frame

Next +

```
Next Frame
Last      >
Last Frame
```

## 1.98 TSMorph.guide/CI-men-E-Frame-First

```
Control and Edit Windows Frame/First menu item
*****
```

This menu item goes to the first frame. This is the same as the  
First  
gadget.

This menu item is disabled if the Morph/Warp is not animated, or the  
first frame is already displayed.

## 1.99 TSMorph.guide/CI-men-E-Frame-Previous

```
Control and Edit Windows Frame/Previous menu item
*****
```

This menu item goes to the previous frame. This is the same as the  
Previous  
gadget.

This menu item is disabled if the Morph/Warp is not animated, or the  
first frame is already displayed.

## 1.100 TSMorph.guide/CI-men-E-Frame-Goto

```
Control and Edit Windows Frame/Goto menu item
*****
```

This menu item goes to a chosen frame. This is the same as the  
Goto  
gadget. It displays the  
Frame Number  
Requester.

This menu item is disabled if the Morph/Warp is not animated, or the  
first frame is already displayed.

---

### 1.101 TSMorph.guide/CI-men-E-Frame-Next

Control and Edit Windows Frame/Next menu item

\*\*\*\*\*

This menu item goes to the next frame. This is the same as the  
Next  
gadget.

This menu item is disabled if the Morph/Warp is not animated, or the last frame is already displayed.

### 1.102 TSMorph.guide/CI-men-E-Frame-Last

Control and Edit Windows Frame/Last menu item

\*\*\*\*\*

This menu item goes to the last frame. This is the same as the  
Last  
gadget.

This menu item is disabled if the Morph/Warp is not animated, or the last frame is already displayed.

### 1.103 TSMorph.guide/CI-men-E-EMode

Control and Edit Window Edit/Mode sub menu

.....

This sub menu contains the following items with their associated Amiga short-cuts in the

Control  
and  
Edit  
Windows:

Edit One	1	Move points in one window
Edit Two	2	Move points in both windows

Edit Rel	3	Move points relatively in both windows
Add	4	Add a new point
Delete	5	Delete an existing point
Link	6	Link two points
Unlink	7	Unlink two points
None	8	Scroll the window

## 1.104 TSMorph.guide/men-Settings

Settings menu

-----

This menu contains the following items with their associated Amiga short-cuts in the

Control

,

Info

and

Edit

Windows. Settings can be set

using

Parameters

. All menu items which display requesters will not be available if reqtools.library is not available. Items requiring opal.library will not be available if opal.library is not available.

Create Icons?

Create Icons on projects?

Change Palette? P

Use Image palette?

Zoom? Z

Zoom Image?

Open Mode »

How to open images

Public Screen...

Screen for TSMorph

---

Custom Mode...	Mode of Custom screen to open
Custom Depth...	Depth of Custom screen to open
Preview Script...	ARexx preview script
Create Prefs Icons?	Create Icons on settings
Keep Settings?	Keep settings on Quit
Load Settings...	Display file requester to load settings
Save Settings	Save settings in ENVARC:TSMorph/TSMorph.prefs
Save Settings As...	Display file requester to save settings
Create Render Icons?	Create Icons on images?
DX...	Horizontal skip
DY...	Vertical skip
Load Script...	ARexx load script
Pre Script...	ARexx pre frame script
Post Script...	ARexx post frame script
Depth	Morphing algorithm depth
Mode	» Morphing algorithm mode
Save Format	» Image save format
JPEG Quality	Quality of JPEG images

---

```

Render Screen...
    Public screen for TSMorph-render

Anti-Alias?
    Anti-Alias the output images

Integer?
    Use integer maths

Reset To Defaults
    Reset to default settings

Last Saved
    Restore from ENVARC:TSMorph/TSMorph.prefs

Restore
    Restore from ENV:TSMorph/TSMorph.prefs

Continuous Help?
    Display continuous help

```

## 1.105 TSMorph.guide/men-S-LoadS

Setting/Load Settings... menu item

.....

This displays an ASL requester to load settings into the currently running program.

The default name is TSMorph.prefs.

## 1.106 TSMorph.guide/men-S-SaveS

Settings/Save Settings menu item

.....

This saves the current settings in ENVARC:TSMorph/TSMorph.prefs and ENV:TSMorph/TSMorph.prefs.

If

```

CREATEICONSP
    is set then an Icon is saved as well

```

Unless

KEEPSETTINGS

is set to NO current settings are saved in

ENV:TSMorph/TSMorph.prefs whenever TSMorph is quit.

## 1.107 TSMorph.guide/men-S-SaveSAs

Setting/Save Settings As... menu item

.....

This displays an ASL requester to save the current settings

.

If

CREATEICONSP

is set then an Icon is saved as well

The default name is TSMorph.prefs.

## 1.108 TSMorph.guide/men-S-ResetD

Setting/Reset To Defaults menu item

.....

This resets

settings

to there default values.

If some

Image windows

are open and

CHANGEPALETTE

is set to OFF then it

will stay OFF. The same applies to

ZOOM

.

## 1.109 TSMorph.guide/men-S-LastS

Settings/Last Saved menu item

.....

This reset settings to the values last saved in ENVARC:TSMorph/TSMorph.prefs (overridden by any Tool Types).

If some Image windows are open and CHANGEPALETTE is set to OFF then it will stay OFF. The same applies to ZOOM.

### 1.110 TSMorph.guide/men-S-Restore

Setting/Restore menu item  
.....

This resets settings to the values last saved in ENV:TSMorph/TSMorph.prefs (overridden by any Tool Types). Settings are saved in this file whenever TSMorph is quit if KEEPSETTINGS is set to YES.

If some Image windows are open and CHANGEPALETTE is set to OFF then it will stay OFF. The same applies to ZOOM.

### 1.111 TSMorph.guide/Con-Key

Keyboard controls in the Control Window  
=====

Help displays context sensitive help using amigaguide if available.

### 1.112 TSMorph.guide/Edit



### The Edit Windows

\*\*\*\*\*

The Edit windows display Workbench displayable versions of the images to be morphed along with the control points. The window title displays the file name, the screen title displays the full file name. The mouse pointer shows the current editing mode. The windows are sizeable and have scrollbars. The menus displayed are the same as the Control Window

.

The first click in these windows is ignored.

If

EGS

is being used then the windows are displayed on the EGS screen without menus. Keyboard short cuts 1-8 are still available. The windows do not, however, automatically scroll.

Gadgets

Gadgets on the Edit Windows

Menus

Menus on the Edit Windows

Keyboard

Keyboard controls on the Edit Windows

Modes

Point editing modes.

## 1.113 TSMorph.guide/E-gad

Gadgets on the Edit Windows

=====

```
-----
|
|
|
|
|
|-----|
|         |
|         |
|         ||
|         |
|         |
```

```

      ||
      |
|      |
      ||
      |
|      |
      ||
      |
|      |
      /|
      |
|      |
      \|
      |
|-----|
|
      -----
      <-
      ->
      |
      //
      |
-----

```

Horizontal scroll gadget  
Scrolls image horizontally

Vertical scroll gadget  
Scrolls image vertically

Up gadget  
Scroll image up

Down gadget  
Scroll image down

Left gadget  
Scroll image left

Right gadget  
Scroll image right

Close gadget  
Close Edit and Control Windows

Zoom gadget  
Zoom window

Depth gadget  
Depth gadget

Sizing gadget  
Sizing gadget

### **1.114 TSMorph.guide/E-gad-Horiz**

Edit Windows Horizontal gadget  
-----

This gadget can be used to scroll the image horizontally.

### **1.115 TSMorph.guide/E-gad-Vert**

Edit Windows Vertical gadget  
-----

This gadget can be used to scroll the image vertically.

### **1.116 TSMorph.guide/E-gad-Up**

Edit Windows Up gadget  
-----

This gadget can be used to scroll the image up.

Holding down shift will cause the window to scroll one pixel at a time.

### **1.117 TSMorph.guide/E-gad-Down**

Edit Windows Down gadget  
-----

This gadget can be used to scroll the image down.

Holding down shift will cause the window to scroll one pixel at a time.

### **1.118 TSMorph.guide/E-gad-Left**

Edit Windows Left gadget  
-----

This gadget can be used to scroll the image left.

---

Holding down shift will cause the window to scroll one pixel at a time.

### 1.119 TSMorph.guide/E-gad-Right

Edit Windows Right gadget  
-----

This gadget can be used to scroll the image right.

Holding down shift will cause the window to scroll one pixel at a time.

### 1.120 TSMorph.guide/E-gad-Close

Edit Windows Close gadget  
-----

This closes the

Control Window  
, and the  
Edit Windows  
.

### 1.121 TSMorph.guide/E-gad-Zoom

Edit Windows Zoom gadget  
-----

This is a standard Zoom gadget. It swaps the size between maximum and minimum

Maximum is the smaller of the size of the image or the size of the screen.

Minimum is the minimum required for all gadgets to still be visible.

### 1.122 TSMorph.guide/E-gad-Depth

Edit Windows Depth gadget  
-----

This is a standard depth gadget.

---

### 1.123 TSMorph.guide/E-gad-Size

Edit Windows Sizing gadget

-----  
This a standard sizing gadget. See  
Zoom  
gadget for the sizing limits

### 1.124 TSMorph.guide/E-Key

Keyboard controls in the Edit Windows

=====  
The number keys can be used to set the  
Edit Mode

.

- |   |  |
|---|--|
| 1 | Move points in one window              |
| 2 | Move points in both windows            |
| 3 | Move points relatively in both windows |
| 4 | Add a new point                        |
| 5 | Delete an existing point               |
| 6 | Link two points                        |
| 7 | Unlink two points                      |
| 8 | Scroll the window                      |

Help displays context sensitive help using amigaguide if available.

### 1.125 TSMorph.guide/EModes

---

## Point editing modes

\*\*\*\*\*

The following edit modes are available to edit points:

One	Move points in one window
Two	Move points in both windows
Relative	Move points relatively in both windows
Add	Add a new point
Delete	Delete an existing point
Link	Link two points
Unlink	Unlink two points
Move	Scroll the window

Note: The menu button can always be used to abort the current operation before releasing the select button.

Modes can be set using gadgets in the  
Control Window  
or by using  
menus  
on the  
Control  
and  
Edit  
Windows.

## 1.126 TSMorph.guide/EMode-One

## Edit Mode One

=====

This mode is used to move a point in one of the  
Edit Windows

.

The

```
Control Windows
title is set to One.
```

The Mouse Pointer is set to ONE.

Points can be clicked and moved in either of the windows with the mouse - the point will only move in the selected window.

## 1.127 TSMorph.guide/EMode-Two

```
Edit Mode Two
```

```
=====
```

```
This mode is used to move a point in both of the
Edit Windows
```

```
.
```

The

```
Control Windows
title is set to Two.
```

The Mouse Pointer is set to TWO.

Points can be clicked and moved in both of the windows with the mouse - the point will move in both windows to the same absolute position.

## 1.128 TSMorph.guide/EMode-Relative

```
Edit Mode Relative
```

```
=====
```

```
This mode is used to move a point in both of the
Edit Windows
```

```
.
```

The

```
Control Windows
title is set to Rel.
```

The Mouse Pointer is set to REL.

Points can be clicked and moved in both of the windows with the mouse - the point will move in both windows to the same relative position.

---

## 1.129 TSMorph.guide/EMode-Add

Edit Mode Add

=====

This mode is used to add a point in both of the  
Edit Windows  
.

The

Control Windows  
title is set to Add.

The Mouse Pointer is set to ADD.

Points can be added in either of the windows by clicking the mouse - the  
point will added to both windows to the same absolute position.

## 1.130 TSMorph.guide/EMode-Delete

Edit Mode Delete

=====

This mode is used to delete a point in both of the  
Edit Windows  
.

The

Control Windows  
title is set to Del.

The Mouse Pointer is set to DEL.

Points can be deleted in either of the windows by clicking the mouse -  
the point will deleted from both windows. Any  
links  
will also be  
removed.

## 1.131 TSMorph.guide/EMode-Link

Edit Mode Link

=====

This mode is used to link two points in both of the  
Edit Windows  
.



The  
Control Windows  
title is initially set to L1.

The Mouse Pointer is set to L1.

A point can then be selected in either of the windows by clicking the mouse.

The  
Control Windows  
title is then set to L2.

The Mouse Pointer is set to L2.

Another point can then be selected in either of the windows by clicking the mouse. The points will be joined by a line.

Note: this line is to enable points to be identified more easily. It is not used by the rendering process.

## 1.132 TSMorph.guide/EMode-Unlink

Edit Mode Unlink  
=====

This mode is used to unlink two linked points in both of the

Edit Windows  
.

The  
Control Windows  
title is initially set to U1.

The Mouse Pointer is set to U1.

A point can then be selected in either of the windows by clicking the mouse.

The  
Control Windows  
title is then set to U2.

The Mouse Pointer is set to U2.

Another point can then be selected in either of the windows by clicking the mouse. If the points are currently joined then the line will be removed.

---

### 1.133 TSMorph.guide/EMode-Move

```

                Edit Mode Move
=====

```

In this mode no points are edited.

The

```

                Control Windows
                title is set to Mov.

```

The Mouse Pointer is set to Mov.

Clicking in the window and moving the mouse will scroll the window.

```

This is the initial mode when the
                Edit Windows
                are opened.

```

If

```

                EGS
                is being used then the windows will not scroll.

```

### 1.134 TSMorph.guide/Req

```

                Requesters which appear
*****

```

The following requesters are produced:

```

                Unsaved Project
                                Quitting having not saved

                About requester
                                Version Information

                Error requester
                                Error messages

                Add Grid
                                Add a grid of points

                Frame Number?
                                Choose a Frame Number

                Progress
                                Progress

                Really quit?

```

Really quit?

### 1.135 TSMorph.guide/Req-Unsaved

Unsaved project requester  
=====

This requester is displayed when attempting to quit, preview render or triangulate without having saved a project.

It displays 3 or 4 options (depending on if amigaguide is available):

Save: Save the project and quit, render or triangulate  
Help: Display help (only shown if available)  
Abandon: Quit, preview or triangulate without saving the project  
Cancel: Do not save and do not quit, preview or triangulate

If reqtools.library(38) is available then this will be used and keyboard short-cuts (the first character of the option) will be available and underlined.

### 1.136 TSMorph.guide/Req-About

About requester  
=====

This requester is displayed when About... is chosen on a menu on the

Info Window  
or  
Control or Edit Windows  
. It displays version information.

If reqtools.library(38) is available then this will be used and keyboard short-cuts (the first character of the option) will be available and underlined.

### 1.137 TSMorph.guide/Req-Error

Error requesters  
=====

This requester is displayed if an error occurs. It displays an error message and gives one (or two) options.

---

If amigaguide is available then the first option will be Help - this will display detailed information on the error message.

The last option is Quit for fatal errors, and OK for non fatal errors.

See

Errors  
for details on error messages.

If reqtools.library(38) is available then this will be used and keyboard short-cuts (the first character of the option) will be available and underlined.

If

EGS  
is being used and the  
edit  
windows are open then the requester

will appear on the EGS screen.

### 1.138 TSMorph.guide/Req-Add\_Grid

Add Grid requester

=====

Add Grid...  
menu item is chosen

```

-----
|
|           .
|           |Add Grid|
|           |
|-----|
| X Cells
|           ...
|           |
| Y Cells
|           ...
|           |
|           |
|           |
|           OK
|
|           Cancel
|
-----

```

The following gadgets are displayed in the requester with their associated keyboard equivalents:

X Cells	X	Set number of X cells
Y Cells	Y	Set number of Y Cells
OK	O	Add points
Cancel	C	Cancel requester
Close		Close gadget
Depth		Depth gadget

### 1.139 TSMorph.guide/Req-Add\_Grid-gad-X\_Cells

Add Grid X Cells gadget  
-----

This gadget is used to input the number of horizontal cells of points to add. The minimum number is 1. The default value displayed is 5.

This gadget can be activated by using the X key.

### 1.140 TSMorph.guide/Req-Add\_Grid-gad-Y\_Cells

Add Grid Y Cells gadget  
-----

This gadget is used to input the number of vertical cells of points to add. The minimum number is 1. The default value displayed is 5.

This gadget can be activated by using the Y key.

### 1.141 TSMorph.guide/Req-Add\_Grid-gad-OK

Add Grid OK gadget  
-----

Selecting this gadget adds points of cells to the images. The number of

---

horizontal cells can be set in the  
X Cells  
gadget and the number of  
vertical cells in the  
Y Cells  
gadget.

The O key is the same as using this gadget.

### 1.142 TSMorph.guide/Req-Add\_Grid-gad-Cancel

Add Grid Cancel gadget  
-----

This gadget cancels the Add Grid requester without adding any points.

The C key is the same as using this gadget.

### 1.143 TSMorph.guide/Req-Add\_Grid-gad-Close

Add Grid Close gadget  
-----

This is the same as the  
Cancel  
gadget and cancels the requester.

### 1.144 TSMorph.guide/Req-Add\_Grid-gad-Depth

Add Grid Depth gadget  
-----

This is a standard depth gadget.

### 1.145 TSMorph.guide/Req-FrameNumber

Choose a Frame Number requester  
=====

This requester is displayed when the  
Edit Points

---

gadget is selected  
(and there is more than one frame) on an animated Morph/Warp, or the

```
Goto
  gadget or
Goto
  menu item is selected, or the
Preview...
  or

Preview...
  menu item is selected.
```

It displays the first and last frame number and allows input of the required frame number.

It displays OK, Help (if amigaguide is available) and Cancel gadgets. The keyboard shortcuts (O,H and C) are underlined.

## 1.146 TSMorph.guide/Req-Progress

```
Progress requester
=====
```

This requester is displayed by TSMorph-render. It shows a list view of information messages, and the current frame and line being calculated.

It also displays a stop button and a zoom and depth gadget.

The stop gadget is checked every line. Clicking it displays the

```
Really quit?
  requester allowing the program to be stopped.
```

The Help key displays help.

## 1.147 TSMorph.guide/Req-Really\_quit

```
Really quit? requester
=====
```

This requester is displayed when the stop gadget is clicked on the

```
Progress
  requester. It displays two (or three) options Quit (Help) and
Continue. Quit quits the program, Continue restarts the calculation,
Help is displayed if amigaguide is available and displays help.
```

If `reqtools.library(38)` is available then this will be used and keyboard short-cuts (the first character of the option) will be available and underlined.

## 1.148 TSMorph.guide/Interface

### Changing the Interface

\*\*\*\*\*

All the gadgets in the Control window, and the mouse pointers can be edited.

The brushes are stored in the directory `Brush/`. All may be edited and using e.g. `DPaint`.

The following brushes are size 38x34:

- add
- del
- link
- none
- one
- rel
- two
- unlink

The following are 15x15:

- 1st
- Last
- Next
- Prev

The following is 16x15:

- Goto

The mouse pointers are stored in the directory `Cursor/`. All may be edited using the `Workbench Pointer` editor.

The following Pointers can be edited:

- Xadd
- Xdel
- Xl1
- Xl2
- Xmov
- Xone
- Xrel
- Xtwo
- Xul



Xu2

## 1.149 TSMorph.guide/File\_Format

Internal file formats

\*\*\*\*\*

The file format is subject to change at any time.

The current format for the main file is:

```
TSMorph 1.2
file_name_one
file_name_two
24_bit_file_name_1
24_bit_file_name_2
anim_file_name
w=a,h=b,Frames=c,Single=d,Start=e
x=n,y=m,xl=o,y1=p
.
.
.
p1=i,p2=j
.
.
.
```

where TSMorph 1.2 is a header record (not present in the previous version of TSMorph, old formats can still be loaded producing a

warning message

), a is the width, b the height, c the number of frames, d is 0 for Morph, 1 for Warp, 2 for Anim Morph and 3 for Anim Warp, e is the start frame number, n,m are coordinates on the first image, o,p on the second image, and i and j are the number of the points to join (starting from 0).

For animated Warps and Morphs the main file contains no points. Each frame has a set of points held in a file named with .nnn after the main file name, where nnn is the frame number. This file has a header of TSMorph 2.0 and then has the Points details.

## 1.150 TSMorph.guide/AR

ARexx interface to TSMorph-render and TSMorph

\*\*\*\*\*

ARexx scripts are run before and after each image is rendered, and

before each 24 bit image is loaded. The script names can be supplied as parameters (

```
LOADSCRIPT
,
PRESCRIPT
and
POSTSCRIPT
) to TSMorph-render.
```

An ARExx script can also be run by TSMorph to preview render an image. The script name is supplied in the

```
PREVIEW
parameter.
```

The suffix to each ARExx script should be .TSM.

Loadscript	Run before loading 24 bit image
Prescript	Run before rendering
Postscript	Run after rendering
Preview	Preview render an image

## 1.151 TSMorph.guide/AR-Loadscript

ARExx script run before loading 24 bit image

=====

This script is run before each 24 bit ILBM image is loaded.

It is passed the following parameters:

```
Frame      : The current frame number, starting at
            Start
            .
TotalFrames : The total number of frames being rendered.
Single     : Set to 1 if a Warp, 0 for a Morph, 2 for Anim Morph, 3 for Anim ↔
            Warp.
Image      : Set to 0 for 1st image, 1 for second.
FileName   : Name of file just rendered.
```

This script can be used to change the format of the input file (by running it through a conversion program).

One example is included:

---

Loadscript.TSM - Do nothing example

## 1.152 TSMorph.guide/AR-PreScript

ARexx script run before rendering

=====

This script is run before each image is rendered.

It is also called for the first image (for warps and morphs) and for the last image (for morphs). By default the first and last frames are not rendered. Produce will need to be set to 1 to output these frames. This allows the first and last frames to be converted to the same format as the other output images.

It is passed one parameter - Base - the address of a structure which contains the following:

```

Frame          = 0  : The current frame number, starting at 1 (0 for 1st frame) ←
  - read only.
TotalFrames    = 1  : The total number of frames being rendered - read only.
Single         = 2  : Set to 1 if a Warp, 0 = Morph, 2 = Anim Morph, 3 = Anim ←
  Warp - read only.
Movement       = 3  : 0 to 1024 - the proportion of movement from first to ←
  second image.
Red1           = 4  : 0 to 1024 - the proportion of Image 1 Red to use.
Green1         = 5  : As Red1 for Green.
Blue1          = 6  : As Red1 for Blue.
Red2           = 7  : 0 to 1024 - the proportion of Image 2 Red to use.
Green2         = 8  : As Red2 for Green.
Blue2          = 9  : As Red2 for Blue.
Produce        = 10 : Set to 0 to not render this frame, 1 otherwise.
RPlus          = 11 : 0 to 255 to add to Red in rendered image.
GPlus          = 12 : As RPlus for Green.
BPlus          = 13 : As RPlus for Blue.
RMinus         = 14 : 0 to 255 to subtract from Red in rendered image.
GMinus         = 15 : As RMinus for Green.
BMinus         = 16 : As RMinus for Blue.
DX             = 17 : 0 to ? - X amount to skip - See
  parameters
.
DY             = 18 : 0 to ? - Y amount to skip - See
  parameters
.
Start          = 19 : Starting frame number.

```

The values of these parameters may be set and read using the GetValue and StoreValue functions:

```

/* To read the value of e.g. Movement use:
   integer_variable = GetValue(Base, Movement)
*/

```

```

/* To set the value of e.g. Produce to 0 use:
   call StoreValue(Base,Produce,0)
*/

GetValue:Procedure
  Parse arg XBase, XAdd
  return C2D(IMPORT(D2C(STRIP(XBase) + (STRIP(XAdd) * 4)),4))

StoreValue:Procedure
  Parse arg XBase, XAdd, XVal
  call EXPORT(D2C(STRIP(XBase) + (STRIP(XAdd) * 4)),RIGHT(D2C(XVal),4,D2C(0) ←
    ),4)
  return

```

The default values passed to the script for modification are:

```

Movement          : (1024 * Frame)/(TotalFrames + 1) Morphs
                   (1024 * Frame)/TotalFrames           Warps

Red1,Green1,Blue1 : Movement                               Morphs
                   1024                                   Warps

Red2,Green2,Blue2 : (1024 - Movement)                     Morphs
                   0                                     Irrelevant for Warps

Produce           : 1                                     Rendered frames
                   0                                     Frames 0 and TotalFrames+1

RPlus,GPlus,BPlus : 0
RMinus,GMinus,BMinus: 0
DX,DY             : Initially set by
                   DX
                   and
                   DY
                   parameters

```

Changing these values allows acceleration of movement, colour fades etc. and the generation of only some images (to check a long animation).

Example scripts included are:

```

FadeToBlack.TSM - Warp fade to black
FadeToWhite.TSM - Warp fade to white
PixelMorph.TSM  - Morph by pixelating
PixelWarp.TSM   - Warp pixelating
PreAll.TSM      - Render all images
Prescript.TSM   - Do nothing example

```

## 1.153 TSMorph.guide/AR-Postscript

ARexx script run after rendering

=====

This script is run after each image is rendered.

---

It is passed the following parameters:

```

Frame      : The current frame number, starting at
            Start
            .
TotalFrames : The total number of frames being rendered.
Single     : Set to 1 if a Warp, 0 for a Morph.
FileName   : Name of file just rendered.

```

This script can be used to change the format of the output file (by running it through a conversion program) or build an animation.

Three examples are included:

```

PostAnim.TSM - Convert to Anim
Postscript.TSM - Do nothing example
ToHam.TSM - Convert using PPM and Wasp

```

## 1.154 TSMorph.guide/AR-Preview

```

ARexx script to preview render
=====

```

```

This script is run if the
    Preview...
    or
    Preview...
    menu item is

```

selected. Its purpose is to preview render the image (it can actually do anything you like).

```

Before being called the current
    Settings
    are saved in T:TSMorph.prefs.

```

It is passed the following parameters:

```

Frame      : The frame number to render
FileName   : The file name of the points file

```

Two examples are included:

```

Preview.TSM - Render and display 16 grey scale image
PreAnim.TSM - Render and display 16 grey scale Anim

```

## 1.155 TSMorph.guide/Algorithms

```

Morphing algorithms
*****

```

---

The morphing algorithm is defined using the parameters

MODE  
and  
DEPTH  
to TSMorph-render.

The basic algorithm is to find 3 points which make a triangle around the point and morph this triangle between the start and end images.

The

DEPTH  
parameter controls how many points will be checked to form a triangle. 0 means just the closest 3 points are examined, 1 the closest 4, 2 the closest 5 etc.

The

MODE  
parameter controls both which triangle is chosen and what to do if no surrounding triangle is found.

If MODE=0 2 4 ... 30 (i.e. bit 1 not set [do not add 1]) then if no triangle surrounding the point is found examining the closest points then the 3 closest points are used to decide how to morph. Otherwise the point is assumed to be stationary.

If MODE=2 3 6 7 ... 30 31 (i.e. bit 2 set [add 2]) then all the closest points (the exact number controlled by  
DEPTH  
) are examined to determine the smallest triangle. Otherwise the first surrounding triangle found is used.

If MODE=4 5 6 7 12 ... (i.e. bit 3 set [add 4]) then a square algorithm is used to find the closest points. Otherwise all points are examined. Although using these MODEs could theoretically make the program run faster, it seems to generally run slower.

If MODE=8 9 10 ... (i.e. bit 4 set [add 8]) then a Delaunay triangle algorithm is used to find triangles. For these modes the  
DEPTH  
parameter  
should normally be set to 0. Also floating point calculations are still done even if  
INTEGER  
is set to YES.

If MODE=16 17 ... (i.e. bit 8 set [add 16]) then the closest triangles are only calculated once at the start (based on the average of start and end). This should only be used if the points do not move a lot between the start and end images. It can speed things up a lot for a lot of frames. It does not make sense to use this for Animated Warps/Morphs. This uses a lot of memory:

$$(\text{DEPTH} + 4) * \text{Image\_Width} * \text{Image\_Height} * 4$$

e.g. 640x512 image, DEPTH=2 uses 7.5 MB (contiguous) memory

Therefore MODEs 0 and 1 should be faster than modes 2 or 3. The DEPTH parameter can also have a major effect on the rendering speed.

See [Benchmarks](#)

### 1.156 TSMorph.guide/Benchmarks

Benchmarks  
=====

These benchmarks are based on a Morph provided by "Al Bet Sam That I'm Not Eloquent, Nancy Colours Eggs" <91016@tayloru.edu> of two 150x150 images with 41 control points.

Times are in seconds to generate the first frame on a 28MHz 68040 running in 32bit fast ram.

-----											
040 version   881 version   000 version   Note all running on ↔											
a 68040											
-----											
INT   FPU  INT   FPU  INT   FPU   INTEGER=YES/NO/NO											
-----											
MODE	DEPTH		AA		AA		AA	ANTIALIAS=NO/NO/YES			
-----											
0	0	6.2	9.1	13.9		11.9			Shows the effect of ↔		
DEPTH											
	5	12.0	15.2								
-----											
0	2	8.4	11.4	17.0	8.8	14.1	18.5	9.4	63.8	80.9	On a 68000 with 1MB ↔
chip ram, no											
1		8.1		8.5			x	fast ram...			
2		8.9									
4		13.4		22.8	13.6		23.3	x = 262 (9.4 * 28)			
8		7.6									
16		2.8		10.7			12.1				
17		2.5		8.9	2.6		10.3	3.2		45.5	
-----											
8	0	6.4									
-----											
15	0	7.1									
-----											
16	0	1.7	4.6	9.5	1.7	6.7	10.6	2.5		56.0	
-----											

### 1.157 TSMorph.guide/File\_Names

File naming  
\*\*\*\*\*

File names can include the frame number.

The format of the frame number in the file name is specified using the following formats:

```
%ld      : Number left justified e.g. '1','2',...,'10',...,'123',...
%3ld     : Number right justified e.g. ' 1',' 2',...,' 10',...,'123',...
%03ld    : Number right justified e.g. '001','002',...,'010',...,'123',...
```

Where the number can be changed e.g.

```
pic.%04ld  for Imagine 2.0 produced files
pic%03ld   for Vista produced files
name%ld    for files to run through mpeg
```

## 1.158 TSMorph.guide/Errors

Error Messages

\*\*\*\*\*

The following messages can be displayed in an  
Error Requester

.

```
Both Images must be the same size
Unable to Open Grid Requester
Both X Cells and Y Cells must be > 0
Out of memory for points
No ILBM.BMHD chunk
Failed to allocate raster
No ILBM.BODY chunk
Not an ILBM
Clipboard open failed
xxxx; File open failed
Parsing error; no top chunk
Not enough memory
```



---

Failure opening TSMorph Window  
Failure setting up screen  
Can not Open xxxx.library(n)  
Unable to Allocate FileRequest  
Unable to Create Window Message Port  
Can not Open input.device  
Image smaller than points  
Images different sizes  
Unable to Allocate Zoom raster  
Unable to SetMenuStrip  
Unable to OpenWindowTags  
Unable to AllocMem for Filename  
Unable to Allocate xxxx Gadget  
Unable to Allocate xxxx Image  
Failure loading Image 'xxxx'  
Unable to AllocIFF  
Unable to AllocMem for ILBMInfo  
Unable to GetScreenDrawInfo  
Unable to LockPubScreen(yyyy)  
Invalid file format - Line 'xxxx'  
Images are too small  
Point out of range - Line 'xxxx'  
Out of memory for points  
Invalid point link - Line 'xxxx'  
Error closing file 'xxxx'  
Error opening file 'xxxx'  
Error writing to 'xxxx'  
Point already linked to 16 points  
Point not linked

---

---

Cannot link point to itself  
Points already linked  
Cannot unlink point from itself  
Error no memory for new point  
Unable to Open xxxx.library(n)  
Error saving file 'xxxx'  
Error AllocVec for output  
Error Opening points file  
Error opening progress window  
Unable to allocate memory for bitmap  
Image must be 24 bit 'xxxx'  
Error loading 'xxxx'  
Size does not match image - Line 'xxxx'  
Out of memory for points  
Must have at least 3 points  
Error sending ARexx message - 'xxxx'  
Assuming version 1.0 file format  
Must have at least one frame  
Frames must all be the same size  
Failure - yyyy - loading 'xxxx'  
Error Saving Settings 'xxxx'  
Error Loading Settings 'xxxx'  
No opal.library  
File does not exist 'xxxx'  
Error opening screen  
Unable to get DrawInfo  
Unable to lock Workbench  
Invalid screen mode xxxx

---

TSMorph is attempting to close this ...

### 1.159 TSMorph.guide/Err-Size

Error - Both Images must be the same size

=====

This message should never be displayed.

Images different sizes  
should

be displayed instead.

Resolution - None required.

### 1.160 TSMorph.guide/Err-OpenGrid

Unable to Open Grid Requester

=====

TSMorph is unable to open the

Add Grid

requester. The normal reason

would be lack of memory.

Resolution - Free up some memory and retry.

### 1.161 TSMorph.guide/Err-Grid0

Error - Both X Cells and Y Cells must be > 0

=====

This message is displayed if the

Add Grid

requester is used and either

the

X Cells

or

Y Cells

is set to 0. The minimum allowed value is 1.

Resolution - Input at least 1 in both gadgets, or

cancel

the requester.

## 1.162 TSMorph.guide/Err-MemoryPoints

Error - Out of memory for points  
=====

This message is displayed after the  
Add Grid  
requester has been used  
and points and lines are being added to the images. Insufficient memory  
is available.

Resolution - Since it is possible that some of the points have been  
added to the images then you may wish to use the  
New Points  
menu item  
to delete all points. Then free up some memory and retry.

## 1.163 TSMorph.guide/Err-IFFBMHD

Error - No ILBM.BMHD chunk  
=====

The Image being loaded has no BMHD chunk.

Resolution - Specify the name of a correct ILBM image.

## 1.164 TSMorph.guide/Err-IFFRaster

Error - Failed to allocate raster  
=====

There is insufficient memory to load the ILBM image.

Resolution - Free up some memory and retry.

## 1.165 TSMorph.guide/Err-IFFBODY

Error - No ILBM.BODY chunk  
=====

The Image being loaded has no BODY chunk.

Resolution - Specify the name of a correct ILBM image.

---

### 1.166 TSMorph.guide/Err-IFFILBM

Error - Not an ILBM  
=====

The Image being loaded is not and ILBM file.

Resolution - Specify the name of a correct ILBM image.

### 1.167 TSMorph.guide/Err-IFFCLIP

Error - Clipboard open failed  
=====

The program is unable to open the specified clipboard.

Resolution - Retry with the correct clipboard number, or use a different file name.

### 1.168 TSMorph.guide/Err-IFFFileS

Error - xxxx; File open failed  
=====

File xxxx can not be successfully opened. The file does not exist (if trying to read), is already in use, or the filename is invalid.

Resolution - Retry with a valid file name.

### 1.169 TSMorph.guide/Err-IFFTop

Error - Parsing error; no top chunk  
=====

This is a technical error which should never occur.

Resolution - Unknown.

### 1.170 TSMorph.guide/Err-IFFMemory

Error - Not enough memory

=====

There is insufficient memory to save or load the IFF ILBM file.

Resolution - Free up some memory and retry.

### 1.171 TSMorph.guide/Err-OpenTSMorph

Error - Failure opening TSMorph Window

=====

The

Information Window

window could not be opened. There is probably insufficient memory.

Resolution - Free up some memory and retry.

### 1.172 TSMorph.guide/Err-SetupScreen

Error - Failure setting up screen

=====

The

Information Window

window could not be opened. Either the

Public Screen

is not open or there is insufficient memory.

Resolution - Free up some memory and retry, or correct the PUBSCREEN parameter.

### 1.173 TSMorph.guide/Err-Library

Error - Can not Open xxxx.library(n)

=====

The library xxxx version number n could not be opened. See Requirements

for a list of libraries required. It could just be a lack of ↔ memory.

Resolution - Ensure you are running at least version 2.04 of the operating system, or free up some memory and retry.

### 1.174 TSMorph.guide/Err-FileReq

Error - Unable to Allocate FileRequest  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.175 TSMorph.guide/Err-WPort

Error - Unable to Create Window Message Port  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.176 TSMorph.guide/Err-IDevice

Error - Can not Open input.device  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.177 TSMorph.guide/Err-ISmall

Error - Image smaller than points  
=====

The image trying to be loaded is smaller than the points already defined.

Resolution - Load a larger image, or select the  
New  
menu item and

---

restart.

### 1.178 TSMorph.guide/Err-IDifferent

Error - Images different sizes  
=====

This can be displayed when opening the second image in TSMorph. Both images must have the same horizontal and vertical resolutions. The image depths can be different.

Resolution - Either use a different pair of images, or change the size of one of the images using some image-processing program.

### 1.179 TSMorph.guide/Err-ZRaster

Error - Unable to Allocate Zoom raster  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry. If you still do not have enough memory then rerun specifying  
ZOOM=OFF  
as a parameter.

### 1.180 TSMorph.guide/Err-Menu

Error - Unable to SetMenuStrip  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.181 TSMorph.guide/Err-OpenWindow

Error - Unable to OpenWindowTags  
=====

Insufficient memory is available.

---



Resolution - Free up some memory and retry.

### 1.182 TSMorph.guide/Err-MemFile

Error - Unable to AllocMem for Filename  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.183 TSMorph.guide/Err-AllocGadget

Error - Unable to Allocate xxxx Gadget  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.184 TSMorph.guide/Err-AllocImage

Error - Unable to Allocate xxxx Image  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.185 TSMorph.guide/Err-LoadImage

Error - Failure loading Image 'xxxx'  
=====

There was an error loading the image xxxx. Another error message should previously have been displayed.

Resolution - See previous error message.

---

### 1.186 TSMorph.guide/Err-AllocIFF

Error - Unable to AllocIFF  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.187 TSMorph.guide/Err-AllocLBM

Error - Unable to AllocMem for ILBMInfo  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.188 TSMorph.guide/Err-GetDRI

Error - Unable to GetScreenDrawInfo  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.189 TSMorph.guide/Err-LockScreen

Error - Unable to LockPubScreen(xxxx)  
=====

Either the

Public Screen  
is not open or there is insufficient memory.

Resolution - Free up some memory and retry, or correct the  
PUBSCREEN  
parameter.

---

### 1.190 TSMorph.guide/Err-FileFormat

Error - Invalid file format - Line 'xxxx'

=====  
The points file being loaded is in an incorrect  
Format  
or is not a  
points file.

Resolution - Specify a correct points file or manually edit the file  
and retry.

### 1.191 TSMorph.guide/Err-TooSmall

Error - Images are too small

=====  
The images specified in the input file are too small.

Resolution - Either edit the input file - See  
Format  
, or select the  
New  
menu item and retry.

### 1.192 TSMorph.guide/Err-Range

Error - Point out of range - Line 'xxxx'

=====  
The point coordinates specified in the input file is larger than the  
image size.

Resolution - Manually edit the input file - See  
Format  
and retry.

### 1.193 TSMorph.guide/Err-MemPoints

Error - Out of memory for points

=====

---

Insufficient memory is available.

Resolution - Free up some memory and retry after selecting either  
New  
or  
New Points  
to delete existing points.

### 1.194 TSMorph.guide/Err-InvalidLink

Error - Invalid point link - Line 'xxxx'

=====

The points linking specified in the input file is invalid.

Resolution - Manually edit the input file - See  
Format  
and retry.

### 1.195 TSMorph.guide/Err-CloseFile

Error - Error closing file 'xxxx'

=====

The file xxxx could not be successfully closed. The disc may be full.

Resolution - If saving then save the file to a different disk or free up  
some disk space and retry with another name. The original file may not  
be accessible until after a reboot.

### 1.196 TSMorph.guide/Err-OpenFile

Error - Error opening file 'xxxx'

=====

The file xxxx could not be opened. The file does not exist (when  
reading), the name is invalid, the file is already in use, or the disk  
is write protected.

Resolution - Use a different file name or allow the disk to be written  
to.

---

### 1.197 TSMorph.guide/Err-WriteFile

Error - Error writing to 'xxxx'  
=====

The file xxxx could not be successfully written to. The disc may be full. The file has not been successfully saved.

Resolution - Save the file to a different disk or free up some disk space and retry.

### 1.198 TSMorph.guide/Err-4Points

Error - Point already linked to 16 points  
=====

Any point can only be  
    linked  
    to up to 16 other points. Note: the links  
are only for clarity and do not effect the rendering process.

Resolution -  
    Unlink  
    the current point from some other point and retry.

### 1.199 TSMorph.guide/Err-NotLinked

Error - Point not linked  
=====

The points just selected are not currently  
    linked  
    and cannot therefore  
be  
    unlinked  
    .

Resolution - None required.

### 1.200 TSMorph.guide/Err-LinkSelf

Error - Cannot link point to itself  
=====

---

A point can not be  
    Linked  
    to itself.

Resolution - Select another point to link to.

### 1.201 TSMorph.guide/Err-Linked

                    Error - Points already linked  
=====

The points you are trying to  
    link  
    are already linked.

Resolution - None required.

### 1.202 TSMorph.guide/Err-UnlinkSelf

                    Error - Cannot unlink point from itself  
=====

A point can not be  
    unlinked  
    from itself.

Resolution - Select another point to unlink from.

### 1.203 TSMorph.guide/Err-MemNewPoint

Error - Error no memory for new point  
=====

There is no memory to add the new point.

Resolution - Free up some memory and retry.

### 1.204 TSMorph.guide/Err-LibraryR

---

Error - Unable to Open xxxx.library(n)  
=====

The library xxxx version number n could not be opened. See Requirements for a list of libraries required. It could just be a lack of ← memory.

Resolution - Ensure you are running at least version 2.04 of the operating system, or free up some memory and retry.

## 1.205 TSMorph.guide/Err-Saving

Error - Error saving file 'xxxx'  
=====

Some error occurred saving the IFF ILBM output file. Another error requester may have previously appeared. Alternatively there could be a lack of memory. This error is also displayed when trying to save DCTV images in an invalid size.

Resolution - See the previous error message, or free up some memory and retry.

## 1.206 TSMorph.guide/Err-AllocVec

Error - Error AllocVec for output  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

## 1.207 TSMorph.guide/Err-OpenPoints

Error - Error Opening points file  
=====

The input file specified to TSMorph-render does not exist or is in an invalid format  
.

Resolution - Either specify a valid input file, or manually edit the points file.

---

## 1.208 TSMorph.guide/Err-Progress

Error - Error opening progress window

```
=====
Some error occurred opening the
      Progress
      requester in TSMorph-render.
Probably a lack of memory, or the
      PUBSCREENR
      parameter specifies a not
open public screen name.
```

Resolution - Free up some memory or correct the parameter and retry.

## 1.209 TSMorph.guide/Err-AllocPlanes

Error - Unable to allocate memory for bitmap

```
=====
Insufficient memory is available for some bitmap planes.
```

Resolution - Free up some memory and retry.

## 1.210 TSMorph.guide/Err-24

Error - Image must be 24 bit 'xxxx'

```
=====
The image xxxx being loaded by TSMorph-render is not a 24 bit image.
Only 24 bit ILBM images can be rendered.
```

This is an obsolete message which should not appear.

Resolution - Use TSMorph to specify a valid 24 bit ILBM image.

## 1.211 TSMorph.guide/Err-Load

---



Error - Error loading 'xxxx'  
=====

The image xxxx being loaded by TSMorph-render could not be loaded. A previous error requester could have appeared. The file name could be invalid.

Resolution - See the previous error message.

### 1.212 TSMorph.guide/Err-SizeMatch

Error - Size does not match image - Line 'xxxx'  
=====

The points file being loaded - See  
File Format  
- has an image size  
specified which does not match the image being loaded.

Resolution - Change the image size, manually edit the input file, or respecify the image name using TSMorph.

### 1.213 TSMorph.guide/Err-MemPointsR

Error - Out of memory for points  
=====

Insufficient memory is available.

Resolution - Free up some memory and retry.

### 1.214 TSMorph.guide/Err-3Points

Error - Must have at least 3 points  
=====

In order to correctly render an image at least 3 points must be defined.

Resolution - Use TSMorph to define at least 3 points - e.g. in 3 of the corners.

---

## 1.215 TSMorph.guide/Err-ARexx

Error - Error sending ARexx message - 'xxxx'

=====

TSMorph-render or TSMorph has had a problem sending the  
ARexx  
message.

ARexx may not be running, or the script may not exist or have errors.

Resolution - Ensure ARexx is running, check the scripts - See parameters

```

PRESCRIPT
,
POSTSCRIPT
and
LOADSCRIPT
, or
PREVIEW
- exist and have TSM

```

as a suffix.

If the above is OK then use TCO and TS to interactively trace the script.

## 1.216 TSMorph.guide/Err-OldFormat

Error - Assuming version 1.0 file format

=====

The current version of the  
File Format  
has a header record. This error  
is saying no header is present, it is assumed that the file is in an  
old format.

Resolution - Select OK to continue. Load and Save in TSMorph to save in  
the new format if required.

## 1.217 TSMorph.guide/Err-OneFrame

Error - Must have at least one frame

=====

This is displayed when trying to edit points on an Animated Morph/Warp  
when the number of frames is 0.

Resolution - Set the number of

---

```
frames
to at least 1.
```

## 1.218 TSMorph.guide/Err-AllSize

```
Error - Frames must all be the same size
=====
```

This is displayed when trying to change to a different frame. The size of all input images must be the same.

Resolution - Ensure all input images are the same size.

## 1.219 TSMorph.guide/Err-OpalVision

```
Error - Failure - yyyy - loading 'xxxx'
=====
```

opal.library had a problem loading image xxxx.

Resolution - yyyy should describe the problem.

## 1.220 TSMorph.guide/Err-SaveS

```
Error - Error Saving Settings 'xxxx'
=====
```

This message is displayed when TSMorph has been unable to save settings in the named file. If KEEPSETTINGS is set to YES then settings are saved in ENV:TSMorph/TSMorph.prefs when the program is quit.

Resolution - Supply a correct filename, set KEEPSETTINGS to NO, or create the directory ENV:TSMorph

## 1.221 TSMorph.guide/Err-LoadS

Error - Error Loading Settings 'xxxx'  
=====

TSMorph has had a problem loading the specified file. The file probably does not exist.

Resolution - Specify a correct file name

## 1.222 TSMorph.guide/Err-NoOpal

Error - No opal.library  
=====

TSMorph or TSMorph-render is trying to load an image using opal.library but it could not be opened.

Resolution - For TSMorph - If you do not have opal.library do not specify

OPENMODE=OPAL

. If you are not specifying this then the image you are trying to load must be in a format which TSMorph does not understand (this may be some unsupported JPEG variant).

For TSMorph-render - This is trying to load some unsupported image format.

## 1.223 TSMorph.guide/Err-NoFile

Error - File does not exist 'xxxx'  
=====

TSMorph is trying to load an image from a file which does not exist or is inaccessible.

Resolution - Specify a valid file name.

## 1.224 TSMorph.guide/Err-OScreen

Error - Error opening screen  
=====

TSMorph has been unable to open the requested screen. This could be because the

CUSTOMDEPTH

is too great for the

---

```
CUSTOMMODE
, there is not
enough memory, or some other related reason.
```

Resolution - Check you have enough memory, make sure the screen depth is OK for the screen mode.

### 1.225 TSMorph.guide/Err-DrawI

```
Error - Unable to get DrawInfo
=====
```

TSMorph has been unable to obtain some information from the Workbench, probably due to lack of memory.

Resolution - Free up some memory and retry.

### 1.226 TSMorph.guide/Err-LockW

```
Error - Unable to lock Workbench
=====
```

TSMorph has been unable to obtain some information from the Workbench, probably due to lack of memory.

Resolution - Free up some memory and retry.

### 1.227 TSMorph.guide/Err-SMode

```
Invalid screen mode xxxx
=====
```

```
The screen mode specified by
CUSTOMMODE
is not a valid screen mode.
```

Resolution - Check the screen mode against the list show in the preferences screen mode requester.

### 1.228 TSMorph.guide/Err-CScreen

---

TSMorph is attempting to close this ...

=====

TSMorph is trying to close the  
Public Screen  
that it opened but is  
unable to as there are locks (probably open windows) on the screen.  
Resolution - Close all other open windows on the screen and retry.

## 1.229 TSMorph.guide/Bugs

Known (and unknown errors)

\*\*\*\*\*

### \* Known Problems

- \* Unsaved project does not check that gadgets really have been edited.
- \* This guide sometimes has very long lines. Also bold items following \* are followed by too many spaces. This appears to be due to a problem with MakeInfo, menus and lists.
- \* This guide does not look correct when using amigaguide.library versions before 39. This will not be fixed.
- \* Fails to do anything if run on less than 2.04 (could display a message). This is unlikely to be fixed.
- \* Progress gadgets do not look to good using 2.04. They do look OK when using 3.0+. This will not be fixed.
- \* 24 bit ILBMs are loaded into Chip memory. If you do not have enough, then convert the input images to PPM or JPEG first. (Thanks to Jamie Cope).

### \* Unknown Problems?

- \* Image validation requires tidying up - especially with anim morphs/warps.
- \* TSMorph and TSMorph-render may not release all memory.
- \* TSMorph-prefs has not been well tested.
- \* TSMorph may open zoomed large windows with corruption.
- \* Width and Height in the parameter file may not be correctly set and require manual editing.

Please report any other bugs by EMail to mark@topic.demon.co.uk or

mpaddock@cix.compulink.co.uk.

## 1.230 TSMorph.guide/Hard-Software

Hardware and Software used in development

\*\*\*\*\*

- \* HSPascal Editor.
  - \* SAS C Code.
  - \* GadToolsBox Info, Add Grid and Progress Windows.  
GadToolsBox is © Copyright 1991,92 Jaba Development.
  - \* DPaint Control Window gadgets/Pointers.
  - \* Workbench 2.04 GUI.
  - \* MakeInfo Documentation.
  - \* Iff2Src Control Window gadgets. Iff2Src is © J  
Tyberghein.
  - \* ILBMtoC Pointers.
  - \* IconEdit Pointers.
  - \* NewIff Various IFF routines.
  - \* ReqTools For nicer requesters. ReqTools is © 1991/1992  
Nico François
  - \* OpalVision For opal.library for easy file loading and  
saving. OpalVision is a trademark of Opal Technology Pty Ltd.
  - \* DCTV For dctv.library for saving and loading DCTV  
images. DCTV is © 1991,1992 Digital Creations, Inc.
  - \* IJG JPEG software For the PPM, TARGA, GIF and JPEG file loading  
code.
  - \* EGS For the EGS interface.
  - \* AG2TXT For the .doc file. AG2TXT is Copyright (c)  
1993 Jason R. Hulance.
  - \* Fenster To capture the windows
  - \* MKANIM To generate Animations. MKANIM is Copyright ©  
1993 by John Bickers.
  - \* Viewtek To display Animations. Viewtek is © 1992  
Thomas Krehbiel.
-

- \* Commodore Amiga 2000 with 1MB chip ram,
- \* Commodore 1960 monitor,
- \* GVP SCSI hard card with 52MB Quantum disc,
- \* RCS Fusion Forty accelerator with 8MB fast ram.

## 1.231 TSMorph.guide/History

### Version History (since 2.0)

\*\*\*\*\*

- \* Version 3.0
    - \* Recompiled using SAS/C 6.51.
    - \* Added 68040 version.
    - \* Now correctly handles AGA palettes.
    - \* Installer now included. (Thanks to Perry Horner).
    - \* Fixed a problem with the EGS pointer (Thanks to Darren Eveland).
  - \* Version 2.5
    - \* Major Enhancements
      - \* Added EGS support to  
TSMorph  
and  
TSMorph-render  
.
      - \* Added  
INTEGER  
parameter to TSMorph-render. This should  
make the program run faster, but the output will not be  
as good. The Icon supplied for the non FPU version has  
INTEGER=YES set by default, the default  
preview  
script  
also sets this.
      - \* Added  
MODEs  
4 to 31. This changes the  
Settings  
menu.
      - \* Added  
Triangulate
-



menu item to convert point links to triangles. Points can now be linked to up to 16 other points.

- \* Added a short tutorial - See Tutorial/Tutorial.readme "Tutorial/Tutorial.readme/Main"}.
- \* Added documentation in plain text format - See TSMorph.doc. (Thanks to Perry Horner).
- \* Added documentation in .html format - Mosaic is required to view this.

\* Minor Enhancements

- \* Edited the graphics in this guide. It will only look correct under the OS3.0+ version of AmigaGuide.library.
  - \* When trying to close the Public Screen TSMorph will display an error if any other windows are open.
  - \* Horizontal and Vertical gadgets are now correct on 2 colour screens.
  - \* Added REQTOOLS parameter to TSMorph and TSMorph-render .
  - \* TSMorph-render now uses nofrag.library for memory allocation if available.
  - \* Added new prescript example script to render all frames.
  - \* Added new Hints & Tips section.
  - \* Sped up the remapping of normal ILBM images.
  - \* Install script now determines 68020/881 correctly itself.
  - \* Added some new ARexx
-

scripts to generate animations.

\* Bug Fixes

\* Fixed a very silly bug with the DEPTH parameter. It was always read as at least 20. This should speed up rendering.

\*

TSMorph-prefs  
and  
TSMorph  
set  
ANTIALIAS  
and  
HELP

correctly when Reset to Defaults.

\* Some fixes to the default PREVIEW script. (Thanks to Stefan Haubenthal).

\*

TSMorph-prefs  
now correctly sets the  
Render mode

.

\* Output images should not have garbage on the right hand side.

\* Lots of minor code and docs changes.

\* Version 2.4

\* Fixed bug where if 1st image for a Morph was loaded to convert the first frame then the second image was never loaded.

\* Version 2.3

\* Enhancements

\*

Keyboard  
shortcuts added to  
Edit  
windows to change

Edit Mode  
(this prevents any screen flicker when

CHANGEPALETTE  
is set to YES).

---

---

\* Bug Fixes

- \* Sensible message is displayed if opal.library is not present and an input image does not exist in TSMorph-render.
- \* TSMorph-render no longer attempts to load unnecessary images and point files for the first and last frames.
- \*  
PREVIEW  
can now be longer than the default value without causing public screen name problems.
- \*  
TSMorph-prefs  
no longer resets preferences to defaults if  
Open...  
is cancelled.
- \*  
Zoom?  
menu item now works on the  
Info  
window.
- \* No longer opens project  
SETTINGS=  
settings file twice.
- \* Title of file requester to  
Open Project  
is now Load  
Project not Load File.
- \* Major source code clean up.
- \* Source code is now available. Distribution is under GNU  
General Public Licence. See  
distribution  
.

\* Version 2.2

\* Major Enhancements

- \* Added  
Anti-Alias  
capability to TSMorph-render.
  - \* Added ability to TSMorph and TSMorph-render to load a large variety of image formats (JPEG, ILBM (including 24 bit, EHB, HAM6, HAM8 and DCTV with dctv.library), TARGA, GIF and PPM). See
-

OPENMODE  
and  
LOADSCRIPT  
.

- \* Added a lot more save formats (grey 16, grey 256, HAM 6, HAM 8 and DCTV3 and DCTV4 [with dctv.library]).

- \* Added continuous help option, and Help Text gadget to TSMorph.

- \* Added the Preview option to preview render an image. See

Preview...  
,  
Preview...  
and  
PREVIEW  
.

- \* Added the ability to open custom screens.

- \* Can now save the first and last images - see Prescript  
.

- \* Added preferences editor TSMorph-prefs  
.

#### \* Minor Enhancements

- \* Loading Image requester is displayed. See OPENMODE  
.

- \*  
24 File 1  
and  
24 File 2  
gadgets can now be left blank to use the File One and File Two names.

- \* MakeInfo 1.55 used. This doc now has more formatting.
  - \*
    - Progress requester now shows a list view of messages.
  - \* Bug Fixes
    - \* Image remapping should be more correct.
    - \*
      - Edit/Mode sub-menu has a capital E.
    - \* Should no longer leave the Screen with the incorrect palette when TSMorph is quit.
    - \* Fixed a nasty memory corruption bug with DX and DY.
    - \*
      - Control Window gadgets now look more correct on screens with more than 4 colours.
    - \* Fixed a bug where parameters were automatically reset when opening a project.
    - \*
      - Open Points... no longer resets Morph parameters.
    - \*
      - Load Settings... now works.
    - \*
      - DEPTH parameter can now be greater than the number of points without memory corruption.
    - \* TSMorph window is correctly disabled when saving after Unsaved Project requester is displayed.
    - \* Uses less memory for Zoom raster.
-

- \* TSMorph opens amigaguide window on screen specified by PUBSCREEN.
- \* String requesters will now accept empty strings.
- \* Version 2.0a
  - \* Minor update to the File Format description. (Includes Anim Morphs and Warps).
  - \* ENV/TSMorph/def\_points now has Stack set to 8192. (Prevents crashes when using opal.library).
  - \* Render Public Screen menu item is disabled if regtools.library is not available. (Previously crashed if selected).
  - \* Only relevant OPENMODE is ALWAYS if opal.library is not available (Thanks to spark@cix).
  - \* Screen is automatically brought to the front when the first window opens.

## 1.232 TSMorph.guide/Hints

### Hints & Tips

\*\*\*\*\*

This section supplies some hopefully useful information which may not be immediately apparent elsewhere.

#### Speed?

If you do not have an FPU then set the INTEGER parameter to YES. Even if you do have an FPU this may still make things run faster.

If it still slow then try changing DX and DY to 1 (or more).

If you have lots of memory then setting the precalculate part of MODE (16) should help.

#### What MODE?

This depends on the type of Morph.

---

If you are, say, rotating some text on a background, then it is probably best to set the stationary part (1). You would NOT want to set the precalculate once part (16).

If you are morphing, say, two faces where the points do not move much between the first and last image then it may be best to set the precalculate part (16) (provided you have enough free memory). Setting the Delaunay part (8) may also be a good idea.

Setting search (2) is probably not a good idea.

Not enough memory for TSMorph

If you run out of Chip memory when trying to load large images then try setting ZOOM to OFF.

HAM output has fringing

A very simple algorithm is used for generating HAM output. If the output is not acceptable then the best idea is to output some other format (ILBM24 or PPM) and then run a proper image conversion program on the output (possibly as part of the Postscript script).

### 1.233 TSMorph.guide/Distribution

Copyright and distribution requirements

\*\*\*\*\*

TSMorph - Amiga Morphing program  
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mark@topic.demon.co.uk  
mpaddock@cix.compulink.co.uk

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Please send any criticisms, bugs, etc. by EMail to  
mark@topic.demon.co.uk or mpaddock@cix.compulink.co.uk.

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CompuServe Incorporated. GIF(sm) is a Service Mark property of  
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The Delaunay code was written by Dave Watson and uses the algorithm ←  
described in -  
Watson, D.F., 1981, Computing the n-dimensional Delaunay tessellation ←  
with  
application to Voronoi polytopes: The Computer J., 24(2), p. 167-172.

Installer and Installer project icon  
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## 1.234 TSMorph.guide/TSMorph-prefs

Preferences editor

\*\*\*\*\*

TSMorph-prefs is a standard preferences editor.

When loaded it loads the current  
settings  
from

ENV:TSMorph/TSMorph.prefs. It then displays a window showing all  
the preferences.

Help displays context sensitive help using amigaguide if available.

Gadgets

Gadgets displayed in the Preferences Window

Menus

Menus available in the Preferences Window

## 1.235 TSMorph.guide/TSMP-gad



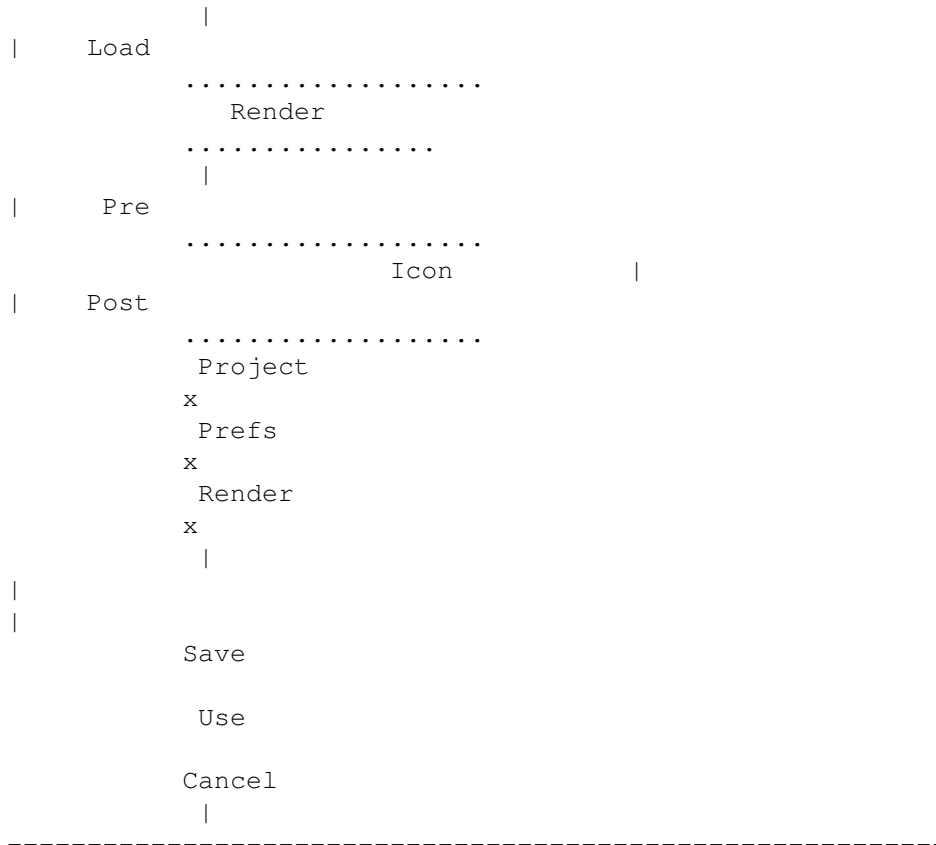
TSMorph-prefs Gadgets

=====

```

-----
|
|      .
|      | TSMorph Preferences |
|
|
|
|-----|
| Custom Screen          Render                TSMorph |
|
|      NONE-----|
|      DX
|      |---
|      0 DY
|      |---
|      0      Zoom
|      YES
|
|
|      PAL:Low Res--|
|
|      Mode
|      Palette
|      YES
|
|
|      PAL:High Res-|
|
|      Save Format
|      --|-
|      75      Mode
|      IFCOLOURS
|
| Depth
|      --|---
|      4 AA
|      x
|      Int
|      x
|      Dep
|      -|-
|      5      Prefs
|      x
|      Help
|      x
|
|      ARexx Script          Public Screen |
| Preview
|      .....
|      TSMorph
|      .....

```



System gadgets

```

    Close
    Close gadget

    Zoom
    Zoom gadget

    Depth gadget
    Depth gadget
  
```

Custom Screen

```

    Screen mode
    Custom screen mode

    Depth
    Custom screen depth
  
```

Render

```

    DX
    Render X skip

    DY
    Render Y skip
  
```

---

Mode	Render mode
Save Format	Render image format
Quality	JPEG Quality
AA	AntiAlias images
Int	Use Integer maths
Dep	Rendering depth

## TSMorph

Zoom	Zoom images
Palette	Change palette
Mode	Open mode
Prefs	Keep preferences
Help	Continuous help

## ARexx Script

Preview	Preview script
Load	Load image script
Pre	Pre render script
Post	Post render script

## Public Screen

TSMorph	TSMorph public screen
---------	-----------------------

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	Render	Render public screen
Icon		
	Project	Project Icons
	Prefs	Preferences Icons
	Render	Render Icons
Exit gadgets		
	Save	Save preferences
	Use	Use preferences
	Cancel	Cancel

### 1.236 TSMorph.guide/TSMP-Close

TSMorph-prefs Close gadget  
-----

This closes the window and discards any changes.

### 1.237 TSMorph.guide/TSMP-Zoom

TSMorph-prefs Zoom gadget  
-----

This is a standard zoom gadget and zooms the window to/from a title bar.

### 1.238 TSMorph.guide/TSMP-Depth

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TSMorph-prefs Depth gadget  
-----

This is a standard depth gadget.

### 1.239 TSMorph.guide/TSMP-Save

TSMorph-prefs Save gadget  
-----

This save the  
    settings  
    in ENV:TSMorph/TSMorph.prefs and  
ENVARC:TSMorph/TSMorph.prefs.

Any changes are not picked up until TSMorph or TSMorph-render is reloaded.

### 1.240 TSMorph.guide/TSMP-Use

TSMorph-prefs Use gadget  
-----

This save the  
    settings  
    in ENV:TSMorph/TSMorph.prefs.

Any changes are not picked up until TSMorph or TSMorph-render is reloaded.

### 1.241 TSMorph.guide/TSMP-Cancel

TSMorph-prefs Cancel gadget  
-----

This closes the window and discards any changes.

### 1.242 TSMorph.guide/TSMP-men

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### TSMorph-prefs Menus

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The following menus are available on the TSMorph-prefs Window:

Project	Project menu
Edit	Edit menu
Settings	Settings menu

## 1.243 TSMorph.guide/TSMP-men-Project

### TSMorph-prefs Project menu

-----

This menu contains the following items with their associated Amiga short-cuts in the TSMorph-prefs Window:

Open...	O	Open a preferences file
Save As...	S	Save a preferences file
Quit	Q	Quit

## 1.244 TSMorph.guide/TSMP-men-P-Open

### TSMorph-prefs Project/Open... menu item

.....

This displays a file requester to load the settings  
 . The default name  
 is TSMorph.prefs in the current directory.

## 1.245 TSMorph.guide/TSMP-men-P-SaveAs

TSMorph-prefs Project/Save As... menu item

.....

This displays a file requester to save the settings  
. The default name is TSMorph.prefs in the current directory.

## 1.246 TSMorph.guide/TSMP-men-P-Quit

TSMorph-prefs Project/Quit menu item

.....

This closes the window and discards any changes.

## 1.247 TSMorph.guide/TSMP-men-Edit

TSMorph-prefs Edit menu

-----

This menu contains the following items with their associated Amiga short-cuts in the TSMorph-prefs Window:

Reset To Defaults	D	Reset preferences to defaults
Last Saved	L	Load preferences from ENVARC:
Restore	R	Load preferences from ENV:

## 1.248 TSMorph.guide/TSMP-men-E-ResetD

TSMorph-prefs Edit/Reset To Defaults menu item  
.....

This resets the  
settings  
to their default values.

### 1.249 TSMorph.guide/TSMP-men-E-LastS

TSMorph-prefs Edit/Last Saved menu item  
.....

This loads the  
settings  
from ENVARC:TSMorph/TSMorph.prefs.

### 1.250 TSMorph.guide/TSMP-men-E-Restore

TSMorph-prefs Edit/Restore menu item  
.....

This loads the  
settings  
from ENV:TSMorph/TSMorph.prefs.

### 1.251 TSMorph.guide/TSMP-men-Settings

TSMorph-prefs Settings menu  
-----

This menu contains the following items with their associated Amiga short-cuts in the TSMorph-prefs Window:

Create Icons? I  
Create preference Icons



## 1.252 TSMorph.guide/TSMP-men-S-Icons

TSMorph-prefs Settings/Create Icons? menu item

This item toggles if Icons are to be saved with  
Settings

files. If it is selected then an Icon will be saved. The icon will come from ENV:TSMorph/def\_prefs if this exists, secondly from ENV:SYS/def\_prefs, otherwise the default project Icon is used.

This menu item is similar to but can have a different value to the

CREATEICONSP  
parameter.

## 1.253 TSMorph.guide/Index

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\*\*\*\*\*

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ANTIALIAS=	Par-TSMorph-render

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CREATEICONS=	Par-TSMorph

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Zoom gadget

TSMP-Zoom

Zoom gadget

E-gad-Zoom

ZOOM=

Par-TSMorph

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