

NAVIGATOR

COLLABORATORS

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|---------------|-----------------------------|------------------|------------------|
| | <i>TITLE :</i> NAVIGATOR | | |
| <i>ACTION</i> | <i>NAME</i> | <i>DATE</i> | <i>SIGNATURE</i> |
| WRITTEN BY | | February 7, 2023 | |

REVISION HISTORY

| NUMBER | DATE | DESCRIPTION | NAME |
|--------|------|-------------|------|
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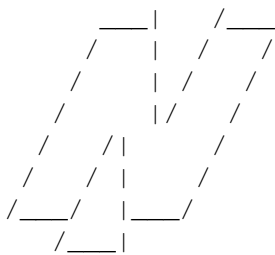
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Chapter 1

NAVIGATOR

1.1 NAVIGATOR User Guide



NAVIGATOR WORLDVIEWER

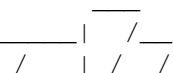
a virtual reality presentation system for the Amiga

Introduction
Design and Coding by :
Distribution

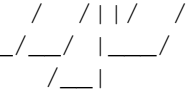
System requirements
Michiel den Outer
Installing
Populierenlaan 59
Loading
2925 CP Krimpen a/d IJssel
Control
The Netherlands
WorldCreator

Contacts
This WorldViewer can be
freely distributed.

1.2 NAVIGATOR Introduction



NAVIGATOR INTRODUCTION



NAVIGATOR is a virtual reality system for the Amiga computer. It allows you to walk/drive and fly around a computer generated world in realtime.

Applications include :

- architectural walkaround systems
- 3D titling
- 3D computer games
- Flight simulators
- Racing games
- virtual art gallery
- prototyping
- music video's
- product presentation

The NAVIGATOR WORLDVIEWER can be used in the following ways :

- live at your presentation
- to make a videopresentation
- to make colourprints
- for design and analysis purposes

Since computer power is limited a realtime 3D computer model is always a compromise between graphic detail and animation speed. Therefore pictures generated by this program can't be compared to photorealistic images produced by 3D modelling software like Lightwave.

However a realtime interactive model has a lot of advantadges over a precalculated animation :

| | |
|-------------------------|-----------------------|
| Precalculated Animation | Virtual Reality Model |
| ----- | |

Immersion

| | |
|---|---|
| Looking at an non interactive animation is like looking through a window : the world looks convincing through a door. You can walk around, but you are no part of it. | Entering a realtime interactive computer model is like stepping through a door. You can walk around, look around and get the feeling of actually being there. |
|---|---|

Interactivity

| | |
|---|--|
| The animation is fixed and cannot be changed. | At any time you control the position and orientation of the viewpoint. |
|---|--|

Animation

| | |
|--|--|
| Artificial, mathematical movements like perfect lines, circles etc | Since the animation is interactive all movements are as natural as they can be |
|--|--|

Cost

| | |
|-----------------------------------|-----------------------------------|
| Rendering a single photorealistic | No computing costs, everything is |
|-----------------------------------|-----------------------------------|

frame takes hours even on the fastest computers. Considering that an animation must be at least 25 frames a second, this kind of computer animation is very expensive.

Hardware requirements

-a fast processor -a fast processor
 -megabytes of memory
 -gigabytes of disk space

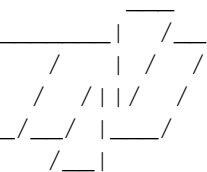
Completeness

You see what the animator wants you to see. This means that you get an incomplete, subjective impression. By looking around you can see the object from it's best but also from it's worst side. This means that you get a complete and objective impression.

I hope you agree that a realtime interactive model gives you the best impression at the lowest cost !

1.3 NAVIGATOR System Requirements

NAVIGATOR SYSTEM REQUIREMENTS



This version requires: - a 68020 CPU or higher
 - Amiga DOS 2.04 or higher
 - a 15 mhz monitor

AGA users will enjoy 24 bit colours, a 128 colour copper background and 256 colours in all resolutions. Older machines are limited to 32 colours.

You can make your animation more smooth by installing :

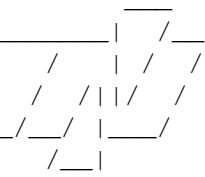
-fast ram
 -32 bit ram
 -a faster/newer processor

-NAVIGATOR is not very memory hungry, but be sure to have some fast ram because it's twice as fast.

-Since this program uses integer maths the use of a FPU will not effect performance at all.

1.4 NAVIGATOR Installing

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NAVIGATOR INSTALLING
```

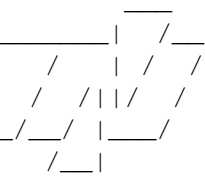


To install NAVIGATOR simply drag the NAVIGATOR icon to the desired place on your harddisk.

The workbench file you need is :
-asl.library in the libs directory

1.5 NAVIGATOR Loading

```
NAVIGATOR LOADING
```



Double click it's icon from the workbench to run the program. A filerequester will be presented allowing you to select and load a world from disk.

You can also start the program from the Shell and use the worldfile as an argument.

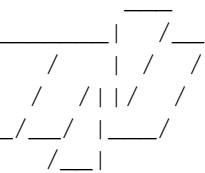
Example : NAVIGATOR worlds:games/jaguar.NAV

It's possible to immediately start a recording file

Example : NAVIGATOR worlds:games/jaguar.NAV worlds:games/jaguar.REC

1.6 NAVIGATOR WorldCreator

```
NAVIGATOR WORLDCREATOR
```

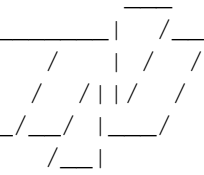


The NAVIGATOR WORLDCREATOR and fileformat are currently not published and will not be in the near future.

All NAVIGATOR applications are developed in-house.

1.7 NAVIGATOR Control

NAVIGATOR CONTROL



<F1> WALK MODE

- use mouse up/down to walk forward/backwards
- use mouse left/right to change direction
- use mouse left/right with right button pressed to step to the left/right
- use mouse up/down with left button pressed to look up/down
- use mouse up/down with both buttons pressed to control height

<F2> DRIVE MODE

- use mouse left/right to steer
- use +,- keys to control speed

<F3> FLY MODE

- use mouse left/right to roll
- use mouse up/down to climb/dive
- use +,- keys to control speed

<F4> ROTATION MODE

By pressing this key you start rotating around your current position.

- use mouse up/down with both buttons pressed to control the radius.
- use mouse with right button pressed to control the angles.

<F5> SHADED HORIZON

Uses Amiga's famous Copper chip to produce a shaded horizon.

<F6> DRAW MODE

1 SOLID

Most realistic mode

2 WIREFRAME

Perfect for understanding constructions

3 SOLID, B&W

Perfect for b&w printing

4 WIREFRAME, B&W

<F7> SURFACE DETAIL

<F8> GRAPHICS ENGINE (What code is used for graphic operations)

1 ROM (AmigaDOS graphics library functions)

Since these functions are part of the operating system they should always work. But for maximum performance you have to hit the hardware more directly.

2 CPU (Motorola 020 code)

The fastest method for the fastest Amiga's. Fasten your seatbelts for the 68040 !!!

<F9> SYSTEM STATE

1 KILLSYSTEM

-128 colour custom copperlist

-multitasking is turned off

-interrupts are still working, so playing a Protracker module in the background is possible.

2 OPERATING SYSTEM FRIENDLY

-multitasking is ON

-uses 2 intuition-screens for screen swapping.

-press p to pause.

<F10> RESOLUTION

1 LOW

320*256 pixels (PAL: Low Res, No Laced)

2 HIGH

640*512 pixels (PAL: High Res, Laced)

o OVERSCAN

The Amiga is capable of filling the entire screen which is perfectly suitable for video applications. Use this screen mode if you want to prevent the boxed computer look.

1 INTERLACE

Use this for video applications

<,> VIEWANGLE

Using a higher Viewangle rises the perspective and gives the suggestion of a wider and bigger world. Use this variable the same way a photographer uses his zoom lens.

z,x DETAIL LEVEL

Use a low level to simplify the model or to increase animation speed.

(,) ROTATION SPEED (1/16 Degrees / 1/50 sec)

-,+ TRANSLATION SPEED (unit / 1/50 sec)

-> Please note that these variables are completely independent of the animation speed : it is possible to walk very slowly in 50 frames a second and fly at mach2 in 1 frame a second.

8 WINDOW SIZE

4 6 Use your numeric keyboard to adjust the window.

2

g GREY/COLOURS

Left Blank Key 24 BITS/12 BITS COLOURS

If you have an Amiga 1200 you can force NAVIGATOR to use 12 bit colours.

i INTENSITY COLOURS

The Amiga is capable of producing 'illegal' colours. These colors look fine on a monitor but when they are put on video tape the results can mean a terrible picture. This option tries to prevent this effect by keeping the colour values below 200

<Spacebar> NORMALIZE Viewpoint and Viewdirection

-height=170 (normal human eye height)

-no banking (horizon is horizontal)

<Help> INFO SCREENS

cycles through the info screens

-> NAVIGATOR uses the same font as your workbench. NAVIGATOR assumes the font to be 8 pixels wide.

Please note that by displaying this screen, the animation speed will slow down.

<Esc> QUILTS PROGRAM

<1> Start recording

<2> Stop recording/stop playing

<3> Play once

<4> Play loop

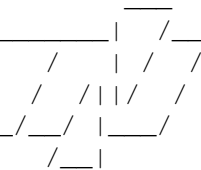
<5> Load record

<6> Save record

- b SHOW BOUNDING BOXES
- e STEP TROUGH ELEMENTS
- c STEP TROUGH CONVEX OBJECTS

1.8 NAVIGATOR contacts

NAVIGATOR CONTACTS



If want a NAVIGATOR model of your design, please contact me at the following address :

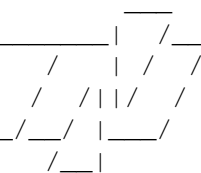
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Populierenlaan 59
2925 CP Krimpen a/d IJssel
The Netherlands

Phone +31(0)1807-20798

After 10/95 : +31(0)180-520798

1.9 NAVIGATOR Distribution

NAVIGATOR DISTRIBUTION



The NAVIGATOR VR system is copyrighted (C) 1994-1995 by Michiel den Outer.

All Rights Reserved.

The NAVIGATOR WORLDVIEWER is freeware.
