

ReadMe

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REVISION HISTORY

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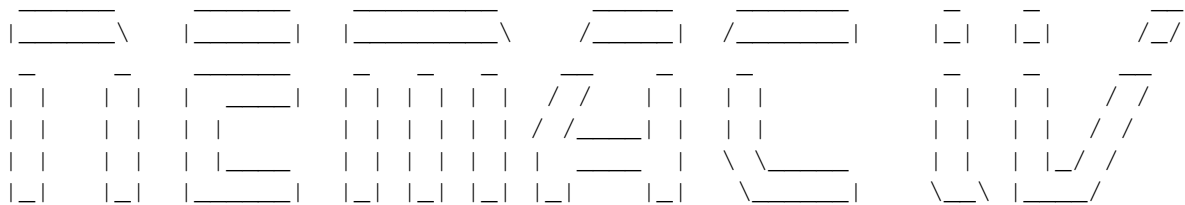
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Chapter 1

ReadMe

1.1 ReadMe.guide



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Oliver Groth - Martin Schlott

ReadMe.guide

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Please read the complete ReadMe.guide before you start NEMAC IV!

Contents:

- Requirements
- Copyright/Legal Stuff
- How to Start NEMAC 4
- Preferences
- The Game
- Story of NEMAC 4
- Some Hints
- The .config-File

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DraCo  
Troubleshooting  
Thanks to ...

## 1.2 The .config file

You can do additional preferences for i-glasses! or Graffiti in the .config file that is in the NEMAC\_4 directory.

These are the possible commands:

IGL-BAUD  
IGL-TFILTER  
IGL-MFILTER  
IGL-SMOOTH  
IGL-PRE  
DEVICE

GRA-WINLEFT

JOYSTICK

GRA-WINLEFT <x> is the only one command for Graffiti. This hardware may possibly need another screen position in horizontal direction. Our prototype needed often another value than it is written in the documentation. So we decided to make this configurable. You can enter (positive and negative) numbers. First you should try to use the values given in the Graffiti documentation. If these are not suitable you should experiment a little bit. Please note that a softscroll value of 1 is 2 for this command! Always use even numbers. ("GRA\_WINLEFT 2")

IGL-BAUD <x> is the baud rate you want to use for communications with your i-glasses! The default value is 19200 baud and that should only be altered when your serial device or cabling has difficulties at this speed. The baud rate should be as high as possible to get a good mean value of the headtracker, but it may not be greater than 19200 baud.

IGL-TFILTER <x> and IGL-MFILTER <x> are the i-glasses! tilt and magnetic filtering. Here you can enter values between 0 and 7. What these filters exactly do depends obviously on the version of your i-glasses! and you should read the documentation for further information. Our i-glasses! ran best with values of 7 for both commands.

IGL-SMOOTH <x> and IGL-PRE <x> are commands for our own headtracker soothing routines. This was necessary because the headtracker gives inaccurate values for the heading direction. If you enter values of 0, smoothing is disabled. IGL-SMOOTH means from how many values a mean value is calculated. This should be between 0 and 20. IGL-PRE precalculates the heading from the actual movement and should have a value between 0 and 6. If you are dissatisfied with the default values you might experiment a little bit, but, it is very difficult to try to get accurate values from inaccurate ones. :-)

DEVICE <name>: You can enter a name of a alternative serial device which is connected with your i-glasses!

JOYMILLI <x> tells how often the joystick will be questioned. Please use this option only if the joystick acts still too inaccurate. Here <x> is how many milliseconds to wait before questioning the joystick again. Valid values are between 5 and 50 milliseconds. Default value is 20. Please keep in mind that the smaller the count is the more often the Joystick is questioned, and it causes a little bit more system load, this means that it could run a little bit slower an "small" machines using a small value.

### 1.3 How to Start NEMAC 4

NEMAC\_4 can be started by a double click on the icon via Workbench ←  
or in  
a shell. If you start it from a shell, you have to cd into that directory,  
because otherwise the maze.cld can not be found.

If you want to save screenshots (be careful, an extra Buffer is allocated!), you have to start it from a shell with the option s<name>!<x-size>!<y-size>. If you start it up for example typing "NEMAC\_4 spic!320!256", every time you press "s" in the game a snapshot of the window will be saved, named "pic.0001", "pic.0002" and so on, sized 320x256 pixels. The screenshot is saved in the actual directory, so copy it to your harddisk first!

If you started the game, the  
Preferences  
requester  
appears on the default public screen.

### 1.4 Preferences

If you start NEMAC IV, the preferences requester appears:

Select Screenmode

<Selected Screenmode>

Close Workbench

Chunky To Planar Modus

Memory size

i-glasses! Mode

Keyboard Config

Save

---

USE

Quit

---

## 1.5 <Selected Screenmode>

Here the current selected screenmode is shown by name.

## 1.6 Select Screenmode

If you click this button, a screenmode requester appears.

In the left window the suitable screenmodes found on your Amiga are shown, in the right one you can see some informations about the current selected screenmode (frequencies, number of colours etc.)

All screenmodes more than 160 pixels width and more than 128 lines high, extra halfbrite mode or a depth of 8 bitplanes are shown.

Please have a look at the frequencies of the selected screenmode. If they go over the ones in your monitor's specification you have a good chance to destroy it.

## 1.7 Close Workbench

Closes the Workbench if no other program runs on the Workbench screen. This gives you some bytes of Chip Memory if you are short on RAM.

## 1.8 Chunky To Planar Modus

Chunky 2 Planar mode: Here you can select the method of converting the rendered chunky data into the screen's bitplane mode. CPU+Blitter is recommended for all Amigas with a CPU < 68060 :-) CPU+Blitter is disabled for Amigas with the old Blitter, because it is not capable of moving the required amount of memory.

Chunky to planar means the method of converting the chunky raw data so that you can see it on screen. The picture that is rendered lies in chunky raw format in memory, that means that every one byte represents one pixel. If you use bitplane-orientated screens, these pixels must be spread over eight bytes.

If you have selected a gfx-board screenmode or Graffiti output, this button is disabled because no conversion is needed.

---

## 1.9 Memory size

LARGE: The program tries to allocate 1.7 MB RAM. Here you can achieve best graphics detail.

SMALL: Now the program just tries to get 840 KB RAM. Now the textures and monsters have less detail so they fit into this tiny amount of memory :-)

AUTO: If you have selected this option, the program first tries to allocate 1.7 MB, and if this fails, 840KB with the corresponding loss in detail.

## 1.10 i-glasses! Mode

This button gives you six options:

Off: Nothing of the i-glasses! is supported  
Use: 3D output for i-glasses! is enabled  
Use/Trk: 3D output for i-glasses! and the headtracker are enabled, you can look left and right, but don't run in the direction you look  
Use/Hd Trk: 3D output for i-glasses! and the headtracker are enabled and you run always the direction you look.  
Tracker: Only the headtracker is enabled, you can look left and right, but don't run in the direction you look  
Head Trk: Only the headtracker is enabled and you run always the direction you look.

To get a correct 3D output, please make sure that an INTERLACE mode is selected that the i-glasses! can display (i.e. PAL or NTSC interlace)

## 1.11 Save

Here the current preferences are saved to ENV:NEMAC\_4.prefs and ENVARC:NEMAC\_4.prefs.

## 1.12 Use

Here you start the game with the current preferences.

## 1.13 Quit

Never press this button :-)

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## 1.14 The Main Menu

The main menu looks like this:

```
START NEW GAME - Starts a new game at the first level.
LOAD OLD GAME  - here you can load and play an old saved game.
                  Make your selection using cursor up/down,
                  Shift and cursor up/down for jumping a page
                  forward/backwards and <RETURN> for selecting
                  a game. If you press <ESC> you come back to the
                  main menu.
INTRO          - Shows the intro once again.
QUIT           - Quits immidately
```

Loading of a level takes about 10 seconds, because 1 to 2 MB of data must be read and remapped to the current colour map.

## 1.15 The Game

If the level is loaded, you will 'wake up' in the starting room. On the screen you see how many ammunition, what door codes and how many life energy you have.

By pressing <right> key you turn right, by pressing the <left> key you turn left, of course. By pressing the <speedup> key you run faster.

If you press the <strafe> key and hit the <left> or <right> key, you will go left or right, not turn.

If you shoot, please keep in mind that the bombs do not explode when they hit the ground, they explode by pressing the <ex bombs> key in the order of throwing them out. Of course, bombs can also attached to monsters and objects. It might appear that a bomb doesn't explode immidately. If that occurs it will do so if it thinks it is the right time to do it :-)  
This is not a bug, it's a feature.

Barrels can be moved around if you stand in front of them.

Switches often start actions over a large distance (e.g. letting walls appear or vanish). They can be demolished by a explosion that is near enough. If this happens, the action is started, but not more reversible.

When starting up the game, you first see the intro. If you hit the <RETURN> key, the next part of the intro comes at once. By hitting any other key, you get to the

```
    Main Menu
    .
```

Between the levels a statistics is shown with total and level information. You get to the

```
    Level Menu
    by hitting any key.
```

In the

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options menu  
you can set the window size and  
other parameters. You get into that menu by pressing the <ESC> key  
during the game.

If you are dead, press the <RETURN> key, if you want to start the level  
up again using the last known status (not in level one) or press  
the <SPACE> key if you want to start up with standard status.

By pressing the <G> key during the game you can adjust the gamma  
correction (sort of brightening) in five levels.

Pause is witched on hitting the key <P>. If the game is in pause mode,  
it is in wait state, i.e. no CPU time is wasted.

## 1.16 The Level Menu

You can select:

- Next Level You are transported to the next level.
- Save Game The current game standings are saved.
- Replay Level Statistics are discarded and you replay the last level.
- Exit Quit game and go back to the main menu.

## 1.17 Keyboard Configuration

You can define the keyboard configuration for yourself. If you  $\leftrightarrow$   
click on the  
button, another window is opened where the current definitions are shown.  
Right from the short description there is another small button that enables  
key recording. Any key you hit now will be used for the specified function.  
Some keys are predefined and cannot be used for playing (see below).

On the bottom of the window there are four buttons:

- Default The default configuration will be loaded.
- Last saved The last saved configuration will be loaded.
- Cancel The definitions are discarded.
- OK The defintions you made will be checked and then you go back  
to the preferences requester. The first three weapons may use  
the same key, everything else has to use a different key.

These are the functions you can define:

Chain gun Aha.  
Plasma gun The same :-)  
Grenades: Guess what  
Bombs: And here?  
Forward: Go forward  
Backward: Go backward  
Left: Turn left  
Right: Turn right  
Ex bombs: Bombs explode in the order you throwed them.

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Fetch bomb: Here you can collect the bombs you have already throw out.  
Speedup: Lets you faster get away from trouble.  
Strafe: Force sidestep  
Strafe L: Special key for only going left  
Strafe R: The same to the right  
Cross: With thiskey you can switch on any crosswires you like :-) This might help you aiming at monsters a little bit.  
Map on/off: Turn on auto-map  
Map zoom +: Zoom the map in  
Map zoom -: Zoom the map out  
Ground map: Texturemapping for ground and ceiling on/off  
Switch On: Press button

#### Using Joystick or Mouse

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If you want to use joystick (port 2) or mouse (port 1), you have to click on the cyclebutton named "Additional Ccontroller". You can only use either joystick or mouse or none of them.

To use any function click on the box of the function, so that it is in "record mode" and then click on the joystick/mouse button you want to use. In mouse mode the walking functions are fixed to the mouse of course.

If you use mouse, there is now a new button ("Use YMove"). This is "checked" by default, due to compatibility to the old ENV-variables.

When this button is "checked", the Y-movement of the mouse is used as forward-/backward-movement, the same as it was before.

If this button is not "checked", the Y-movement of the mouse will be ignored and you can set forward/backward or whatever on the mouse buttons, just like D**m does it ...

How to quit

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You can quit the game by choosing 'Exit' in the options menu.

#### Notes

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The weapons may be fired all at once if you have enough ammunition.

Because of a bug in the A1200-keyboard the program can not notice hitting a key while another is pressed. The default key definitions are made keeping that in mind, so that the problems should be minimized.

Predefined Keys

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<ESC>

Options Menu

<P> Pause

<S> Save screenshots (must be enabled with argument startup)

<G> Gamma correction

<SPACE>            Start up again when you are dead

## 1.18 Options Screen

The options menu looks like this:

WINDOW SIZE            - Here you can resize the window on the screen.  
                          This can be done in steps of 8 pixels in each  
                          direction by using the cursor keys. By pressing  
                          <SHIFT> while resizing, the steps are 32 pixels.  
                          If you use Picasso/CyberGraphX output, the  
                          horizontal steps are always 32 pixels.

DETAIL LEVEL            - (not while using picasso)  
                          The pixel size can be set depending on the chunky  
                          2 planar method. CPU+Blitter: 1x1 pixel or 2x2  
                          pixel, CPU C2P 1x1 or 1x2 pixel, Graffiti 1x1, 1x2,  
                          2x1 or 2x2 pixels. The window size will be adapted  
                          on the pixel size.

SOUND FX                - ON/OFF

EXIT TO MAIN MENU      - Quit the game and go back to the main menu

## 1.19 Some Hints

### Monsters

The monsters have the job to protect the bunker against anything. This means that they start to defend it at once or heavier when they are hit by any shot. So, if you don't want to be hit, there are two possibilities: Either you don't let the monsters shoot or you try to not being hit by a shot. Best both. :-)

You can prevent being hit by going left or right using the strafe keys if the shots come frontal. But, if you are in a larger room, there are normally monsters beside you that can hit you, too. Here it gets something more difficult...

If you hit a monster, it a) can't move and b) can't shoot back for a short period of time. So while using chaingun and plasmagun they normally won't shoot back never again...

Monsters that are hit are pushed backwards. Now, if you run towards them while shooting, you are not being hit by shots from left or right, because you run out of the shooting line.

### Barrels

Barrels can be pushed and pulled. In some levels this might be really necessary.

To push a barrel, simply go towards it and simply push it. It is not too easy, because to barrel is rolling away.

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To pull a barrel, switch on the map and go backwards toward a barrel until you have it right in your back. Then just go further backwards (you will automatically go largely around to barrel) and then you will have it in front of you and can simply pull it backwards. Pulling barrels is easier, cause they don't roll back here. To be honest, the pulling was simply a bug, but a nice one and we simply declared it as a feature :-)

### Explosions

Explosions do always go through walls and doors. If you possibly know or guess a monster standing right behind a wall or a door, why not shoot a grenade there or drop a bomb?

If something explodes near any ammunition pack, this will blow up, too.

### Switches

Switches can of course activate any action that is further away from you. Possibly that is not everytime absolutly obvious. In this case (if you don't know how to get on with the level) look for anything that might have changed or if you haven't pressed a button yet.

If anything explodes near a switch, it will be smashed, of course. If this happens that switch always is "short circuited", so that it performs what it should do.

### Command Line Options

s<sscreenshotname>!<xsize>!<ysize> enables saving of screenshots.  
r shows the frames-per-second rate during the game.  
n Starts the program withpout intro.

There are some other options but they are just useful while debugging. So I see no need to explain them ... :-)

### More ...

I doesn't know any hints anymore that might really help you, maybe I played the game too often for myself to see any problems. However, get on any problem (that I haven't noticed) or if you have any further hints, just mail me, I will include them on the homepage (that will be continously actualized by now):  
<http://rfhs1012.fh.uni-regensburg.de/~groth/nemac.html>

## 1.20 Story of NEMAC IV

### Nemac IV -- The story

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In 2048 the superpowers decided to hand global defense over to computers. The technicians of the three ruling alliances built one headquarter for each of them. Each headquarter was connected with

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the others to coordinate all decisions with the other alliances.

The essential part of each HQ was a neural computer, with the ability to analyse the global situation within seconds. The tactical reactions that could influence the life of millions came out faster than a bullet hits its target.

The three megacomputers were called NEMAC I - III.

But the system was not untouchable.

During the North - South Wars 2057-2065 a commando unit slipped through all defenses and was able to hit one of the HQ's. Dispute about competence and the human Factor paralysed the system when it was most needed.

Only Nemac II managed to avoid the worst by massive employment of conventional units and strategic nuclear weapons. The principle of computer control had shown its efficiency.

In the troublous time of the years 2066 to 2073 the whole earth was like a big barrel full of gunpowder.

The new founded alliance NSS decided to build a central command unit which was designed to react fully independent to a possible attack. All automatic combat units and the complete nuclear potential were controlled by this HQ. The command unit was named like its brain, the most powerful neural computer ever created. Nemac IV.

The Structure of Nemac IV

Nemac IV is a bunker, reaching several hundred meters down into solid granite. The lowest level contains a fusion reactor that provides independent power supply.

Embedded in the system are all communication and defense satellites giving it control over all military movements. Nemac IV and all nuclear defense installations run fully autonomous.

The structure of the bunker, as much as the power of the defensive installations make a direct assault on Nemac IV virtually impossible. Nor the bunker itself neither its periphery can be destroyed by a nuclear attack.

The parts of the central computer are spread over the whole building. The destruction of single components has no influence on the functionality of the system because of the ability of the neural net to take over tasks from destroyed parts similar to the human brain but a thousand times faster.

To avoid an assault by a commando team or an army that has taken the first levels, the floors were built displaced. There is no direct way down.

The essential parts of the computer are situated in deeper levels. They are protected by automated combat units, that keep

commandos from proceeding into Namac IV.

Given the theoretical situation, that it is taken by the enemy Namac IV would give destruction tasks to all its units, fire all its missiles and subsequently initiate the selfdestruction sequence.

#### The Problem

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Just before Namac IV was completed its systems should have been tested by running a simulation. The program simulated a situation in which enemy parachute troops have taken key positions in our country and in which various command levels have been infiltrated or sabotaged. Additionally simulated a broad scale assault.

They only forgot one thing. They didn't tell Namac IV that this was only a simulated conflict.

#### The Situation

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Namac IV took full control of the defense installations, as he should do, in case of a conflict.

As the data he received from his surveillance drones differed from that of the simulation he decided that must have been disrupted by the enemy.

50 milliseconds after the simulation had been started Namac IV launched a fullscale counterattack.

5 seconds later all human beings within the bunker had been classified as enemies because of their behaviour. Only ten seconds later there was no living human being within the walls of the bunker.

Four of the five external control rooms also received the status: Infiltrated by enemy forces. They were obliterated by a massive blast of conventional missiles. Control room 5 is unknown to the computer.

There is no more chance to prevent a war. The conventional units were stopped but the computer will soon start to fire its nuclear weapons because of a lack of feedback from his troops.

We only must prevent him from blowing up our own territories, assuming that there are enemy forces.

One of the control rooms was able to disable the internal surveillance cameras and communication lines just before it was blown away.

Therefore Namac IV has no control of his defense installations and no information on what is going on inside of the bunker. But all the automated combat units are still fully operational.

#### The Mission

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During the first testphase a FIKM-7 unit has been equipped with a remote control to destroy combat drones that are out of control.

This unit is still fully operational and unknown to NEMAC IV.

We believe that the computer sees no direct threat for him in the moment, that means as long as the surveillance outside the bunker doesn't sense an attack.

All documents are inside the bunker or in buildings in its nearer region. An intrusion into this area could be mistaken as an attack.

YOU are to guide the FIKM-7 unit down to the reactor to blow it up.

We have only one chance.

We count on you.

FAILURE IS NOT AN OPTION

## 1.21 Copyright/Legal Stuff

Copyright  
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For the programm NEMAC IV and the manual according to it:  
Copyright (C) 1994-1996, Martin Schlott, Oliver groth & Stefan Heinsen.  
All Rights reserved.

Liability  
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By installing or starting NEMAC IV you agree to this declaration:

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDER AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

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## Credits

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Alex Grasso  
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## Music

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## Raytracing &amp; Monster

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Please use this only if you have really heavy problems! And if so, please try to contact us via e-mail!

## 1.22 Thanks to ...

We want to thank:

- Alex Grasso
  - Steffen P. Häuser
  - Michael Amend
  - Stefan Holländer
-

- Stefan Schulz
- Executor from IRC #amigager
- IRC #amigager for many good tips
- Aminet, those who maintain the sites and those who wrote the software and uploaded it.
- Star Trek :-)

## 1.23 Troubleshooting

The game says it has not enough memory

If you had already other programs running, possibly the memory of your computer is "fragmented" - that means that you can only allocate many small memory blocks - but our program needs some really big blocks of memory. You should reset your computer.

If this doesn't help, please make sure that you have started the program using the memory model "SMALL" or "AUTO".

If even this doesn't help, please select the smallest possible screen resolution, switch off the Workbench ("Workbench Off") and if necessary, start your computer without startup-sequence or with a minimized one (make sure that ENV: and ENVARC: are assigned properly).

Requesters with "Can't allocate BM" or something similar appear

This error messages imply that you have selected a too high screen resolution so that you don't have enough chip memory (or there is another cause why you are out of chipmem). Make sure there is nothing else running using a large amount of chipmem, that the chipmem is not fragmented and if necessary select a smaller screen resolution.

Why can't I shoot and turn left on my Amiga 1200?

The cause is just a bug in the Amiga 1200 keyboard hardware layout. It is possible that keyboard events are not notified or cause a wrong keycode. We tried to minimize this by the default keyboard configuration.

Requester "Can't open Audio.device"

Another program already has the audio.device in use and doesn't free it again.

The program reacts weird and I have MCP, MCX or any other tool running.

By using these tools there were some problems. These should be solved by now, we had runnign all you can imagine with all options you can imagine. I hope you have no new tools. :-) However, it is still possible that there appear some problems, because these tools do patch several routines where you normally should keep your hands off. If there appears something like that, please have a look at your

configuration and if necessary boot without your tool.

In the screenmodelist some modi appear as "UNKNOWN"

Well, here the system is not able to tell us the name for this screenmode. This is not a problem of our program, because we cannot guess what any screenmode might be named, if we don't get the name from the OS. Please check out via resolution and frequencies what screenmode this could be.

Problems with gfx boards

Here there are several possibilities of problems. If there are any, please check out if you have the newest or a newer revision of your support libraries - a problem might possibly solve the problems. Otherwise often there is a tool running that causes some problems with that.

An error message like "UE #5" appears

Well, these are "unexpected errors" and they imply somehow any configurational problems with your computer - they shouldn't appear normally as they are unexpected...

There are no screenmodes in my screenmode list

It occurred some times that people had no monitor files installed. If this problem appears to you, please have a look if you have correctly installed monitor-files in your monitors-drawer and that they are loaded while booting the computer. The monitor files are really needed for a proper WB installation. Just PAL or NTSC drivers should be installed here.

## 1.24 Requirements

You need a computer with following specifications:

- An Amiga :-)
- A MC68020 CPU or better
- Amiga OS 2.0 or better
- At least 2 MB continuous Memory, Fast RAM is recommended, but not necessary
- Graphics: This program runs on AGA- AND OCS/ECS-Amiga, i.e. on all types of Amigas that meet the requirements above, not only on A1200 and A4000. Besides, it supports Graffiti, i-glasses!, Picasso II and CyberGraphX.

## 1.25 DraCo

I was really impressed when I heard that the game also runs on a DraCo. So far, so good. :-)

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Here there are of course some specials:

#### Audio

Because of the DraCo having no custom chips, the message "Cannot open Audio.device!" will appear. By pressing the "IGNORE"-button the game will work as usual, but simply without sound.

By now, this program doesn't have direct Toccata support and hmmm ... we are yet not sure if it will ever have one.

If you press a button (in the game), so it is possible that doors open. With sound you can hear that, without of course not. This doesn't make it easier. :-)

So: Everything what somehow looks like a terminal, has often an invisible switch. If you simply don't get any further, have a look on the map and look everywhere for something that has changed or maybe a button you haven't pressed yet.

#### Enforcer

There is a problem using the option "Enforcer from 0": During a certain system call there occur some hits (reads from 0) and the program is stopped. This is obviously a system fault. This happens inside a function call, not inside our program. The parameters aren't faulty, too.

This simply means that you must make sure before starting the program that you haven't the system running with "Enforcer from 0".

#### Screenmodes

NEMAC IV does only run on the DraCo using CyberGraphX screenmodes! This means that if you use any Retina or PAL/NTSC-(default)-screenmode you will first, see nothing, and second, probably cause a crash.

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