

Space Hawk

LEVEL CONSTRUCTOR

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What is this program?

This is the Space Hawk Level Constructor. It is used to create levels for Space Hawk, the actionpacked new swedish game. Yes, I did say swedish! Actually, as long as swedish games do not use the swedish language (which totally sucks) they can be, if not very good, at least reasonably acceptable.

Looking at things in a wider perspective, Space Hawk is really only a new version of the old (and never released) game "Vektor". Also, the level constructor is taking the old dos-based "Edit3" to the windows platform, and in the process adding numerous functions.

Both the game and this program was created during 1998/99 by me. My name is Tobias Hellman, and I am just now writing this help file. When you read this, though, I have most certainly finished that task. By then, I might already have moved to a higher plane of existence, to watch you little puny humans live your silly lives, whilst concerning my enourmous intelligence with questions of universal magnitude. Questions like:

When will I write the next version of this program?

Does Picard really exist? (Not really a question, of course he does!)

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About Level Constructor

Yes indeed, what about it? What can possibly be said that I have not already stated under "What is this program?".

Many things.

Here's one: "tuobA". That is "About", only the other way.
Another one: 2. That's the number of things.

Since all of the two things have now been listed, I'd recommend you to start the program and select "About.." in the help menu. There's nothing more of interest here.

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Level setup window

From this window you take care of the main settings of your level. These include the level bitmap and the various textures you wish to use.

The 'general' tab

This is one of the most important parts of the level constructor. This is the place where you choose a background image for your level. Click the little yellow symbol to the right of the text field to bring up the image selection dialog. The image has to have been previously drawn in another program, for example Paint Shop Pro.

The 'textures' tab

This tab features the texture settings. Textures are small images that can replace some dull and boring colors on your level background. In the box to the left there are a number of textures listed, and when one is selected it's previewed in another box to the right. A texture consists of the following data, which is all displayed when it's selected:

A filename: This is the bitmap image of the texture. Use the button next to the text field to browse for images if you want to replace it.

Palette Index: This is the color on your background image that the texture will replace when the game runs.

You can, of course, alter the textures that come with the program. Remember, though, that for every change you make you have to press the 'update' button to store the changes. You can also create your own textures, by simply clicking the 'Add' button, making the appropriate changes and clicking 'update'. If you wish to return to the default texture setup that the program has stored, click 'restore def'. To save new defaults (they'll be used the next time you create a new level) click 'save def'.

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Main window

From here, most of the work is done when creating a level. The window consists of a menu, a toolbar and an open workspace.

The workspace

When the program is first started, this area is completely white (and, sadly enough, boring...). The first thing that has to be done when creating a new level is to select a background bitmap (see the tutorial), and then object of different types can be placed on it. You can use the left mouse button to drag objects around, and double-click on them to change their properties. With the right mouse button, you can scroll the visible area by dragging it the direction you want. Via the menu (and it's associated buttons) you can not only create and delete objects, but you can also manipulate the environment in a number of different ways, for example by copying an object and pasting it somewhere else.

The Menu

These are the menu commands, their key shortcuts and their functions:

File

New (Ctrl-N)
Creates a new level.

Open (Ctrl-O)
Opens a previously saved level

Save (Ctrl-S)
Saves the active level

Save As
Saves the active level under a new name

Copy finished level (F4)
Copies all files included in the level to a specified directory. This one's very useful when you wish either to distribute a level, or when you wish to move it to the 'user levels' subdir.

Exit (Alt-X)
Kills a very good show

Object

Cut (Ctrl-X)
Cuts out the currently selected object

Copy (Ctrl-C)
Copies the selected object

Paste (Ctrl-V)
Pastes a previously copied or cut object on the level

Delete Item (Delete)
Deletes the selected object

New Item (F5)
Creates a new object.

Modify Item (F6)
Lets you modify the selected object

View

Statusbar (Ctrl-B)
Turns the statusbar on the bottom of the window on/off.

Toolbar (Ctrl-T)
Turns the toolbar on/off.

Zoom In (Ctrl-I or Shift + left mouse button)
Zooms in the main viewing area for more precise placement of objects.

Zoom Out (Ctrl-O or Shift + right mouse button)
Zooms out for a broader view of the level.

Help

Contents
Starts the contents page of this helpfile

Index
Starts the index window of this helpfile

About
Shows general information on Level Constructor.

The toolbar

Most of the buttons have quite logical connections to commands in the menu, such as 'Save' and 'New'. But there are also some special buttons. They are presented below:

Level Setup

This button starts the programs main settings, where you can specify a background image and set textures.

Waterlevel

Sets the waterlevel of the level (!). The watersurface is symbolized by the upper edge of a rectangle with a fish in it. To move it, simply click on it and drag it around. This button can be used if you wish to move it for longer distances. Click on the button, then click on the place on the level where you want the new waterlevel. Note that the x-position of the symbol has no meaning, and that for the level to make any sense, you should draw all underwater parts of it blue (see the tutorial for rules and tips on how to design the background).

Start positions

The four buttons with one's and two's on them work principally as the waterlevel button above, though what they control is the players start positions on the level. The green one's represent the positions of player one and two in normal game mode, and the yellow ones represent the same players but in fight mode.

Zoom

The button to the right of the Zoom+ and Zoom- buttons is a switch button. Click it once,

and you enter zoom mode. Now you can zoom in with the left mouse button, and out with the right. Click it again to resume normal editing mode. The same effect can be reached by holding down the shift button and clicking on the level.

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Item properties

This is where all objects are constructed and modified. It can be used to create very simple objects with a few clicks, but also to create more advanced and complex ones.

Standard objects with special purposes

Just under the title bar of the windows, there's a box with some small icons. These are predefined special objects, that have special meanings in the game. They are weapons, points and extra lives. To create one of these, select it and click 'create'. It will be created when you click on the level in the main window the next time. To modify it after creation, simply double-click on it to bring up this window again.

Prefabricated object patterns

If you select the icon named <object>, the advanced settings will show. The most important of the many buttons and lists is the list named 'Item pattern'. From this list, you can select ready-to-use objects, click 'create' and be done with it. They are, in essence, stored settings for different kinds of objects. Try selecting the flag from the list, for example (is it a golf flag, I wonder?). Now all other components on the window will be updated with the flags configuration. You may freely change these as you like, and if you really like your changes, click 'save' or 'save as' to store them in the list.

The settings

You can change a lot of things in an object. The list named 'image' contains images that can freely be chosen from. Some images have many frames, and can thus be animated. Select the individual frame you wish to use with the control named 'first frame' to the left. To the right, there are some tabs with additional setup parameters:

General

On this tab, the general settings for an object are displayed:

The objects xy-position (irrelevant if you're creating a new object. You have to click on the level where you want to place it after selecting 'create').

Also, there are three boxes that can be enabled or disabled - the statements below can be true or false:

- 1: Do the players ships collide with this object (or simply fly through)?
- 2: Can the players shoot at this object (or do the shots pass through)?
- 3: Is this an object that has to be taken by the players for them to pass the level? (Normally, every level has at least one of these).

You can also set the type of explosion to be displayed when the object is destroyed, the amount of energy a ship loses when passing through the object (not supported by the game as of now) and

how much energy the object has (how many times the players have to shoot it before it's destroyed)

If the box next to the energy amount is checked, the object cannot be destroyed.

Animation

If the object can be animated (>1 frame in the image) this tab is visible. The animation can

be controlled by turning on and off four different modes:

Continuous mode: The object simply keeps playing the animation loop all the time.

Impact mode: The object plays the animation when it's hit by a shot.

Time mode: The animation is played at even time intervals.

Movement Mode: The object plays the animation when it reaches a turning point in its movement path..

If all four modes are off, the object is inanimate. Obviously, different modes can also be combined. Other data that control the animation are:

Mode: Controls how the animation is performed. The 'play' alternative makes it go: Play-fastrewind-Play-fastrewind... while the 'ping-pong' alternative plays the animation first the right way, then backwards, then forwards again and so on.

Sound is not supported at the present time.

Delay: the delay between each frame in the animation (= the inverse of the animation speed). Measured in game frames (1/75 s units)

Repeat: The animation will be repeated this amount of times when in 'time mode' , 'impact mode' or 'movement mode'.

Time Delay: The time between successive animation bursts, measured in 1/75 s units. (ie 75 ---> 1 second)

Shooting

If the little box in the middle of the window named 'shooting' is enabled, this tab will be visible. This is where you control how, when and in which direction the object fill fire. These are the things that can be altered:

Weapon: here you choose the type of weapon that the object uses. Normally, select 'blueys' for best results. Feel free to try the other ones out, though!

Delay: Time between shots emanating from the object. As always, a value of 75 corresponds to 1 second.

Speed: Number of pixels the shot moves each frame. This value should normally be between 2 and 4.

There is also a button here, the '*shooting grid*'-button. Click on it, and a new window pops up. From there you can setup from what parts of the object the shots emanate (and also how many shots there'll be). See the seperate section on the 'shooting grid' window.

Movement

If another small box in the middle of the window named 'moving' is enabled, this tab will be visible. This is where you control how, when and in which direction the object fill move.

These are the things that can be altered:

Mode: Type of movement. Select 'move' and the object moves, pops back to the start position, and does it all over again. Select 'ping-pong' here, and the objects moves away, moves back again, moves away and so on...

Delay: Number of frames between each move. A value between 0 and 3 should be used.

Delta x, delta y controls how far the object moves in both directions. Note that negative values mean movement to the left. All movement is relative to the objects position. If you wonder how high numbers you should give here, return to the main window. There you can see coordinates in the lower left corner, and with the help of them you can judge distances in pixels on your level.

Step 3: Setting textures

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Shooting grid

This is where you define from where the objects are going to shoot. If you simply select a shooting object from the 'item pattern' list, these settings have already been made and you need only to tamper with them if you have special reasons for doing so.

To create a new shooting position, select a point in the image (a yellow circle indicates the selected one) , and click 'new'. Now a small red circle and a line will be created on that spot. The line shows in which direction a shot will be launched from that point. Create as many as you like, you can always delete them again using the 'delete' button, or maybe even the 'clear' button to remove them all. If you want to specify the angle more accurately, use the meter at the top. At the bottom, you can choose which frame to display. This doesn't have any practical use other than the fact that it makes it more easy for you to quickly review all frames in an animated object before you decide where to place the shooting markers.

Now, when the game runs, shots will be launched from your specified positions in your specified angles with the speed that you've specified in the general shooting parameters on the shooting tab (on the item properties window).

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Tutorial

Step 1: Creating a new level

The most important (and the one that has to be created first) part of a level is the background. It can not be created in this program, but must be drawn in for example Paint Shop Pro or another image editing program. There are a number of rules that dictate how it should be drawn, and all those rules can be found in the next part of this tutorial. If you don't wish to draw a background, you can use the ones that come with the levels included in the game. Anyway, once you have a background image ready for use, start the program. Click the 'level setup' button in the toolbar, and choose the 'general' tab. Here you can specify the background image to be used in your level. Click 'OK'. The main window will now be active, and your background is visible.

If you want to draw your own background, move on to [Step 2: Drawing the background](#).

Otherwise, continue with [Step 3: Setting textures](#).

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Creating a new level

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Tutorial

Step 2: Drawing the background

These are the rules that specify how to create a background image:

To begin with, you need an image editor capable of handling 256-color bitmaps. Paint Shop Pro is recommended. If you use that program, simply create a new bitmap with a height of 480 or more, and a width that is a multiple of 640. (i.e. 640, 1280, 1920 and so on) Then load the palette called 'brapal.pal' from the Space Hawk main directory. If you don't use paint shop pro, you can't just create a new image (unless your program supports the loading of JASC-PAL palettes). Instead, load a bitmap that is included with Space Hawk (from the 'graphics' directory, for example 'bana1.bmp'). Now modify the height and width to your liking. Now you can start to draw things on the image.

If you have played the game, you've seen that the players start at special landing sites. Small landing sites are drawn automatically under the ships, so you needn't concern yourself with them if you don't wish to. If you want bigger landing sites, though, draw them in light grey (palette index 7). It is recommended that you make them at least 3 pixels wide. Walls can be drawn with any color you like, except for those listed here below. They are special colors with special functions:

1 indicates water. Ships can fly through colors 0 and 1. You should draw the parts of your level that you intend to be underwater with the color 1 as background instead of 0.

7 is a color reserved only for landing sites.

11, 12, 13 are reserved for palette animation. Don't use them unless you intend to replace the color with a texture.

21 makes the ships bounce horizontally. Only draw vertical lines in this color, preferably more than 3 pixels wide.

225, 226, 227 are also reserved for palette animation.

Note that If you draw your own textures, the same rules apply. Remember not to use any of the colors listed above.

Once you're finished drawing, save the image as a bitmap (.bmp). Remember where you saved it, and go back to the previous part of the tutorial to learn how to use it.

Return to [Step 1: Creating a new level](#)

or move on to [Step 3: Setting textures](#)

You can also return to [Contents](#)

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Tutorial

Step 3: Setting textures

You have now selected a background image. Next, we're going to add some nice textures to it. Even if you don't want any textures, you should read this to learn how to deactivate the standard settings. Enter the 'level setup' window again, but this time select the 'textures' tab. Go through the list on the left and check all textures that you want to use. Then select them one by one, and enter the correct palette index for each and one of them (palette index = the color on your background image that you want to replace with the texture). Click 'update' after every change you make. If you want to add your own palette, use the 'add' button, which creates a new post in the list. Then modify it, and don't to forget to click 'update'.

Move on to the next part of the tutorial, [Part 4: Creating simple standard Objects](#)

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Tutorial

Step 4: Creating simple standard objects

An empty level isn't very interesting, even with [textures](#). The main focus of the program is to make it more interesting. First, let's set the players start positions. Use the four buttons in the toolbar (1,2,1,2) to move around the little ships. The green ones symbolize the start positions when the game runs in normal mode, and the yellow is the start positions in fight mode. Next, we'll specify the location of the water surface. This is done with the button with a blue wave on it in the toolbar. The water surface is represented by the topmost lightblue line of a blue rectangle with a fish in it. If you don't want any water, move it down to the bottom of the level.

Now, let's create some more objects. Select 'options/new item' in the menu or press F5 to bring up the item properties window. In the box near the top of the window, select one of the icons. They are simple objects that have special functions in the game:

Fast Weapon, Standard Weapon, Heavy Weapon and Snow Thrower are different types of weapons. If you're planning to do a level for multiple players, you'll normally want to create a lot of weapons.

Extra Life is exactly what it sounds like. Try to place them at hard-to-reach places for maximal game drama...

Points - these aren't supported by the game for the moment, but will soon be. They're simply extra points for the player who takes them.

Select one of the objects, and click 'create'. You'll now return to the main window. Click on your level (on the spot where you want to place the object) and it'll be created there. After the object has been created, you can move it around by dragging it with the left mouse button. Doubleclick on it to bring up the item properties again, if you want to change it into another simple object, or perhaps an advanced one.

Read further in [Step 5: Creating advanced objects](#)

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Tutorial

Step 5: Creating advanced objects

Create a new object, as you learned to in the previous part of the tutorial. This time, select <object> in the list of icons. This brings up the advanced part of the window. For information on all the settings, see the [Item properties window](#), or press the help button. If you quickly want to place an object on your level, choose one from the 'item pattern' list, and click 'create'. If you want more control over how the object behaves, or if you want to create a completely new one, you'll have to manually change the settings on the tabs to right in the window.

The game idee of Space Hawk is for a number of players to fly around different levels and gather objects. Each level has to have at least one objet that a player can pick up. You can select one of the takeable objects from the item pattern list, for example 'takeable alien', or you can make any object takeable. Simply activate the 'general' tab and make sure that 'takeable object' is active.

When you're finished with your level, and want to save it, you should read the next step in the tutorial - [Step 6: Files and directories](#)

Or, if you're tired of it all, return to [Contents](#)

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Tutorial

Step 6: Files and directories

Okay, you've created a level. Now what? To save it, select 'file/save as'. All level files are saved with the file extension .hwk, which is important for the game to be able to find them. Anyway, you've saved the file. Now you have the that file in a separate directory, the background image in another (maybe), and if you've created textures of your own they're probably all around your harddrive, too. It is time to use the function 'file/copy finished level' from the menu. It'll copy all the files that are included with your level to a directory of your choice. This is great if you want to move the level to another computer, or maybe zip it down or something.

And how do you play the level? Space Hawk can play user levels, but it can only find those located in the 'user levels' subdirectory of the main Space Hawk directory. Use the function described above to copy all files to that directory.

Start the game. Select 'two player fight', 'load from file' and choose your level.

Enjoy your creation.

Then return to [Contents](#)

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Glossary

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L

level bitmap

P

palette index

T

texture bitmap

texture list

textures

level bitmap

The level bitmap is the bitmap file used as background for the level. Upon it, you can place various objects, such as start positions or animations.

textures

These are bitmap tiles that replace certain colors on the level bitmap. You can either use predefined textures, or specify bitmaps of your own.

palette index

A palette consists of 256 colors. A palette index is one of these, and by specifying one for a texture, you select the color in the level bitmap that should be replaced with that very texture.

texture bitmap

A texture bitmap is exactly what it sounds like. A bitmap file, used as a texture. As all other graphical objects, this bitmap must reside in the graphics subdirectory of Space Hawk.

texture list

This list contains all textures in this level. They can be activated and deactivated with the checkboxes accompanying each texture in the list.

