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MARITIM 3D SCENERIES

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Create
„AI-Ship Traffic"
for FSX and P3D (all Versions)

Tutorial

Inhalt

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1 Foreword

Every "Flusian" will probably agree with us when we claim that AI traffic is a basic element to breathe life into the flight simulator..

This refers not only to the AI air traffic and the cars that populate the streets in today's modern sceneries, but also to the flowing waters and of course especially to the seas and oceans and a related AI shipping traffic..

Henrik Nielsen has made us all an invaluable gift with his "Global AI Ship Traffic FSX and P3D" and for the first time filled the otherwise so dead seas in the flight simulator with life.

> **TIPP**
>
> Even more ship models and ship routes for FSX and P3D (all versions) are available on SimDocks.de and in the SimDocks-Forum.
>
> Also the download links for Henriks "Global AI Ship Traffic"

With such a big project it is hardly possible to respond to all national wishes of the flight simulator trailers from different countries.
In addition there are problems with the route design of the ships which are caused by the different addons on each PC.

Thus it happens again and again that ships that sail wonderfully in the middle of a river with one simulator pilot or "moor" very accurately at their berth in the port do not fit at all on another simulator installation.

Therefore it is necessary for some simulators to adapt the ship routes and schedules to the very personal conditions.

I would like to explain how this is done in this document.

Besides the actual ship models, which can be downloaded for free thanks to Henrik Nielsen's project (download link), you need a BGL file with the corresponding timetables and the route.

This BGL file is compiled from two simple text files and a KML file (Google Earth file). The necessary compiler can also be downloaded for free from the Internet.

Das Beste an dem Compiler ist, dass man ihn noch nicht einmal installieren braucht, sondern er sich mit einem einfachen Doppelklick auf die EXE-Datei starten lässt. Einzige Voraussetzung ist, dass auf dem PC Java 5.0 oder höher installiert ist.

The best thing about the compiler is that you don't even need to install it, but you can start it with a simple double click on the EXE file. The only requirement is that Java 5.0 or higher is installed on the PC.

2 Let us begin

If you have downloaded finished routes from the net, you can adapt them, if the download contained not only the BGL file but also the corresponding raw files.(2x txt + 1x KML)

If the raw data is not included, you can try to "decompile" the BGL files with the compiler. This also works for many files, but not for all of them. More about this in the chapter "Decompiling BGL files".

The steps are identical when adapting or creating new routes and timetables..

3 files are required:
1   the   „Boats_ship_XXXXX.txt"
2   the   "Plans_ship_XXXXX.txt"
3   the   "Routes_ship_XXXX.kml

These 3 files **ALWAYS MUST** start with "Boats_", "Plans_" and "Routes_" in the file name so that the compiler can identify them.
The following file name is up to you, but please note that the 3 files **must all have the same name except for the beginning of the file name**, otherwise the compiler will fail.

Here is an example:
 „Boats_ship_Europa_Hamburg_EmmaMaersk.txt"
„Plans_ship_Europa_Hamburg_EmmaMaersk.txt"
„Routes_ship_Europa_Hamburg_EmmaMaersk.klm"

Order is half the success
It is important not to lose track of the many files that accumulate when working with multiple ships, routes, and ports.

Therefore, you should have on your desktop (or somewhere else) a
"AI Ships" folder.

The compiler with all its required files is first copied (or unpacked) into this folder so that it is always accessible and does not have to be searched for long in the directory tree.

Furthermore, within the AI-Ships folder, there is a separate folder for each port for which routes/timetables are edited or created (*see picture the folder with the city names*).

📁 aibtc02	06.01.2015 11:19	Dateiordner	
📁 doc	05.12.2006 13:37	Dateiordner	
📁 samples	05.01.2015 10:43	Dateiordner	
📁 SchiffsRouten-Bremerhaven	20.01.2015 12:06	Dateiordner	
📁 SchiffsRouten-Hamburg	20.01.2015 12:05	Dateiordner	
📁 SchiffsRouten-Wilhelmshaven	20.01.2015 12:07	Dateiordner	
🛥 aibtc.exe	03.03.2007 13:49	Anwendung	525 KB
aibtc.jar	03.03.2007 13:46	Executable Jar File	140 KB
📄 index.html	06.12.2006 17:53	Firefox HTML Doc...	20 KB
🖼 logo.png	26.11.2006 21:12	ACDSee Pro 3 PN...	18 KB
📄 README.txt	03.03.2007 13:50	Textdokument	1 KB

In the port folders, on the other hand, each ship receives its own folder, in which the required files are stored.

In the ship folders there are the 3 raw files and the later BGL file.

The jpg file is not interesting for our manual here. This is a picture of the respective ship, which I use on the download website, so that visitors can see which ship the route download is about.

More important is the "traffic_Ships......bgl".
This is THE BGL file which is compiled from the three raw or source files mentioned above and which is subsequently stored in the directory
"*Your simulator/scenery/world/scenerey*" is responsible for driving the ships.

> **Note:** "*Your simulator*" stands for FSX or P3D each after which simulator is used.

> **TIPP** You can also save the bgl files somewhere else (e.g. in a separate folder for ship traffic) and then register it in the scenery library in the simulator.

3 File names

Let's first take a closer look at the file names of the files shown above.

Boats_,   Plans_,   Routes_
These are the first parts, the file names, with which the 3 source files **ALWAYS MUST start!**

EU_
stands for Europe. This part of the file name was taken from Henrik Nielsen.
This has the advantage that all ships sailing in the EU are sorted together in the "scenery" folder so that they can be found more quickly in the hundreds of files in this folder.
For ships sailing in the USA this would be US_, for ships sailing in Brazil BR_ and so on.

Aphrodite_
This part is the name of the ship (the Aphrodite is a Dutch sailing schooner by the way).

HH_
This is the abbreviation for the port in which the route begins and ends again (as in the case of AI traffic by aircraft, each route must lead back to its starting point). In this case it's Hamburg, but it could also be HB_ for Bremen or LON_ for London, NY for New York etc.

60007
This is the number of the respective route.
Each route number should be unique in the folder .../scenery/world/scenery.
If a route or timetable file is only to be edited, you do not need to worry about the route number, since it remains the same in this case.

However, if a new route is to be created for a ship, this route must also be assigned a new route number.

The route numbers can be between 000001 and 999999 and should be unique in the route folder.

- This means that BEFORE assigning a number, you must check whether the planned number already exists

- Open the directory "Your simulator/scenery/world/scenery" (*or your own route-folder*) in Windows Explorer.

- Here the planned route number is entered into the search window of the Windows Explorer and the directory is searched for the number.

- If the Explorer does NOT find what you are looking for, everything is fine and you can use the planned number for the new route.

- Wird der Explorer fündig, gibt es bereits eine Route mit dieser Nummer und man muss eine andere Nummer wählen und die Kontrollsuche mit dieser neuen Nummer erneut starten.

Now let's take a closer look at the individual files. Let's start with:

Boats_Ships_EU_Aphrodite_HH_60009.txt
This file usually contains only a short line of text, separated by commas in
3 parts and which reads as follows:

AC#1,8,"AI_Aphrodite"

AC#1, is the ship number in this Boats_ file.
A Boats_-file can contain several ships (mostly of the same type with different paintings) which are numbered in this way (AC#2, AC#3 etc.). By default the file contains only one ship.

This AC#X numbering can also be found in the **Plans_ file**, where it describes the timetable that belongs to this ship.

8, is the speed in nm/h (nautical miles per hour) with which the ship is to move.

„AI_Aphrodite" is the name of the ship or better said the title the ship has in its "sim.cfg". This title tells the simulator which ship to display.

The title of a ship can be found in the "sim.cfg", which can be found in the folder of the ship, in the directory
"Your Simulator/SimObjects/Boats" is located (see picture below).
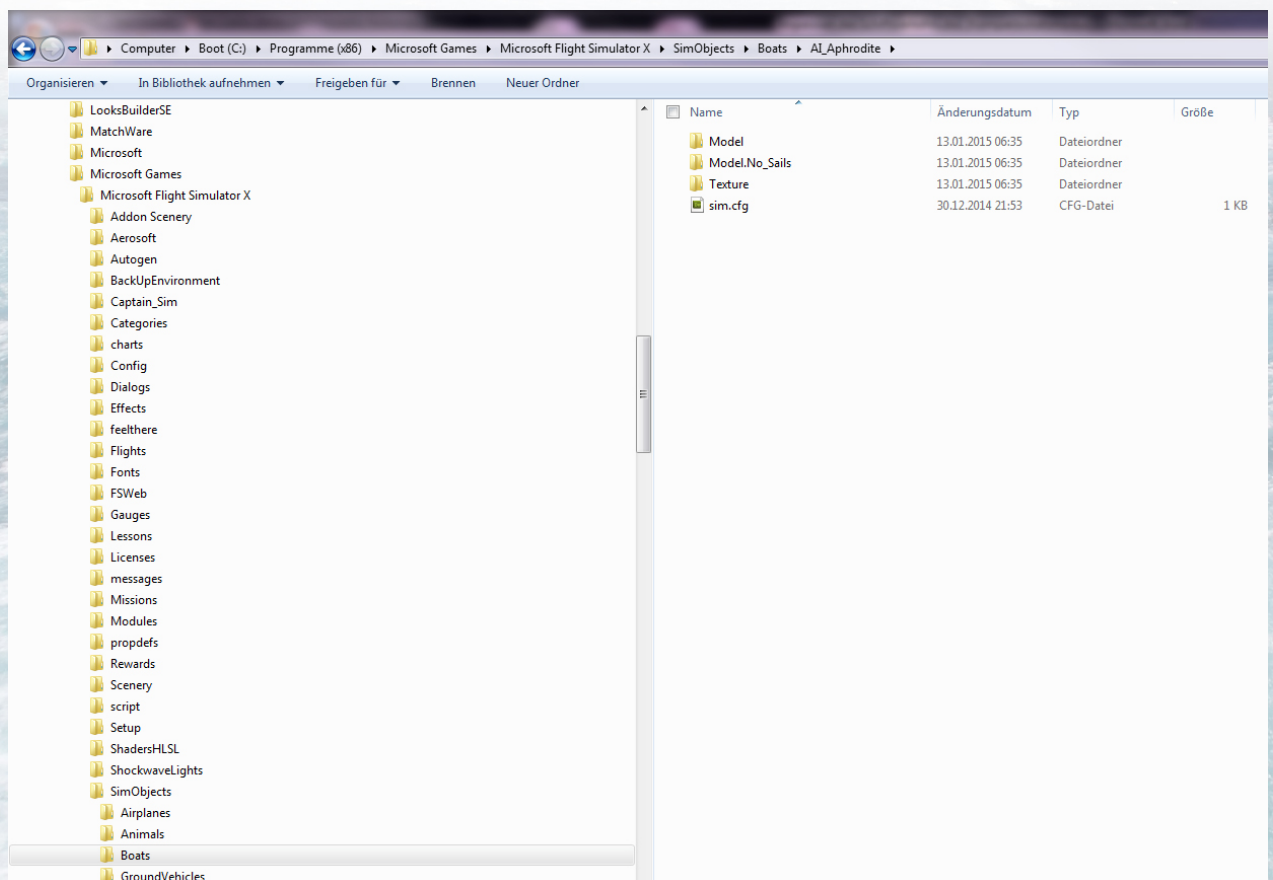
```
[fltsim.0]
title=AI_Aphrodite
model=
texture=
ui_manufacturer=Henrik Aa Nielsen
ui_type=sailboat

[fltsim.1]
title=AI_Aphrodite_No_Sails
model=No_Sails
texture=
ui_manufacturer=Henrik Aa Nielsen
ui_type=sailboat



=======================================================
[General]
category=Boat

[contact_points]
static_pitch=1.0                    //degrees, pitch when at rest on the ground (+=Up, -=Dn)
static_cg_height=1.0                //feet, altitude of CG when at rest on the ground 0,7

[DesignSpecs]
max_speed_mph = 25
acceleration_constants = 0.5, 0.4              //Time constant (effects responsiveness), and max acceleration (Gs)
deceleration_constants = 2.0, 0.5              //Time constant (effects responsiveness), and max acceleration (Gs)
SternPosition = 0

[Effects]
wake = fx_wake_m
```

The figure above shows the content of the "sim.cfg" of the ship model "AI_Aphrodite".

Right in the second line you find: **titel=AI_Aphrodite**, which is taken over into a new Boats_xxxx.txt.

If you read on, you will notice that in this sim.cfg two models of the same ship are given.

Under the heading "[fltsim1]" you will find in the title bar „**=AI_Aphrodite_No_Sails**"

This title can also be entered in the "Boats_xxxx.txt", but the Aphrodite will be displayed without sails, as the title already says.

Watch your step!
You should not change anything in this file if you do not know exactly what you are doing. Otherwise it can happen that the ship doesn't sail anymore or looks quite strange.

4 Plans_Ships_EU_Aphrodite_HH_60009.txt

In this file it gets a little bit more complicated, but not so complicated that you have to beat your hands above your head.

In the "Plans_"-file the timetable of the respective ship (*or ships*) is written.

The content of the text file can consist of one or more lines (also for several ships).

> **!** Note: The "Plans_file" can also contain timetables for several ships.

But here we stay with the one-line version for one ship and that looks like this in the case of the "Aphrodite":

The command line consists of 14 single command blocks separated by commas.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
AC#1,	Aphrodite,	5%,	1Hr,	00:00:00,	00:28:10,	60009,	normal,	ferry,	00:30:00,	00:58:10,	60009,	reverse,	ferry

1)   AC#1,   Is the same number under which the vessel concerned is listed in the "Boats_" file.

2)   Aphrodite,   It's the name/title of the ship. Here the name with up to 6 characters can be freely assigned, since the ship is called after its number (AC#1). However, it makes little sense to enter a name other than the ship's name here.

3)   5%,   Is the minimum setting that must be set in the traffic configuration of the flight simulator for ship traffic to be displayed on the screen..

4)   1Hr,   Is the time interval in which the ship departs each time anew. Of course, the time interval cannot be less than the ship needs to travel the planned route (outward and return journey).

The compiler allows the following time intervals:

1Hr,	WEEK, (=1 Week)
2Hr,	2WEEK,
4Hr,	4WEEK
12Hr,	8WEEK
24Hr,	

5) 00:00:00 This is the start time at which the ship begins the outward journey of the route.
Since in this example we have a time interval of one hour, the ship departs every first second of a full hour on the way out of the route (sometimes it departs 1-2 minutes late).

With a 24-hour time interval the time of day would be entered here in UTC (Coordinated Universal Time), which would mean for our example that our ship would start after winter time at 0 o'clock UTC + 1 hour, thus at 01 o'clock at night of each day in Hamburg.

In summer time you have to calculate UTC +2 hours for the port of departure Hamburg.

6)   00:28:10   Destination arrival time on the way there. As our Aphrodite only sails a bit through the port of Hamburg she only needs 28 minutes and 10 seconds for her route.

> **Note:**
> It is advisable to always set the arrival time for the outward and return journey to 00:00:00 first, as the compiler automatically calculates the arrival time from the route length and the speed of the ship (specified in the "Boats_" file).
>
> This gives you an indication of how long the ship will take approximately for one trip. (*there will always be delays due to evasive manoeuvres with other ships or sharp curves in which the ship comes to a standstill almost completely*).
>
> If it turns out to be necessary or better to change the departure and arrival times later, you can still do so.
> However, you can only extend the journey time or the layover time (and change the next departure and arrival accordingly), because the compiler changes too short journey times again after its calculation.

7)   60009   The route number (see also chapter "File names")

8)   normal   Tells the simulator that the ship is on the way out of the route, which means that the route will run from the first created waypoint to the last one.

9)   ferry   This is the "Parking Type" of the ship!
If the specification is "ferry", the ship parks right at the end of the route.

If the specification here is "cargo" or "passenger", the ship searches for a parking space in the vicinity of the route end point.

10)   00:30:00   The departure time for the return route, which must have the same route number as for the outward route..

11)   **00:58:10**   As the way back is the same as the way out (only in the opposite direction) the ship needs the same time as the way out (28 minutes and 10 seconds) and arrives at the starting point after 00:58:10 hours, i.e. 1 minute and 50 seconds before the one-hour time interval expires. **But it is better to plan 10-15 min karrenz time**.

12)   **60009**   The route number for the return route, which must be the same as for the outward route (see also chapter "File names").

13)   **reverse**   Tells the simulator that the ship is on the way back of the route, which means that the route will depart from the last waypoint created to the first waypoint.

14)   **ferry**   see point 9 above.

4.1 The timetable for one or more weeks

Timetables over one or more weeks are required for longer and extra longer routes that the ship cannot complete in 24 hours or within a week..

In addition to the timetable structure already shown, the details of the weekdays are added here.

For this purpose, the number of days is set before each departure and arrival time with a following slash.

Example:
If the departure time for a trip that takes one week **to arrive and depart** on a Monday at 09:10:00 GMT, the "Plans_XXX.txt" looks as follows:

AC#1,Shipname,5%,WEEK,0/09:10:00,

The "0" with the slash behind it tells the simulator that the ship should leave on a Monday.

Consequently, the numbers for each day of the week are as follows:
0/	=	Monday
1/	=	Tuesday
2/	=	Wendsday
3/	=	Thursday
4/	=	Friday
5/	=	Saturday
6/	=	Sunday

The complete timetable line can then look like this:

AC#1,Shipname,5%,WEEK,0/09:10:00,3/09:00:00,11111,normal,ferry,
3/15:00:00,6/14:50:00,11111,reverse,ferry

> **Note:**
> For better clarity I have separated the line here. In the file, however, it stands single line WITHOUT line break!.

This timetable tells us in the upper line that the ship:

AC#1 in the Boats_ file,
with the name "**ship's name**",
starts every Monday (**0/**) of a week,
at **09:10:00** UTC,
on Thursday (**3/**) of each week
at **09:00:00** UTC arrives,
and Route **11111** is used from the first waypoint to the last waypoint (**normal**) and
should docking at the very end of the route (**ferry**).

The second line informs the simulator that the vessel:

on the day of arrival (3/)
at 15:00:00 GMT start again and
on Sunday of each week (/6)
at 2:50:00 GMT,
Route 11111, should arrive at 14:50:00 UTC.
from the last to the first waypoint (reverse), and
parked right at the beginning of the route (ferry).

The structure of a timetable for several weeks looks the same, only that there are then more than 7 days.

If we imagine our ship (an aircraft carrier) needs for its journey from Norfolk (USA) to Naples in Italy, with a few days stay in Naples and return journey a total of 8 weeks, then our plans_-file would look like this for example:

**AC#1,B7640,5%,8WEEK,3/16:49:59,11/07:39:56,7640,normal,ferry,
28/10:44:59,36/01:34:56,7640,reverse,ferry**

The carrier departs on day 3 of the 8-week period. This would be a Thursday and arrives on day 11 of the period..

What day of the week does the carrier arrive in Naples?

Answer 1: _____

Then he returns on day 28 of the period and arrives back at Norfolk on day 36.

On which day of the week does the carrier start in Naples and on which day of the week does it arrive in Norfolk?

Answer 2 Start-Day: _____

Answer 3 Arrivel day: _____

The answers to these questions can be found on the last page.

BTW!
If our aircraft carrier also had a few escort ships, our "plans file" would look like this:

```
AC#1,B7640,40%,8WEEK,3/16:49:59,11/07:39:56,7640,normal,ferry,28/10:44:59,36/01:34:56,7640,reverse,ferry
AC#2,B7641,40%,8WEEK,3/16:49:59,11/07:42:04,7641,normal,ferry,28/10:44:59,36/01:37:04,7641,reverse,ferry
AC#3,B7642,40%,8WEEK,3/16:49:59,11/07:39:14,7642,normal,ferry,28/10:44:59,36/01:34:14,7642,reverse,ferry
AC#2,B7643,40%,8WEEK,3/16:49:59,11/07:40:42,7643,normal,ferry,28/10:44:59,36/01:35:42,7643,reverse,ferry
```

Where AC#1 would be our aircraft carrier and the numbers AC#2 and AC#3 would be escort ships, which would also have their entries in the Boats_ file with the same numbers. The ship names were replaced here (*as usual with warships*) by numbers.

But if you take a closer look, you will notice that the ship with the number AC#2 is doubled here. Is this just a mistake?

No, it's not!

The ship with the number AC#2; a destroyer that accompanies the carrier, is launched twice **but on different routes.**

One route runs to the right and the other to the left of the carrier route.

How to make 2 or more ships out of just one ship.

5 Customizing an existing route with Google Earth

There are 2 ways to open a route file in Goggle Earth.

The first one is that you have a "Routes_XXXX.kml" file. Then just double-click on the file and it will open in Google Earth..

The second possibility is that you only have the BGL file. In this case you have to try to decompile the file with the compiler to get the KML file (see chapter "Decompiling BGL files").

Let's assume that the "AI-Ships folder" created at the beginning contains a ship subfolder with a KML file.

After a double click with the left mouse button on the file it opens in Google Earth (*Googel Earth must be installed of course*) and you get the following view
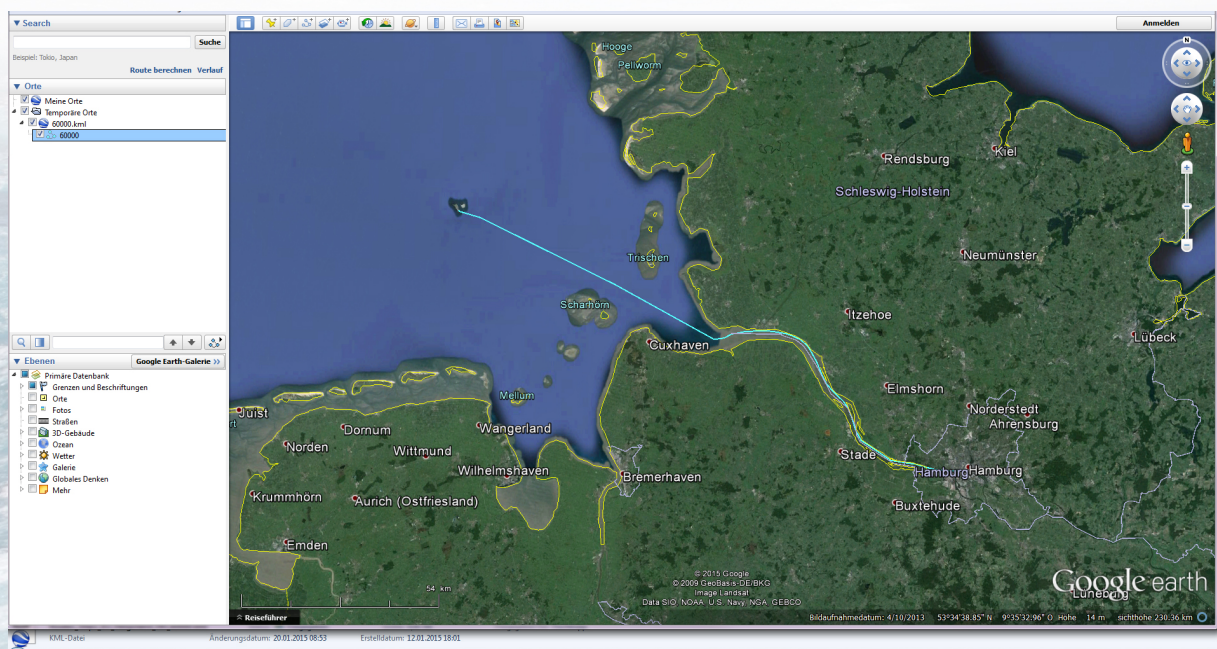
The left program window shows the name of the opened KLM file (*in this case 60000.klm*) and the number of the route itself, which is also called 60000.

⚠️	**Notice:** New routes are always saved in Google Earth with a valid route number and NOT under the file name "Routes_XXXXX.klm". The file is renamed in the ship folder where the Google Earth file is saved. Therefore, Google Earth always displays the route number as the file name, even after the renaming.

In the map window itself you can easily see the line of the route. This line can be blue, red, white or any other color.

There are now two ways to open the editing of this line (route). You can click in the left window, with the right mouse button on the line entry (marked blue in the picture), or you can click also with the right mouse button, in the map window on the line itself.
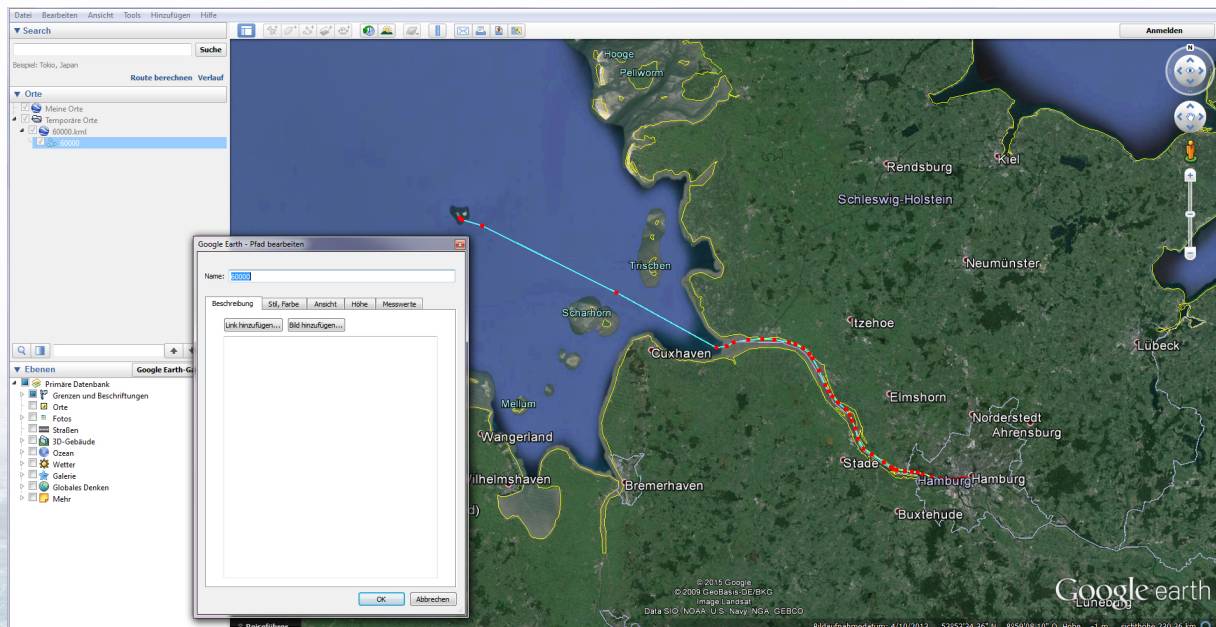
This opens the "Edit Path" window and a number of nodes appear on the line in the form of small squares, the color of which can also be set to any desired color.

These nodes can now be moved with the mouse to change the route.

You can also mark and delete nodes with the mouse or add new nodes.

After the editing is finished, close the "Edit Path" window by clicking on the OK button.

At the end of processing, the file must still be saved so that the changes take effect. To do this, right-click on the upper entry of the route number (*the one with the small Google Earth logo is shown in the following figure*).
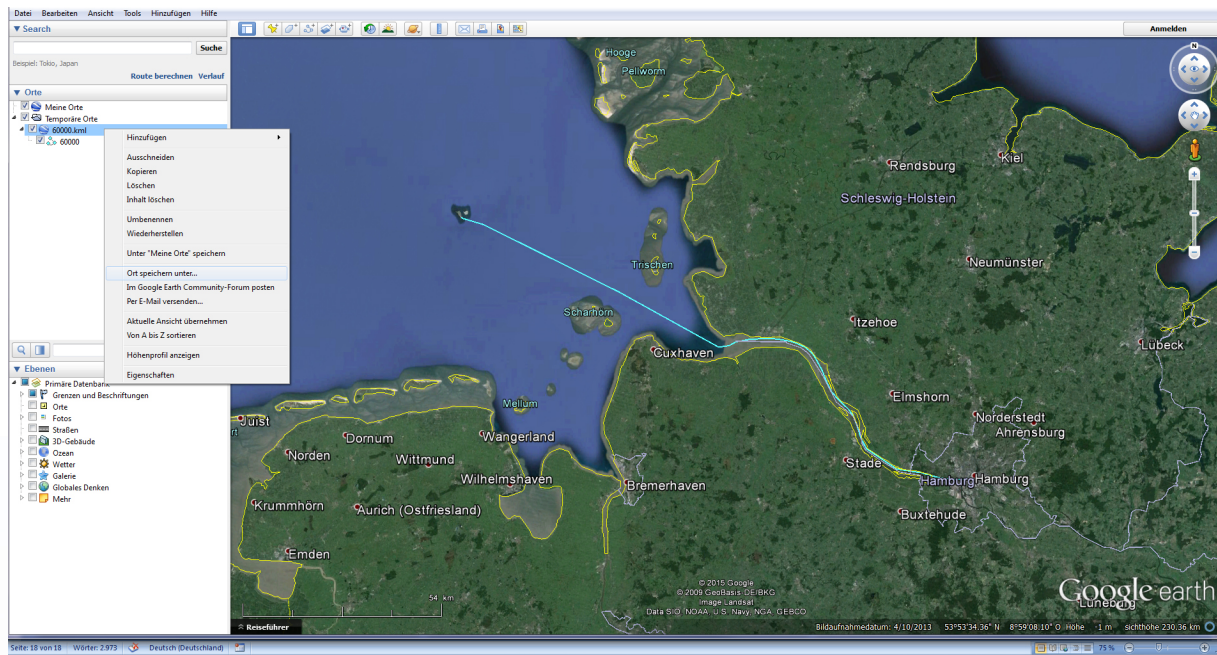
In the opening fly-out menu select "Save location as" and save the file again in the ship folder under the same name as you opened it before.
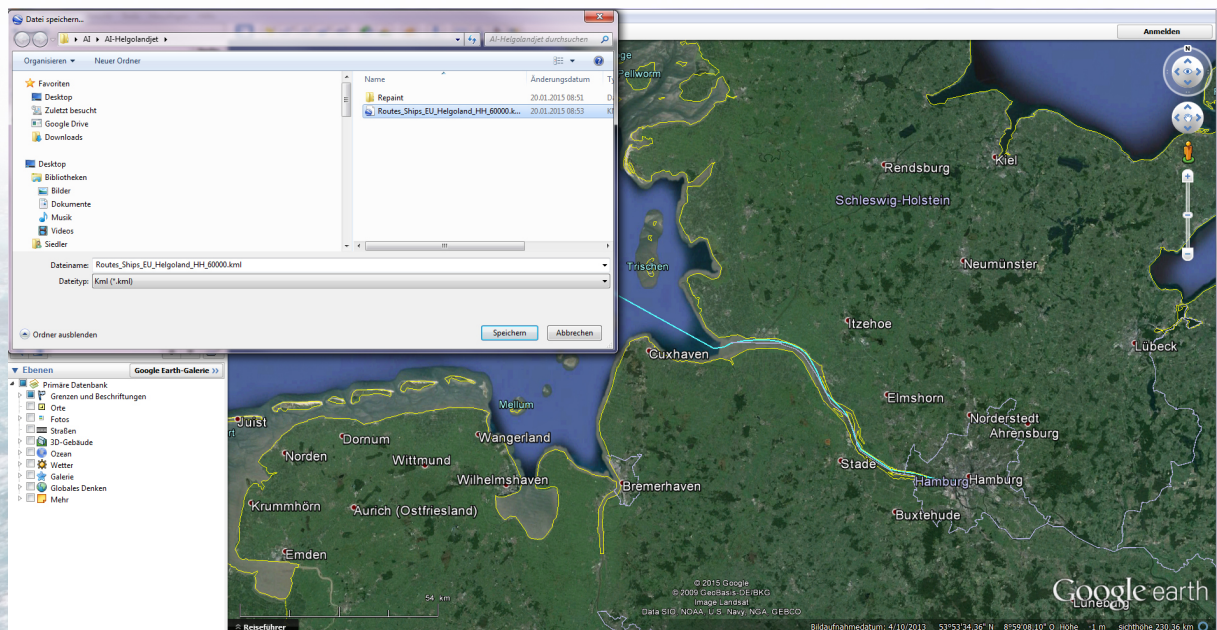
Notice:
This only applies to routes that have already existed before!
New routes are always saved in Google Earth with a valid route number and NOT under the file name "Routes_XXXXX.klm".

The renaming of the file is only done in the ship folder where the Google Earth file is saved.

This concludes the editing of the route.

For this to take effect in the simulator, the three files that have been presented so far must be compiled into a BGL file and copied into the folder Your Flusi/scenery/world/scenery/ (or your own ship traffic folder).

How this is done is described in the chapter "The Compiler".

6 Create a new route with Google Earth

After opening Google Earth and zooming into the desired area (*in this case the port of Hamburg*), click on the "Add path" button in the toolbar at the top (*see figure below*).
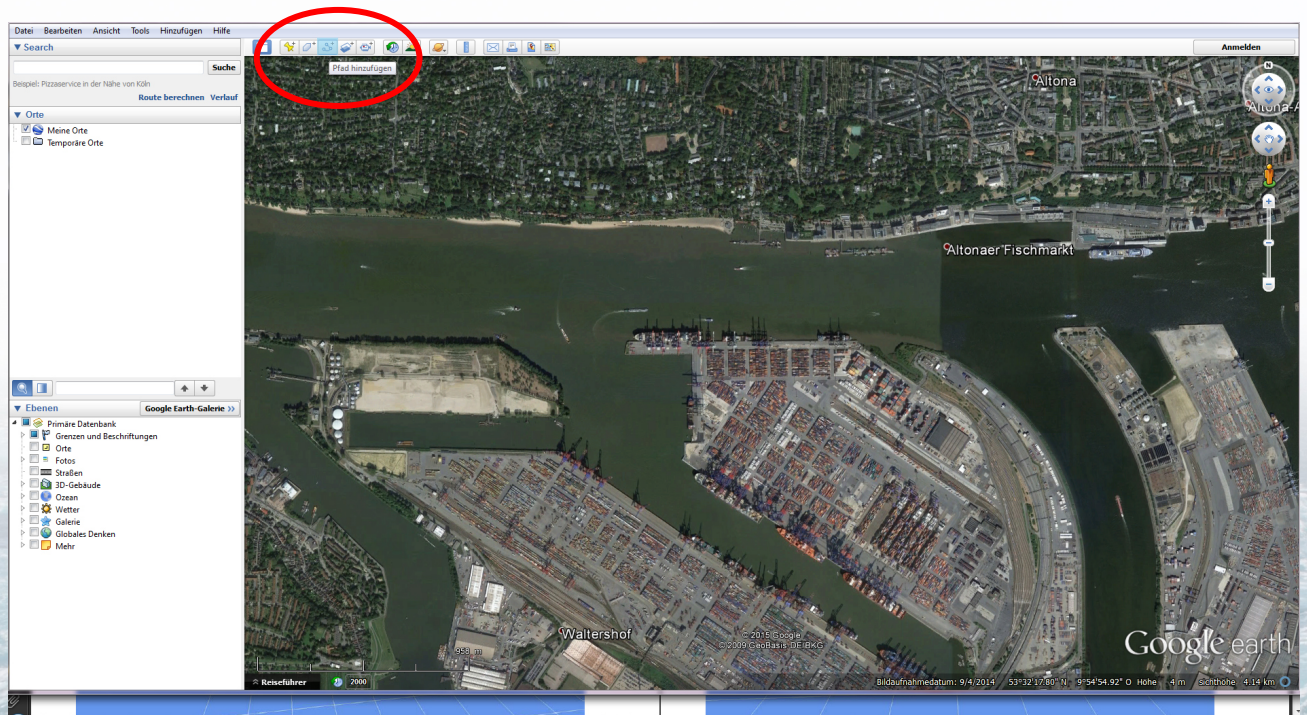
The window "new path" will open where you first have to enter a valid rod number (see also chapter "File names" paragraph 60009) as file name. The number 11111 was entered here as an example.
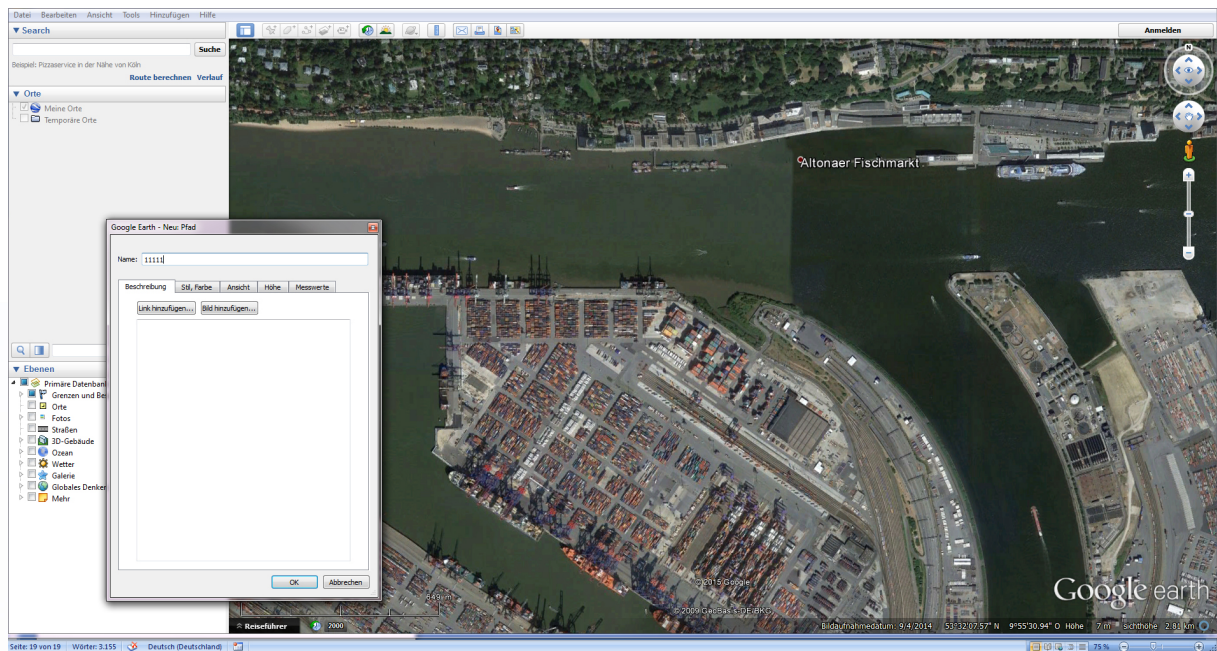
You should choose a sufficiently large zoom factor in the map window to be able to work very accurately.

Now you create waypoints by clicking with the left mouse button, which are connected by a line by the program.
On the "Style, Color" tab you can set a color and the thickness of the line (*see figure below*).
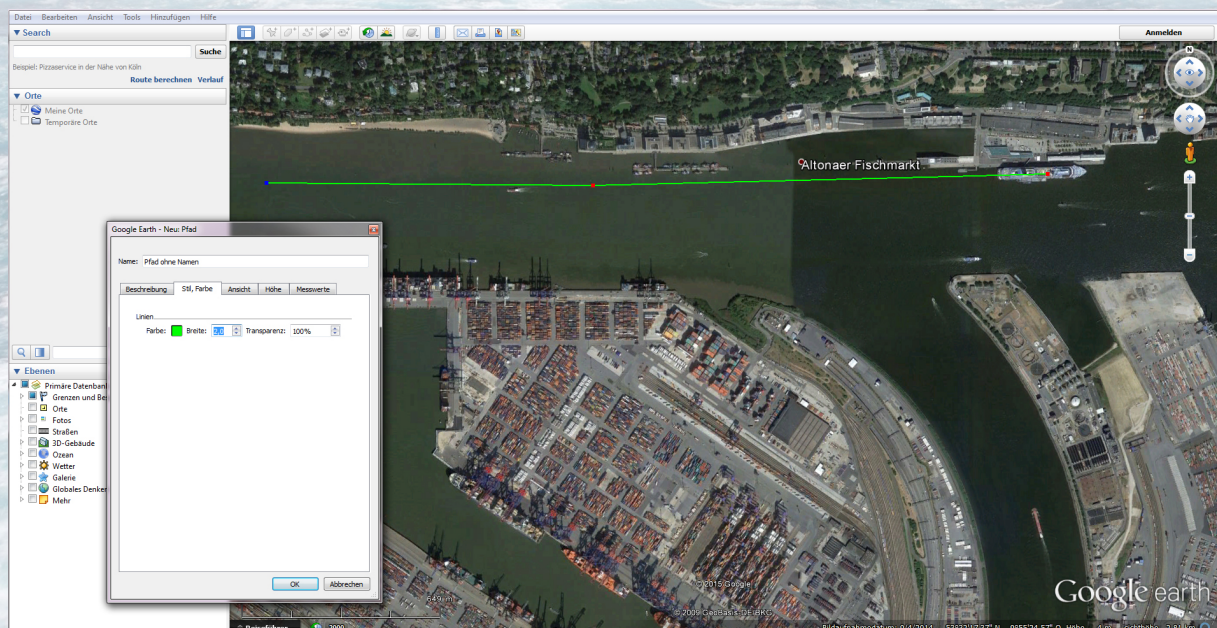
	With a high zoom factor you have quickly arrived at the edge of the window. Unfortunately, the map section cannot be moved with the mouse in this editing mode. But with the cursor or arrow keys on the keyboard you can also move through the map in edit mode. You can also use the mouse wheel to zoom out of the map and then zoom back in to the last waypoint so that you can continue working comfortably.

In this way, you create your route to the desired destination.
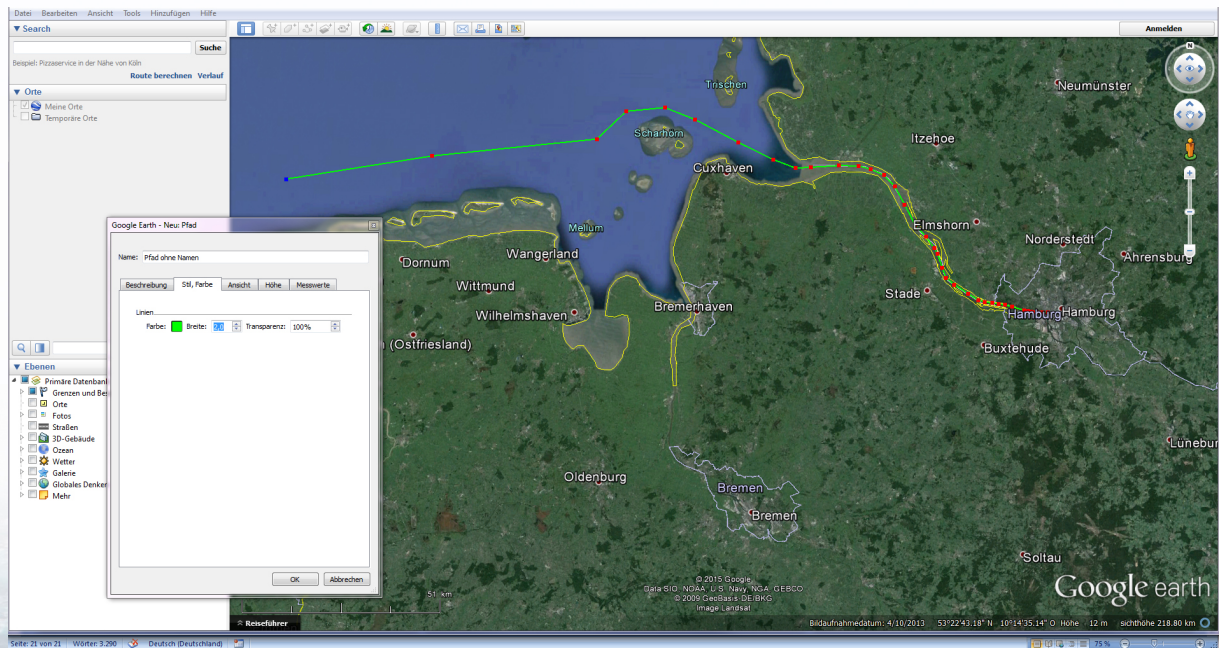
|	When creating routes, it is important to avoid islands, sandbanks, static ships that are in the way and other objects with which the ship could collide on its route. Here it is a small program called "Google Earth Tracker" very helpful, as you can use it to display the other AI traffic and berths of AI ships. In addition, this program also makes it easier to find ships in the vastness of the sea, as it displays all ship, air and land traffic (or all together) in Google Earth, within 200 km of your location, depending on your choice.

|	On the Measured values tab you can read the length of the plotted route in various units from centimetres to nautical miles during or after the route has been completed. Thus one receives already now with the speed of the ship entered in the Boats_XXXX.txt already a value from which one can calculate the travel time of the ship and has it thus with the timetable organization easier.

After you have finished creating your route, close the editing window by clicking on the "OK" button.

In the left program window you can see the new entry with the assigned route number (*here in the example 11111, see Fig.*).
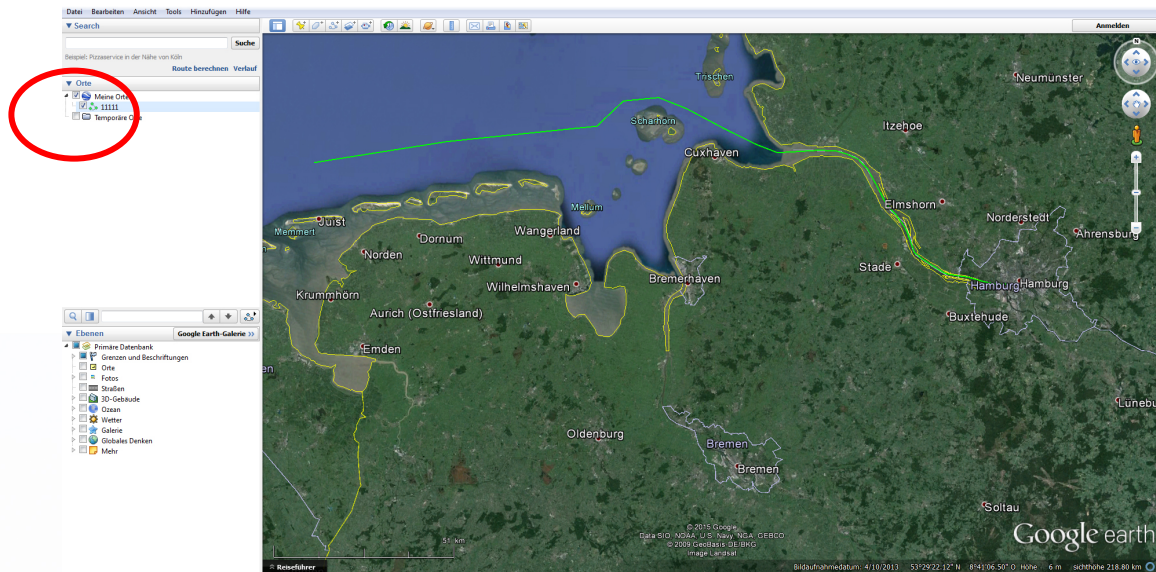
By clicking with the right mouse button on this entry, a fly-out menu opens in which the option "Save location as..." must be clicked.
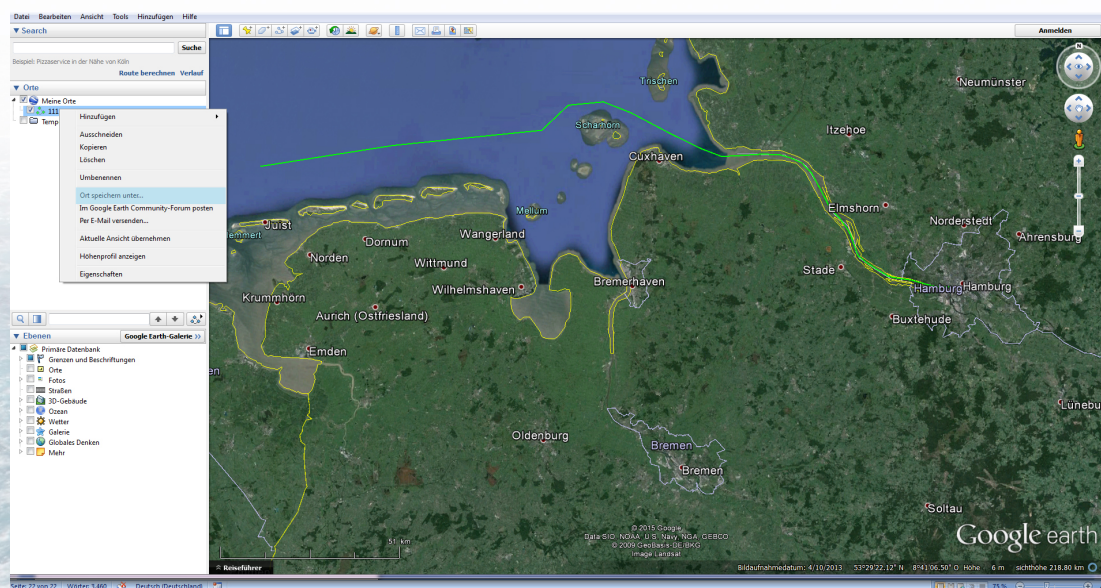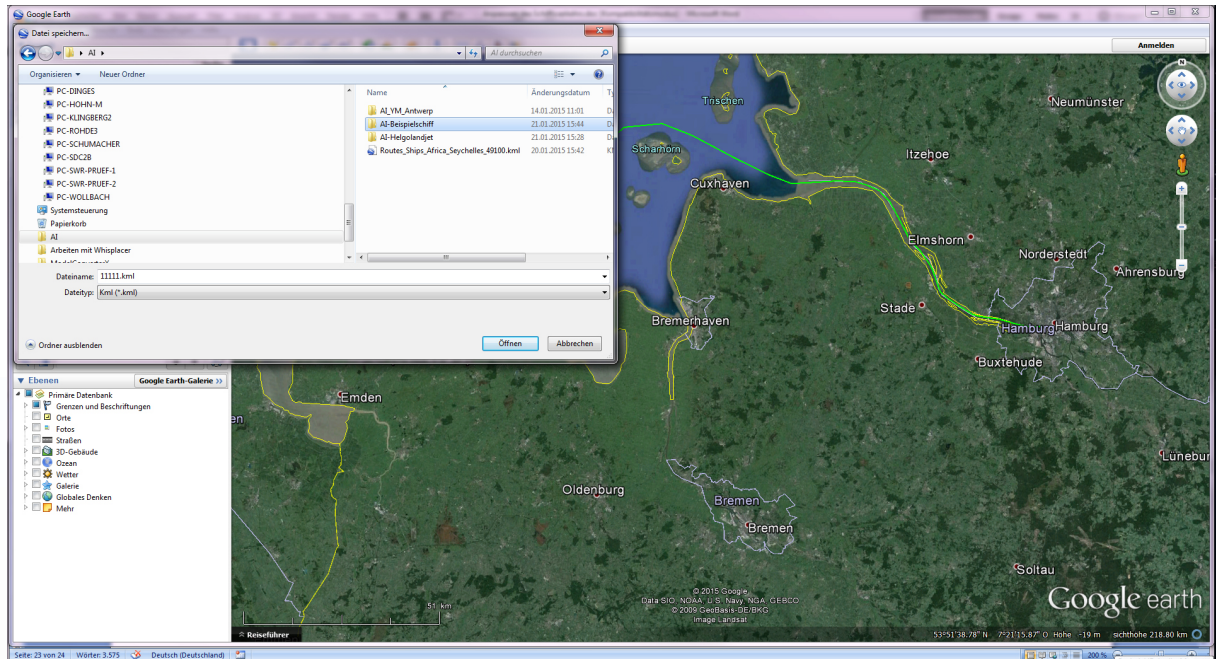

In the "Save" window that opens, the AI-Ships folder created at the beginning and the corresponding ship subfolder are selected, in which the "Boats_XXXX.txt" and "Plans_XXXX.txt" are or will be located (*see also chapter "Let's start"*).
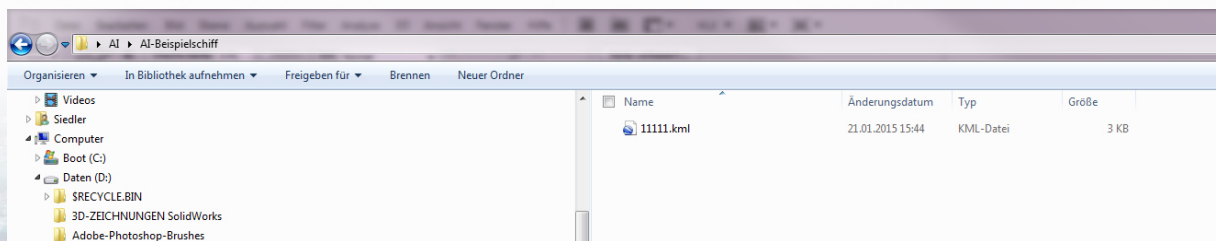
⚠️ **Notice:**
When saving do not forget to change the default file type from .kmz to .kml.

Now you can close Google Earth and go to the ship folder where the route you just created was saved..

There we now find the KML file saved under the route number, which will be renamed to the file name corresponding to the "Boats_" and "Plans_" files, as "Routes_XXXXXX.klm"..

For example:

"Routes_ship_EU_Hamburg_Sinfonia_11111.klm"

This would complete the creation of a new route.
For this to be effective in the simulator, the three files discussed so far must be compiled into a BGL file and copied into the folder .../scenery/world/scenery/ (or your own folder for ship traffic).

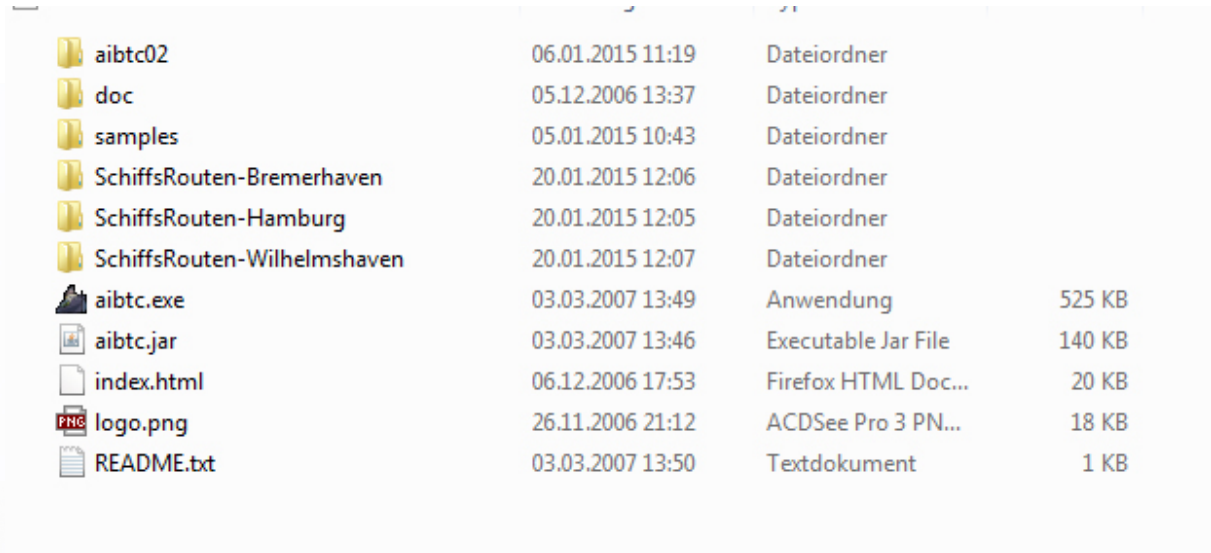How this is done is described in the chapter "**The Compiler**".

The Compiler

At the very beginning the folder "AI-Ships" was created (see chapter 2 "Let's start").

The downloaded zip file of the "aibtc" is saved in this folder. (AI Boat Traffic Compiler).

The picture shows the aibtc.exe with all files and my ship subfolders for ships calling at Bremerhaven, Hamburg or Wilhelmshaven
.

aibtc02	06.01.2015 11:19	Dateiordner	
doc	05.12.2006 13:37	Dateiordner	
samples	05.01.2015 10:43	Dateiordner	
SchiffsRouten-Bremerhaven	20.01.2015 12:06	Dateiordner	
SchiffsRouten-Hamburg	20.01.2015 12:05	Dateiordner	
SchiffsRouten-Wilhelmshaven	20.01.2015 12:07	Dateiordner	
aibtc.exe	03.03.2007 13:49	Anwendung	525 KB
aibtc.jar	03.03.2007 13:46	Executable Jar File	140 KB
index.html	06.12.2006 17:53	Firefox HTML Doc…	20 KB
logo.png	26.11.2006 21:12	ACDSee Pro 3 PN…	18 KB
README.txt	03.03.2007 13:50	Textdokument	1 KB

After a double click on the "aibtc.exe" the compiler starts (an installation on the PC is not necessary) and the following window opens.
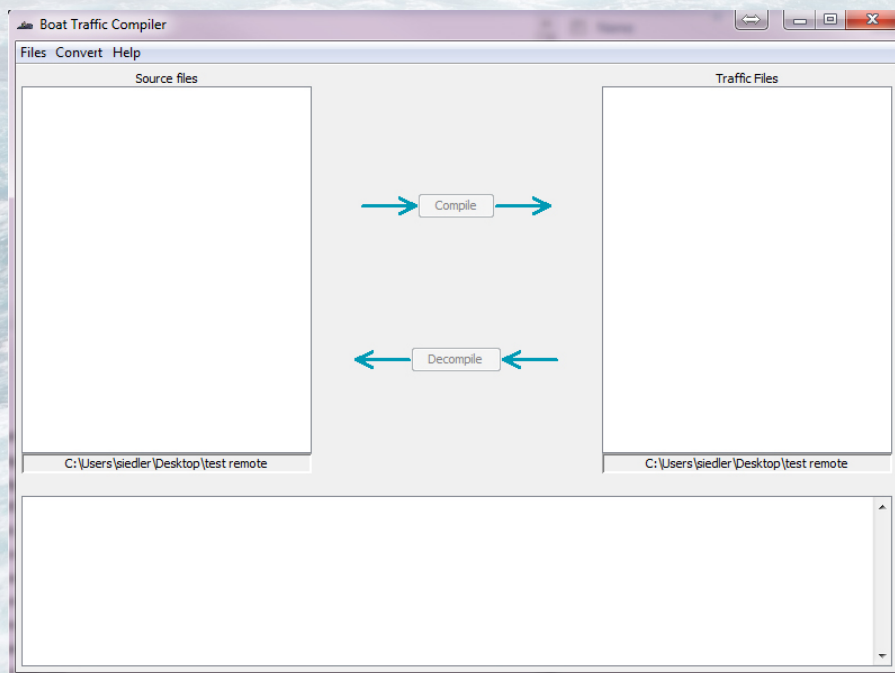
In the left column, the source files, i.e. the three previously created files "Boats_XXXXX.txt", "Plans_XXXXXX.txt" and "Routes_XXXXX.kml" are displayed as soon as the ship folder in which the files are located has been opened.

In the right column, the newly created file "traffic_XXXXX.bgl" will be displayed after the compilation process.

In the lower, wide column of the window, either a success message in black font or an error message in red font is displayed after the compilation process if something went wrong.

6.1 Compiling Files and Including them in the Flight Simulator
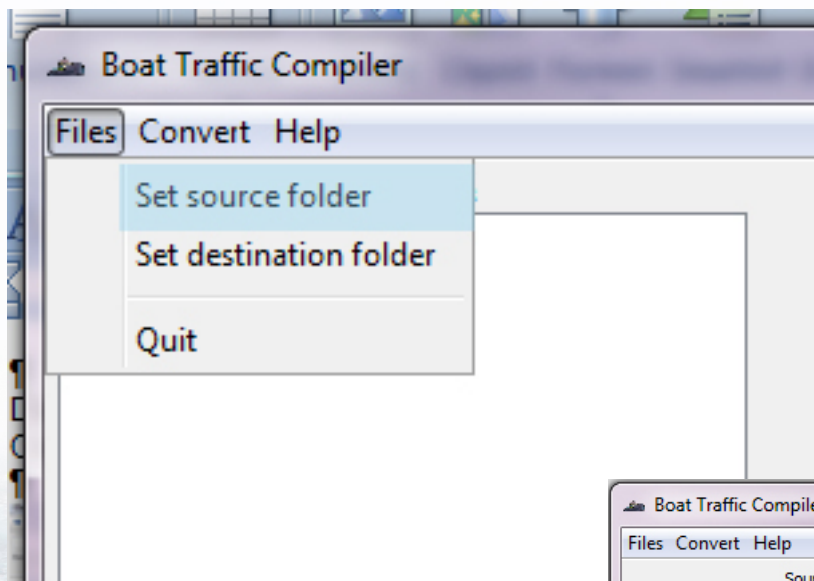
First the ship folder with the three source files is set up.

To do this, click on "Files" in the menu bar at the top left and then on "Set source folder", select the appropriate folder and confirm with OK.

Once you have selected the correct ship folder, the three files appear in the left column of the compiler window.

In the line below the column you can see the path to the source folder.
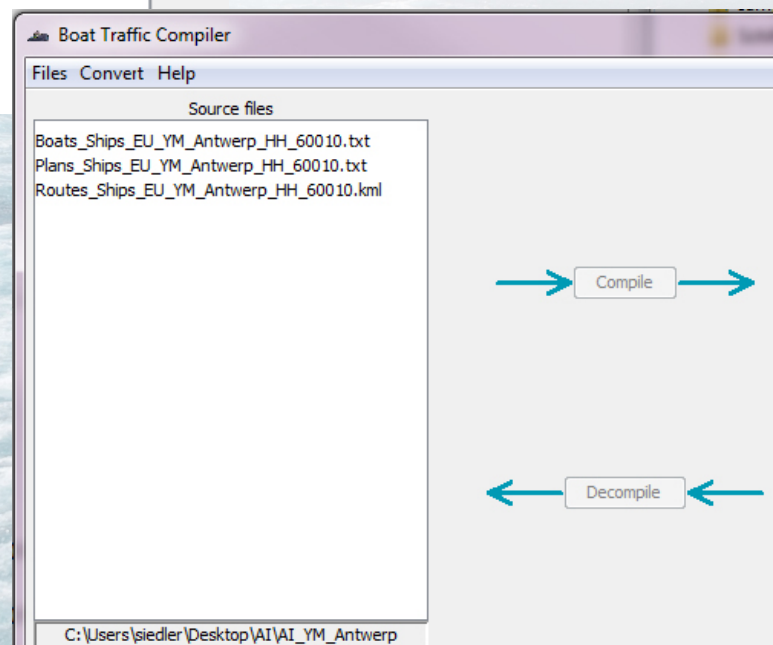
Next, select the destination folder for the compiled file.

To do this, click on "Files" in the upper left corner and select the option
"Set destination folder".

The destination folder is the same ship folder in which the source files are located..

<table>
<tr><td>TIPP</td><td>This has the advantage that all necessary files for a ship and its route are in the same place and you don't have to search in different folders later.</td></tr>
</table>

Despite the selection of the destination folder, the right column of the compiler window
remains empty at first, since we have not yet created a BGL file.
As a control, if the correct folder is set, the path is shown in the line below the right column
(as well as on the left side).

Now click **ONE** of the three source files.
If you have done everything correctly and the file names match (*see also chapter 2 "Let's
start*"), all three entries turn blue when you click on one file.

At the same time, the button "**Compile**", which was previously inactive, also becomes
active.
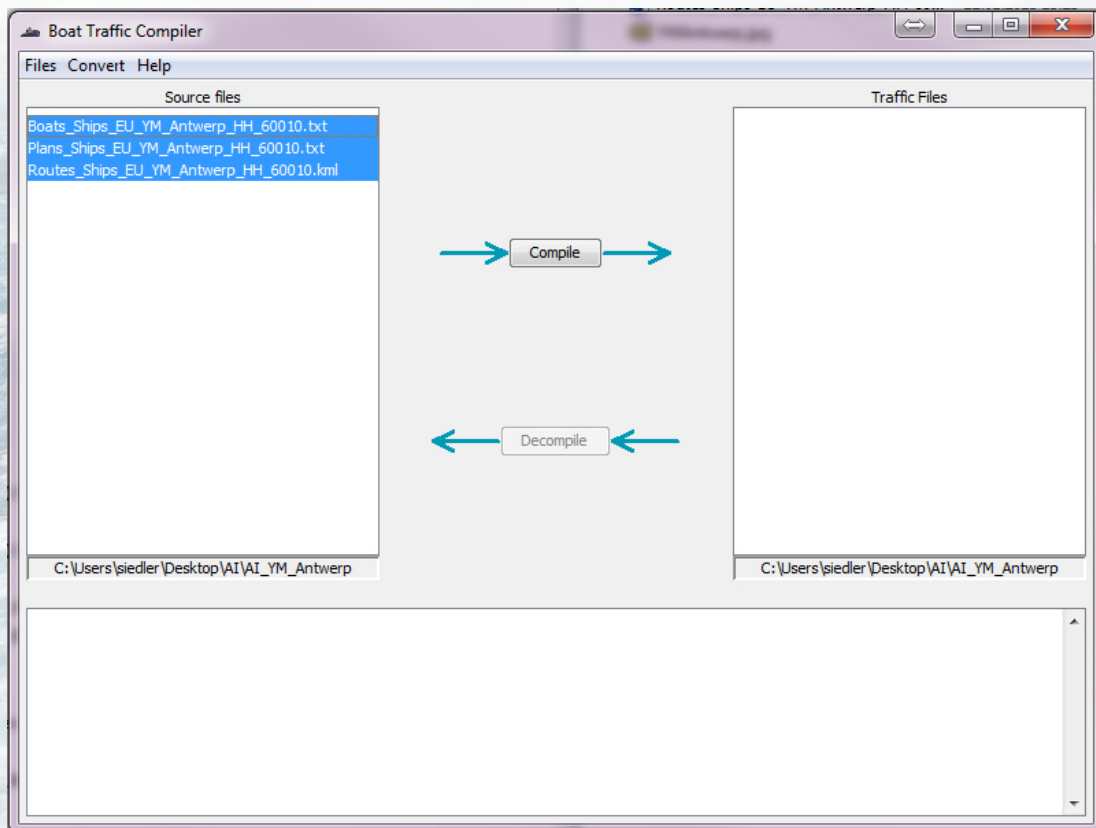
Now you click on the "Compile" button and the compiler does its work.

When the compilation process is finished, you can see the newly created BGL file on the right side and the success message of the compiler in the lower wide column (*if something went wrong, there is an error message in red font, which can be followed up and corrected*).
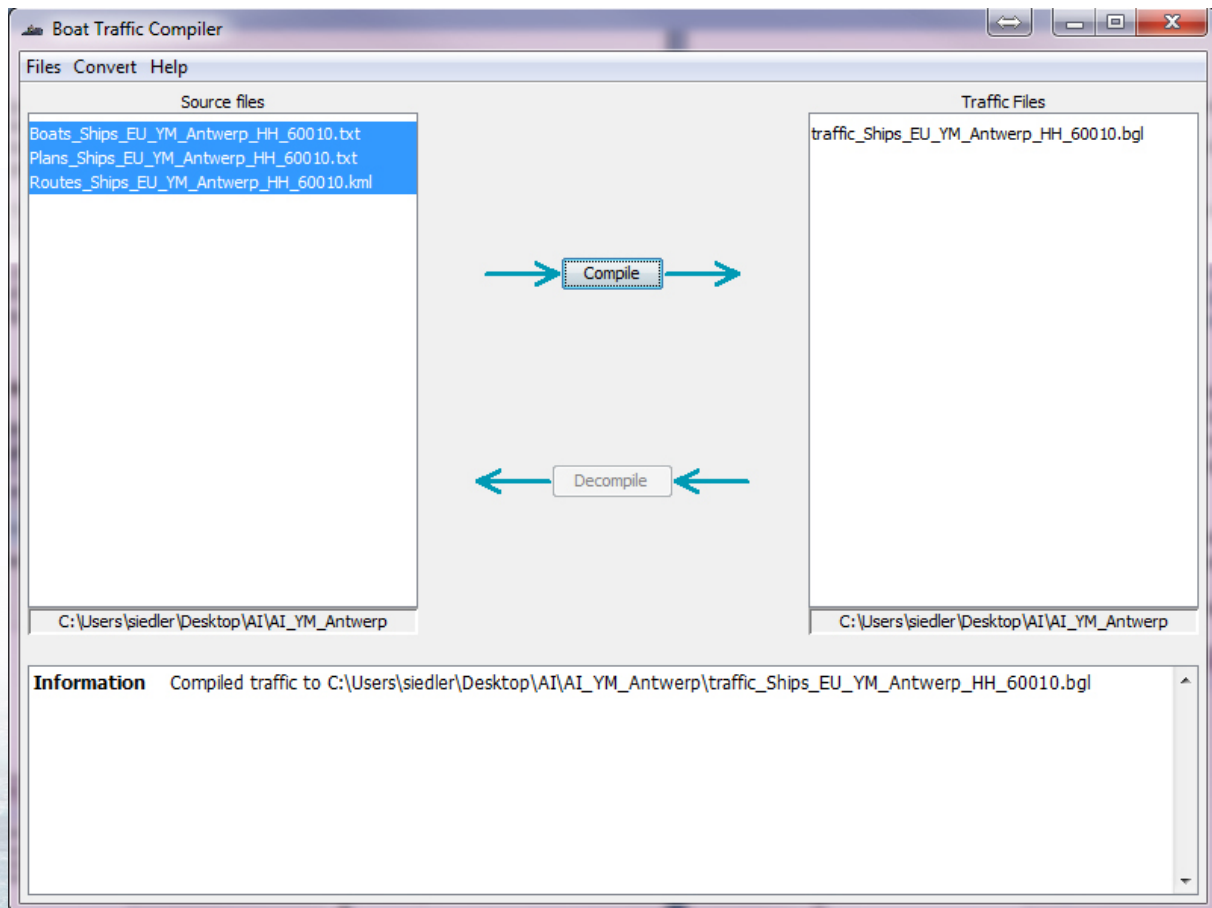
This completes the compilation process and the new BGL file with the new route is ready for use. **Now it just has to enter the flight simulator.**
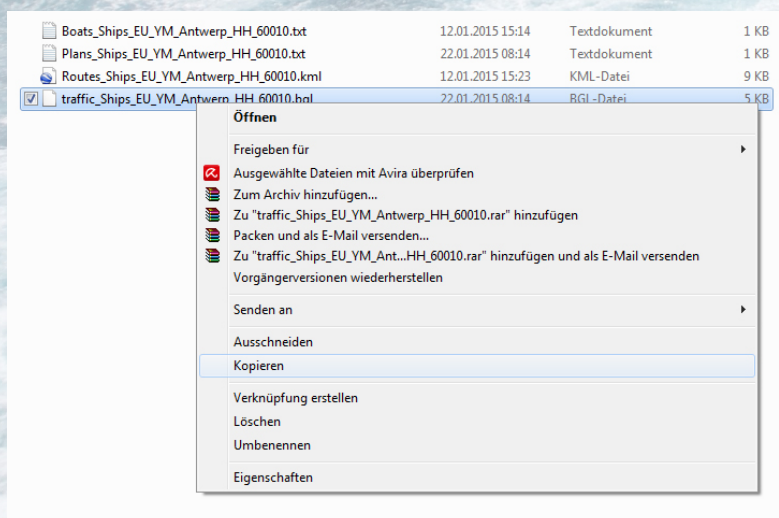
First open the folder in Win-Explorer where you compiled the file.

In our example this would be the "AI-Ship"-folder on the desktop and in it the corresponding ship-folder.

This folder now contains four files instead of the three source files, because the newly created BGL file is now also in it.

This BGL file is now clicked with the right mouse button and the option "copy" is selected in the opening context menu.
This copies the BGL file to the clipboard of the PC.

Now you change with the Windows Explorer into the directory:

Your Flight Simulator/scenery/world/scenery/ *(or your own folder for ship traffic),*

right-click on an empty area in the right part of the Explorer window and select "insert".

If the generated BGL file is a NEW file, it is inserted into the Scenery folder without comment and is immediately available to the simulator..
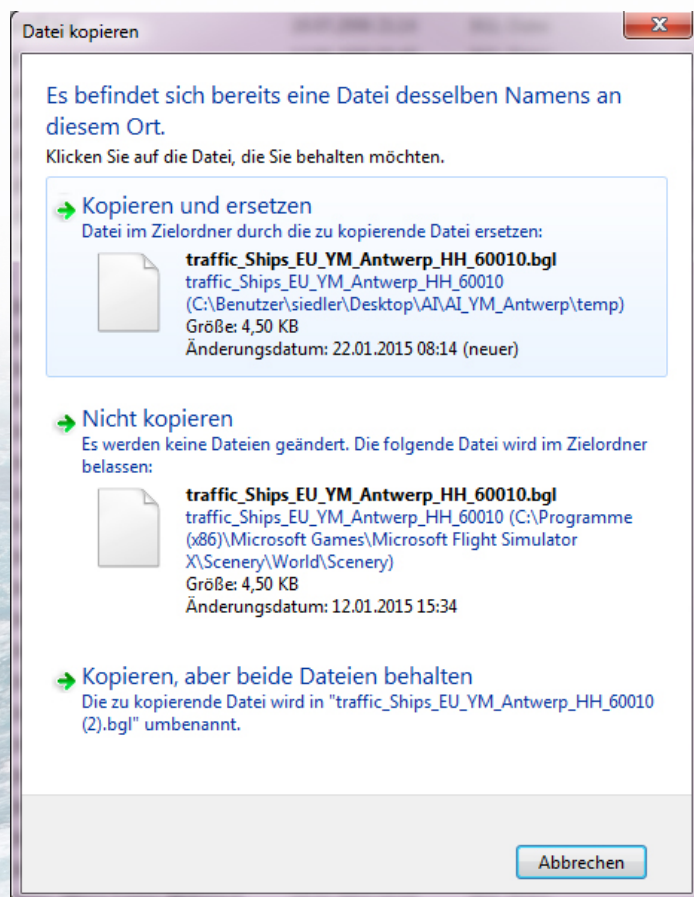
If you have only edited an existing route, and there is already a BGL file with the same name in the directory, this query appears (*see picture*).

Here you select the upper option Copy and replace („*Kopieren und ersetzen" in the picture*), which inserts the new BGL file into the directory and overwrites the old file.

Finished

6.2 Decompiling BGL Files

Every now and then it is necessary to change an existing route (edit), because it makes the ship collide with objects of an addon scenery or it doesn't fit at all, because it makes the ship run over land in one or the other addon scenery.

Many of the BGL files can be decompiled but unfortunately not all.

First we assume, however, that the file in question can be decompiled.

First of all we need to know which file it is. This can usually be determined by the name of the ship.

Very helpful are the tools "Google Earth Tracker" or "Little NavMap", in which you can see the AI shipping traffic in a 200 km radius around your location.

You can then use the Windows Explorer search function to search for the ship names displayed in the folder "Your simulator/scenery/world/scenery/" (*or in Henriks or your own ship traffic folder*).

Here I have now chosen the Arctic_Sunrise, which I now search for in the folder .... /scenery/world/scenery
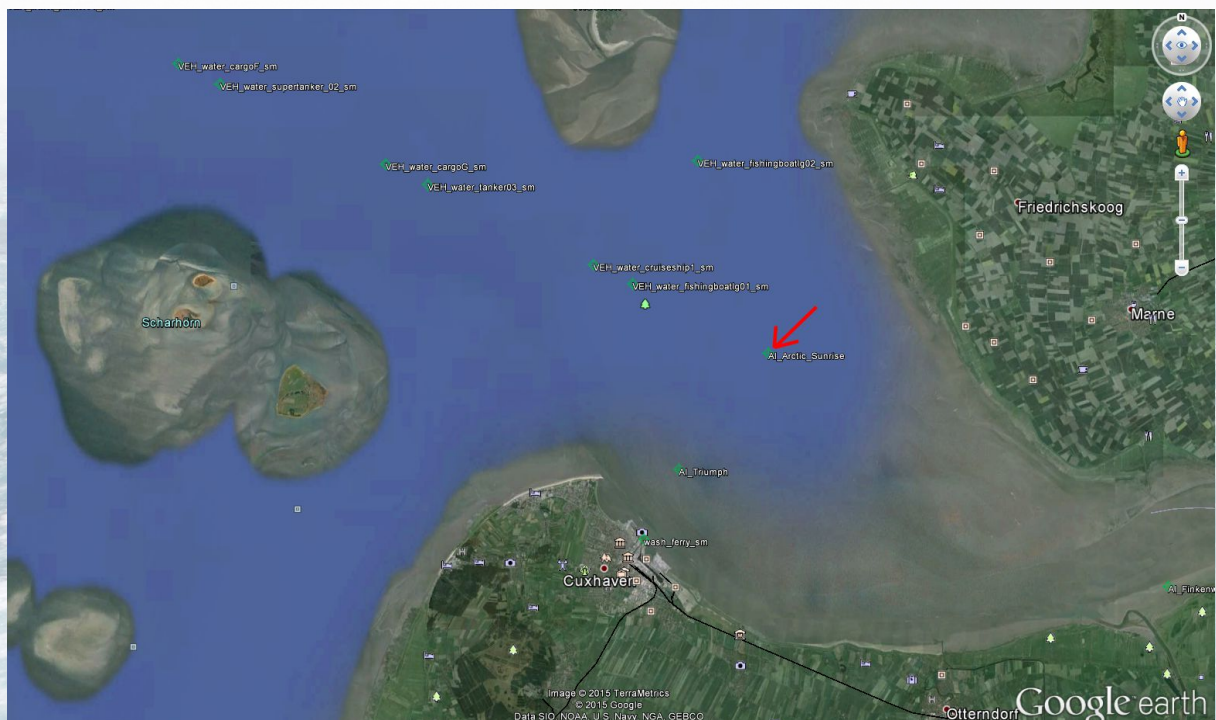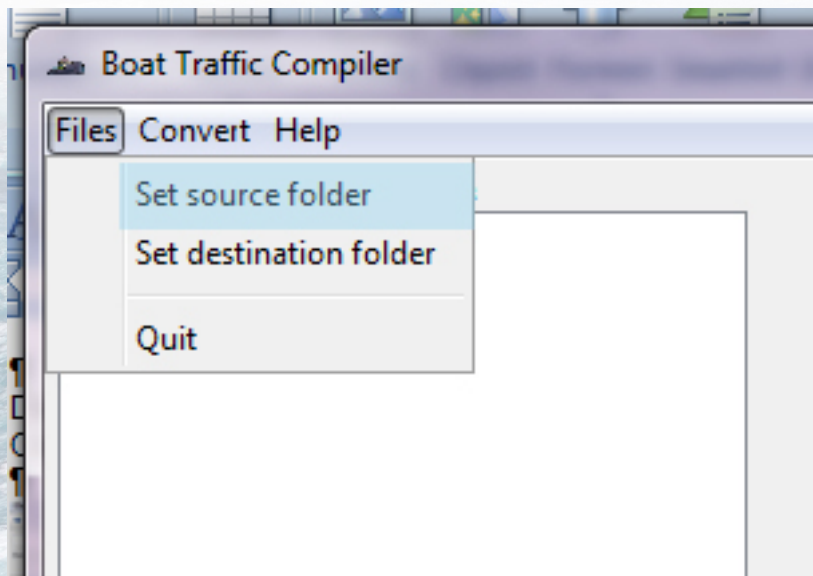
...and here it is found by the search function of Win-Explorer (**a reason why you should include the ship name in the file name**)
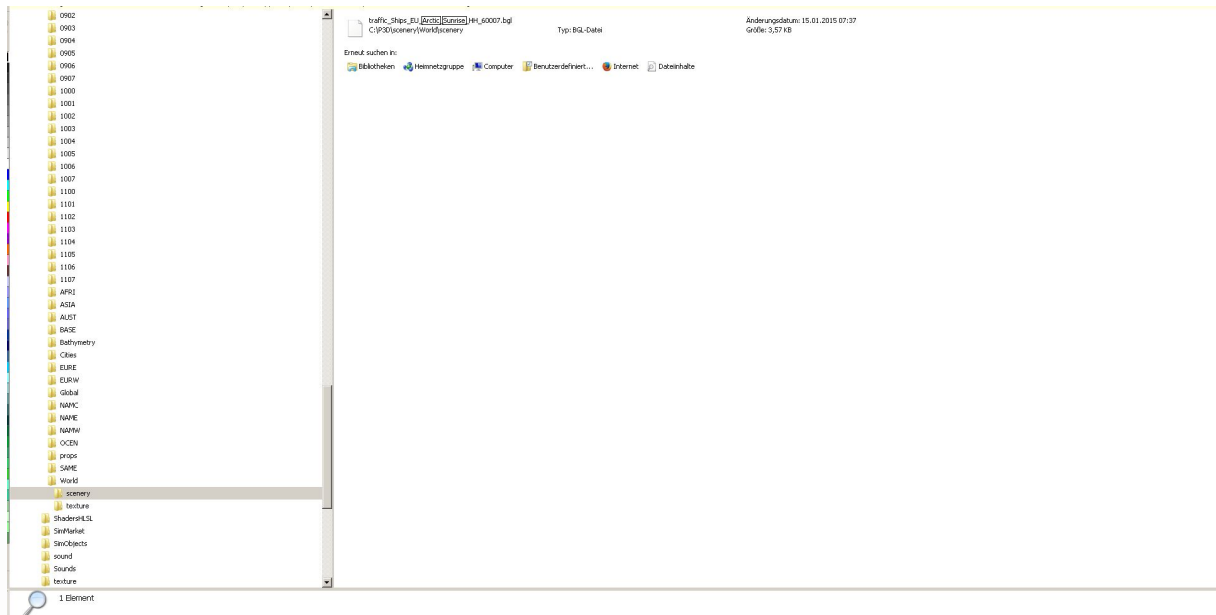
Once you have found the correct BGL file, first create a folder with the name of the ship in your AI-Ships folder (*see chapter 2 "Let's start"*).
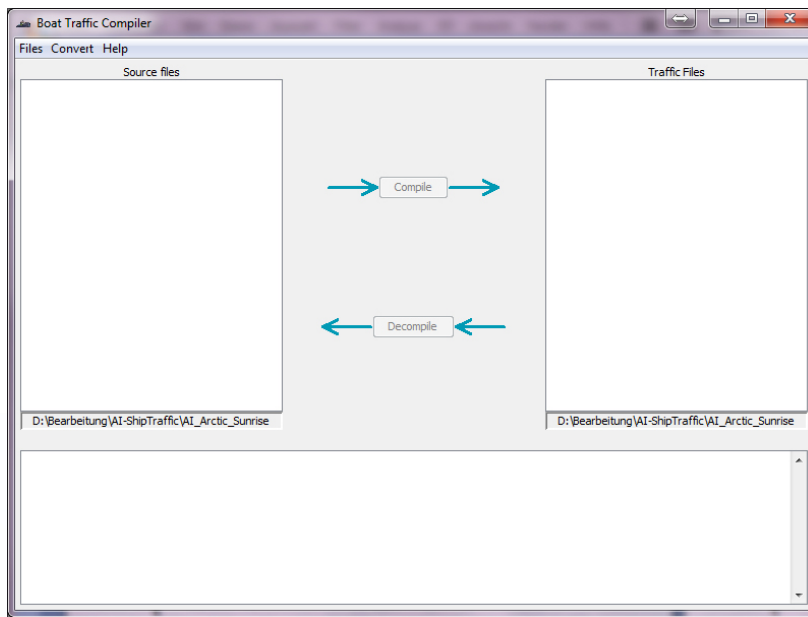
Then start the compiler with a double click on the "aibtc.exe".

First the ship folder is set, in which the three decompiled files are to be stored.

To do this, click on "Files" in the menu bar at the top left and then on "Set source folder", select the appropriate folder and confirm with OK.
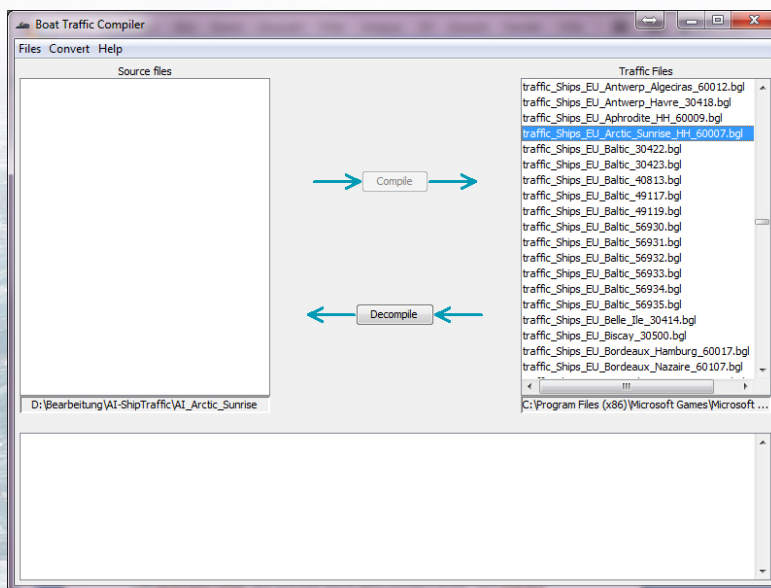
The left column of the compiler window remains empty, because there are no files in the folder yet..

The next step is to select the folder where the BGL file is located. This is the folder "your simulator/scenery/world/scenery/".

To do this, click on "Files" in the upper left corner and select the option Select "Set destination folder" and click through to the folder "your simulator/scenery/world/scenery/" in the "Open" window and confirm your selection with OK.

The right column of the compiler window now shows all BGL files located in the folder "…/scenery/world/scenery/".

Here you search for the file you want to decompile. In this example this is the BGL file of the " Arctic Sunrise".

Now also the button "Decompile" is active, which you click now.

If the selected BGL file is a decompilable file, the three raw files "Boats_XXXXX.txt", "Plans_XXXXXXXX.txt" and "Routes_XXXXX.kml" now appear in the left column of the compiler window.
If the file cannot be decompiled, an error message is displayed in the lower column.

6.3 What to do if a BGL file cannot be decompiled?

Well, in this case you can only do one thing.

After the procedure described in this manual, create a completely new route for the ship and overwrite the old BGL file with it.
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7 Tips and Tricks

TIPP	Even more ship models and ship routes for FSX and P3D (all versions) are available on SimDocks.de and in the SimDocks-Forum. Also the download links for Henriks "Global AI Ship Traffic"
TIPP	If a ship doesn't want to turn at the beginning or end of its route or doesn't want to leave or suddenly disappears completely, it's usually because the last two junctions are too close together. Between the first and second, as well as the penultimate and last node should be at least 3 ship lengths, (better still, if possible 4 ship lengths). If a ship already comes into contact with the next junction when turning, this creates a directional conflict and the route does not work. If the ship does not move even a few minutes after its departure time, you should increase the distance between the route points.
TIPP	If a ship does not set sail exactly to the second of its departure time, do not get nervous immediately. Sometimes a ship starts 1-2 minutes late.
TIPP	If you want, you can also create your own folder for the AI-Ships. For example under: "your simulator/Addon Scenery\Ships Worldwide\Scenery/". Then copy all traffic........bgl there, register the folder "Ships Worldwide" in the Scenery library and sort the entry somewhere between the default entries. **But NOT between possibly existing ORBX-FTX entries**.

Answers to the questions on page 14
Answer 1: Monday,
Answer 2: Monday,
Answer 3: Tuesday

We wish you a lot of fun with the creation of ship-routes.

Manfred Siedler (SimDocks.de) and of course also
Henrik Nielsen