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aero*soft*™

Hamburg
Day & Night

Manual

Add-on for

OMSI - The Omnibussimulator

Content

Important information before first use

This manual expects you are already familiar with the basic operations and original manual of OMSI.

Still, there are many new features to discover that will be explained in the following.

Scheduled AI traffic is known to require a lot of CPU power. To achieve good performance, you should keep the number of AI vehicles in the game options low. If you get error messages like „Not enough memory" or white surfaces during the game, you should reduce the numbers of both AI cars and buses. Also, you can reduce the schedule priority to 2 or 1. To reduce CPU and graphics load, we removed the option to take over AI vehicles and drive them. You always have to generate a new bus from the menu ribbon.

Please refer to the section "Information about performance" for recommended graphics settings.

In OMSI Hamburg you will find two drivable bus lines: 109 and 688. The 109 (Hauptbahnhof <> U Alsterdorf) operates daily between 4 am and 1am and is provided by the traffic company HOCHBAHN (which means elevated train).

The other line, 688, is operated by the traffic company PVG (from Schenefeld near Hamburg). This is a night bus that operates late Friday and Saturday from 7 pm to 4 am.

Please choose the line you wish to drive in the ribbon menu. You will have to select a tour with a predefined number (e.g. 65101 or 219011). This number has to be entered into the ticket printer in the bus to use all features like visible schedule plan, automatic announcements and more.

How to activate this tour in your ticket printer is described in the technical section below.

Most common station abbreviations

HBF = Hauptbahnhof Steintordamm

ZAL = Hauptbahnhof ZOB

UAL = U Alsterdorf

RHM = Rathausmarkt

ATH = Bf. Altona

WIM = Winterhude Markt

M = bus depot Mesterkamp (service trip)

P = bus depot Schenefeld (service trip)

Information about performance

I recommend a traffic density of 150–250 cars, 70 % parked cars, 300 pedestrians, 50 % passengers, schedule priority 2 and number of scheduled AI vehicles: 15. The texture memory for high def textures should be set to 1024 MB. Scheduled AI traffic is known to require a lot of CPU power. For this reason, you should keep the number of AI vehicles in the game options low.

If you get error messages like „Not enough memory" or white surfaces during the game, you should reduce the numbers of both AI cars and buses. Also, you can reduce the schedule priority to 2 or 1. To reduce CPU and graphics load, we removed the option to take over AI vehicles and drive them.

You always have to generate a new bus from the menu ribbon.

Lines and their priorities

priority 1:	priority 2:	priority 3:	priority 4:
109	5	120	3
688	112	124	4
	600	Alsterdampfer	6
	609	36	35
	S-/U-Bahn	2	115
		23	183
		118	179
		25	603
		601	640
		37	608
		26	1
		20	

If you find the game running really slow, reduce the priority in the options. Also use the number of scheduled AI buses to reduce the global number of AI buses on the whole map. This will improve performance a lot.

It is common that huge OMSI maps with many objects will not allow high frame rates. Hamburg is a city full of street accessories like signs, lamps, barriers and stuff like that. If your game is running slow, reduce the object complexity in the graphics options. It is also required to use a low number of neighbor tiles, best just 1.

You can get some extra frames by deactivating particles and stencil buffer effects.

Other settings like viewing distance, map complexity and target frame rate can be left in higher positions. Here are my recommended settings:
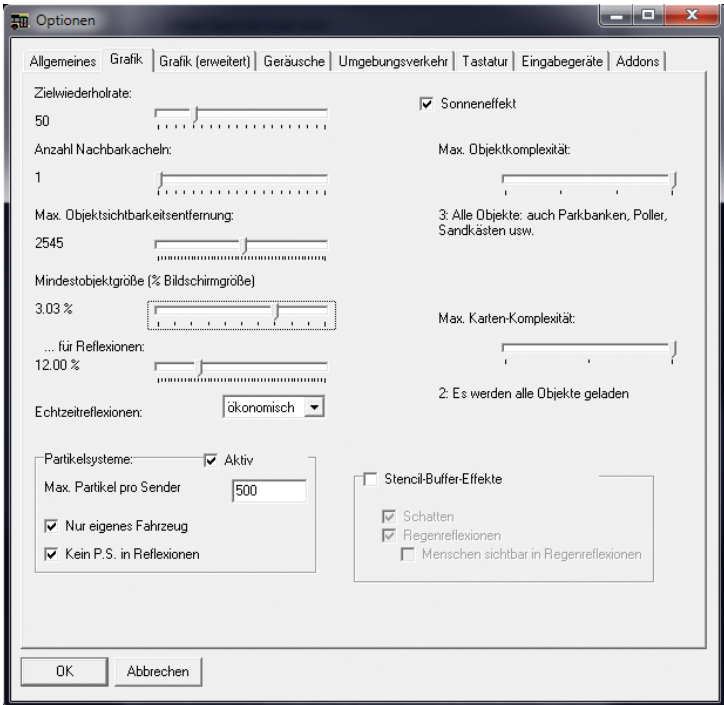
This will give you good graphics and high framerates.

All information is relating to OMSI release 1.03. We hope that the new engine 2.0 will allow much higher settings.

The lines

109

The line 109 was introduced 1976 and took over the former streetcar 9 route.

In reality you'll find articulated and some standard buses here. The standard city bus will be on service in the game. There are 14 tours with the same times on weekdays, on the weekends a little less.

During daytime weekdays it will operate from main station (Hauptbahnhof) to U Alsterdorf (subway station Alsterdorf). There is also a shorter trip in the evenings and weekends from Rathausmarkt (city hall market) to U Alsterdorf. In the rush hour you'll have a 36 minutes schedule for each direction.

If you are not yet familiar with Hamburg, just call up the route helpers in the menu ribbon.

The trip from the main station (Hauptbahnhof) starts on the wide street bridge over the tracks. Keep heading towards the bus station and enter the second driveway on the right. The first stop of the line is on the other side right before the traffic light. The bus station is a one-way.

When you have reached the final stop, just wait on the cobble stone park (the very right one). After your break, pull forward one bus length to the bus stop sign.

List of attractions on this line:
Main station, Mönckebergstraße, city hall, Binnenalster, Alsterfleet, Jungfernstieg, Hotel Vier Jahreszeiten, Gänsemarkt, Stephansplatz, old main post office, Planten un Blomen, Dammtor, Moorweide, St. Johannis church Pöseldorf, alternating one-way Sierichstraße, Winterhude Markt, police headquarter Alsterdorf.

List of city quarters on this line:
Hamburg-Altstadt, Neustadt, Rotherbaum, Harvestehude, Winterhude, Alsterdorf.

688

The night bus line is operating through the nights from Friday to Saturday and Saturday to Sunday between 7 pm and 4 am. In real life, you won't find it any earlier than 1 am, but this was changed for better gameplay.
As this line has only 16 minutes drive each way and operates every 90 minutes, one bus is sufficient for the whole service. This line is operated by the PVG traffic company from Schenefeld near Hamburg. In game you will use the 1994 make of the Hamburg city bus.

If you are not yet familiar with Hamburg, just call up the route helpers in the menu ribbon.
The route starts on Rathausmarkt at the very end near the small canal (where a new bus spawns). Just make a turn around the big building in the middle and pick up the people waiting on the other side of the bus stop area.
You will share the route with the 109 for the first 3 stops and then take the go-straight lane after the stop Gänsemarkt. You will head towards St. Pauli. The interesting part on this line is the split route between Museum and Altonaer Poststraße. On your way back from Altona you will drive along the famous Reeperbahn.

List of attractions on this line:
City hall, Binnenalster, Alsterfleet, Jungfernstieg, Hotel Vier Jahreszeiten, Gänsemarkt, Musikhalle (now Laeiszhalle), Brahms-Kontorhaus, court forum Sievekingsplatz, Planten un Blomen, Handwerkskammer, Millerntorplatz, Heiligengeistfeld (Dom), one-ways of St. Pauli (Simon-von-Utrecht-Str., Talstr., Hein-Hoyer-Str.), Große Bergstraße, Bf. Altona, Reeperbahn, Davidwache, Spielbudenplatz.

List of city quarters on this line:
Neustadt, St. Pauli, Altona-Altstadt

The vehicles

Hamburg citybus 12m (HHA)

The HOCHBAHN company acquired 71 low entry buses in the years 1993 (vehicle # 13xx) and 1994 (vehicle # 14xx). They were 12 meters long, featured 2 doors and mainly the same equipment as the other buses in Hamburg through those years. 5 of them were used as driving school vehicles.

They were all missing rpm indicators but were equipped with the typical separate ignition key and 5-speed automatic transmission with lockup from 3rd gear onwards.

The mechanical "TIM" ticket printer was replaced in the late 90s by the digital EFAD (translates as Electronic Ticket Printer). In the early 2000s, a digital radio and GPS control was installed to improve the passenger information system. A few other details were changed during the following years. The green cushions were replaced with red-blue ones. The electric wheelchair ramp was removed because it was hardly ever working. A manual flap ramp was installed as a replacement.

The buses were also equipped with additional bus stop displays for the passengers and automatic announcements. In-game you'll find the original equipment represented by the vehicle numbers 13xx and the later condition by vehicles with numbers 14xx.

All original 71 vehicles were sold during 2007-2009.

Facts

Length	11.910 mm, width: 2500 mm, height: 2935 mm
Engine	6 cylinders (row), horizontal, 11,9 l, four stroke direct injection, rated 2200 rpm, 157 kW = 213 HP
Transmission	5-speed automatic
Electronic speed limiter:	~90 kph

Unloaded weight:	10.350 kg
Gross load weight:	18.000 kg
Seats:	40+1
Standing rooms:	59

Hamburg city bus 12m (VHH PVG)

20 vehicles of this type were acquired by the PVG company from Schenefeld near Hamburg in 1994.

They featured a grey interior design, 4-speed automatic transmission, rpm indicator and ATRON ticket printers with external terminals for passenger self-service in the back (upgraded 1999).

Also, there was one car with air conditioning (# 0546) and one with driving school equipment (# 0548). Originally, all vehicles had the electric wheelchair ramp but they were replaced by manual flap ramps later because the electrical system was not working properly.

In opposition to the buses from the HOCHBAHN, these do not have an ignition key but just the stock start button.

All vehicles were put into service in Mai 1994 and sold in 2009 (except # 0548, it's still in service by 2013).

There is an alternative color scheme in blue which was applied on a few buses after the original advertisements had been removed.

Facts

Length:	11.910 mm, width: 2500 mm, height: 2935 mm
Engine:	6 cylinders (row), horizontal, 11,9 l, four stroke direct injection, rated 2200 rpm, 157 kW = 213 HP
Transmission:	4-speed automatic
Electronic speed limiter:	~90 kph

Unloaded weight:	10.350 kg
Gross load weight:	18.000 kg
Seats:	40+1
Standing rooms:	59

Non-playable AI buses

On the non-playable AI lines you will also see buses from 1991-1992 (HOCHBAHN), 1993-1994 (VHH) and 1992-1993 (PVG). The VHH buses are painted in the traditional colors red and black for better distinctness. In reality, just a few vehicles had the honor of being painted in this color scheme.

The PVG vehicles had two different paintings: red-white, blue-white and pure white. All HHA buses were painted in standard red-white.

Vehicle operations

The operations are explained referencing to a fully equipped bus. Some buses may have less features..

External door switch

Open the right front cover with the mouse and click on the click spot left from the water tank. The external door switch also works with electrics turned off or door control malfunction.

1	Double pressure gauge front axle (white = reservoire, red = actual brake pressure)	17	Indicator parking brake
2	Double pressure gauge rear axle (white = reservoire, red = actual brake pressure)	18	Indicator ABS/ASR active, error or self-test
3	Rpm indicator (green = economical range, red = limiter range)	19	Indicator kneeling
4	Gauge cooling fluid temperature (normally 90°)	20	Indicator door(s) open
5	Gauge gearbox temperature (normally 75°)	21	Indicator radio communication
6	Gauge oil pressure	22	Indicator retarder
7	Trip recorder (upper red light: speed warning, lower: open or error)	23	Indicator ASR off
8	LCD thermometer (inside/ outside)	24	Indicator electric wheelchair ramp

9	Indicator general failure (pressure reservoir too low or vehicle not safe to drive)	25	Indicator stop brake/starting inhibit
10	Indicator oil pressure	26	Indicator electronical engine control
11	Indicator battery voltage	27	Indicator window heat
12	Indicator full beam	28	Indicator auxiliary heater
13	Indicator turn signals/warning lights	29	Hand brake valve for parking brake
14	Indicator stop request by passenger	30	Test switch malfunction indicator
15	Indicator ramp request by passenger	31	Combined switch blinkers, wipers, horn, full beam
16	Indicator doors closed		

32	Switch rear fog light	46	Switch front heater level 1
33	Electrics main switch/head-lights switch	47	Switch front heater level 2
34	Button engine start (or ignition key)	48	Switch front heater level 3
35	Button engine stop	49	Switch floor heater level 1/2
36	Switch 4-way flasher	50	Switch driver ventilation level 1/2
37	Switch retarder direct	51	Switch ASR off
38	Switch retarder coupled with brake off	52	Switch lock front doors both sides
39	Switch fog headlights	53	Switch kneeling
40	Switch drivers light	54	Switch side window heat
41	Switch interior light front	55	Gear selector
42	Switch interior light rear	56	Switch stop brake
43	Switch lock front doors both sides	57	Button open/close front door

44	Switch electric wheelchair ramp	58	Button open/close rear door
45	Switch ceiling ventilation rear		

Main electrics

Insert the electrics main key (press „E") to turn on the main electrics and ignition. If the gear selector is set to neutral you can start the engine with the start button or key (press „M"). As long as the engine is running, the generator will supply the main power and load the battery.

By turning the main key (press „L") you can turn on parking and head lights.

Doors

The door switches on the dashboard are working when main power is available (battery or generator). Doors will only open at low speed or halt. You have two lock functions for the front door (switch 43 & 52). The automatic starting inhibit brake will be activated when the rear door is open and a gear is engaged. By turning the manual valves over the doors, you can release pressure and open the door wings manually.

If the electrics are switched off and doors are still open, the control will allow to close these once and then cut the power. You can check the status of the doors by looking at the red and green control light on the panel. The light will also indicate low pressure in the door system and other malfunctions.

59	Thermostat	63	Switch flaps driver ventilation
60	Switch radio communication (no function)	64	Switch flaps window ventilation
61	Switch front window heat	65	Switch flaps front ventilaton
62	Switch auxiliary heat	66	Gauge fuel tank (265 l = 4/4)
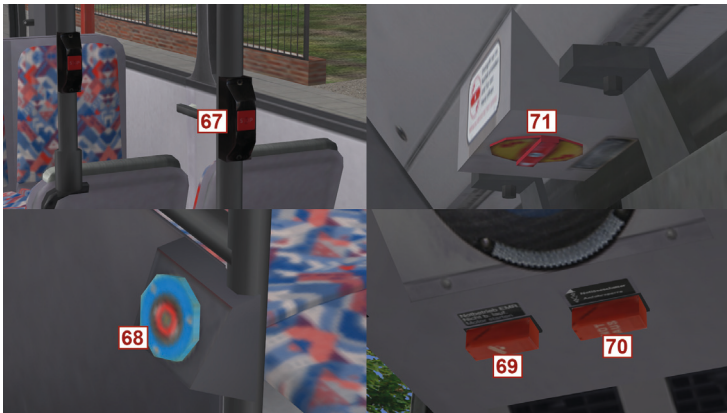
67	Button stop request (for passengers)	70	Emergency start inhibit system switch-off
68	Button ramp request (for passengers)	71	Pressure release valve for doors (front & rear)
69	Emergency engine control switch-of		

Stop brake

The stop brake (Switch 56) is a useful function to keep the vehicle halted while having only the front door open or waiting at a traffic light. If you press the switch down, the start inhibit is activated and the vehicle will not roll even when a gear is engaged. If you reset the switch to the middle position, the stop brake will not be released until you step on the accelerator pedal. This function also helps saving air pressure in the reservoir.
The start inhibit will automatically be engaged if the rear door is open, the electric ramp is active or the vehicle is kneeling. In that case you do not have to press the switch. Also, it may not be used as a parking brake.

Ramp

Some buses are equipped with an electric wheelchair ramp. Switch 44 will move the ramp out if the following conditions are met: Vehicle standing, rear door closed, engine active. After extension, the ramp will automatically open the rear door and trigger the start inhibit brake. Put the switch back into middle position and the rear door will be closed, ramp will move in and the start inhibit is released.

Kneeling

Switch 50 will kneel the bus down on the right side if it is standing, doors are closed and the engine is running.

The start inhibit brake will be engaged. If you close the doors and the bus is kneeled, it will automatically lift up again. Press switch 53 in upper position to lift up manually. The kneeling control light (19) also indicates low pressure in the air ride.

Ventilation and heat system

The bus is equipped with two ceiling fans in the back, front ventilation, floor ventilation, driver space ventilation, two manual roof hatches and two manual flap windows.

The switches 46–50 control the speed of the fans. On the left window switch panel, you can separately open and close the air flaps (switches 63–65). The thermostat pot blends warm and cold air supply of all fans.

If the engine is cold, you can use the auxiliary heater (switch 62). PVG bus #0546 has an additional A/C.

Automatic transmission

All buses are equipped with automatic torque converter gearboxes with 4 (PVG) or 5 (HHA) forward speeds and hydrodynamic intarder brake. The gearbox control will change gears depending on speed, pedal position, gear selection, acceleration, brake and retarder setting. With the keys 1–3 on the gear selector you can limit the gears to the selected number. Using position „D" is recommended for most situations and will use all available forward speeds. Reverse gear „R" may only be engaged after neutral „N".
The automatic torque converter lockup (direct connection between engine and axle drive shaft) will be engaged from 3rd gear upwards and above certain speeds in the lower gears.

The integrated retarder brake (= intarder) is coupled with the brake pedal by default. You can uncouple this (e.g. if road is slippery or gearbox overheated) by turning on switch 38. The retarder can be constantly activated by pressing switch 37. This will take load from the air brakes.
The retarder will automatically be disabled if the gearbox is overheating, the accelerator pedal is pushed down or the gear selector is set to neutral.

The transmission is also equipped with an automatic switch to neutral when halted (neutral on stop). If any brake is applied to the standing

vehicle and a gear is engaged, the gearbox will take out the gear and stay in neutral until you release all brakes or push the accelerator. This takes unnecessary load from the driving shaft and air brakes while standing. This function is causing the whining sound when the vehicle is standing.

ABS (anti blocking system) / ASR (traction slip control)

The red ABS indicator lights up before accelerating to indicate a self-test. If one or more wheels block when braking, the ABS control will level the brake force to avoid this. This is also indicated by the red ABS light.
The ASR (traction slip control) prevents the drive wheels from slipping. It will also use the ABS/ASR indicator light. Switch 51 deactivates this control when driving slower than 15 kph.

Emergency release

The start inhibit (rear door open, ramp or kneeling active) can be deactivated with switch 70.

Clipboard

The driver's clipboard always shows the timetable and schedule matching the tour number you enter into the ticket printer. Click on the clipboard to switch between day schedule and line's timetable.

EFAD (ticket printer HHA)

Interactive keys marked blue

Shift begin

The EFAD starts together with the main electrics. It will also keep running for 10 minutes if you pull out the key.

The driver has to log in after startup and activate the ticket selling mode. You see the driver's card ("MOBILE card") on the left side of the device. Without this card, you can still set the target display and announcements but you cannot sell tickets. Click on it to put it in. The EFAD requests your personal code number (see the little yellow note). You can change this number in the text file: Omsi/Vehicles/HH109_Stadtbus…/Scripts/ticketprinter_efad_constfile.txt.

You can erase wrong inputs with "Entf x" (orange). Confirm with green ("Ja"). A test ticket will be printed. Click on it to remove it. In case you are on a split shift you can now enter the income to add to this new shift. Otherwise, just confirm with green "Ja" to go ahead with zero income.

The employee's number will automatically be read out of the card and just has to be confirmed with the green key. Then you can enter the "Umlauf" (which is the tour number, this will automatically set the target display) or enter line and target manually.

Driving on schedule

The easiest way to use the EFAD and all its functions is using the correct tour number. You will find this tour number when you select your schedule from the OMSI menu. Please remember it and enter it into the ticket printer. Press "Li-Krs Weg" (black) on the EFAD to check or change the tour number. If you have entered the correct number, confirm the tour in the following menu and the printer will automatically control the station announcements and target display. Also, it will enable the clipboard schedule paper.

In case you turned off automatic announcements in the function menu, you have to manually forward the bus stop number by pressing the up arrow key. This represents the condition before 2006 when GPS control and digital radio was installed in the buses.

Ticket selling

If the driver's card has been correctly logged in (see „Shift begin"), the display will say „verkaufsbereit". That means ready to sell. Now you can use the orange keys (and purple for 1-day ticket) to print a ticket. The amount will be added to your shift total.

The passengers will just request a small selection of tickets because there are no childs or first class buses in OMSI. With the red key „Storno Quittg", you can cancel the last sold ticket and print a reversal ticket.

Here is a list of all tickets the passengers will request and the corresponding key on the printer:

One way near / Einzelfahrschein Nahbereich = 2

One way standard / Einzelfahrschein Grossbereich = 3

One way metropolitan area / Einzelfahrschein Gesamtbereich = 4

Day ticket 9a / Tageskarte 9 Uhr = purple key „Tag"

Set line/target manually

You can enter the tour number menu with „Li-Krs Weg" (black) from the main screen. If you remove the tour number (or leave it empty) and press the „Li-Krs Weg" (black) one more time, you will be able to enter lines and target codes manually. See the list above the driver's seat. The available codes depend on the bus company.   Remember that this manual setting will not work while having a tour number activated.

The black key „Sonderziel" will allow you to just change the target display. This also works when a tour number is active. "0" will delete the display. If you have a tour active and set the display to something else, just enter "Li-Krs Weg" again and press green one more time to restore the correct target display.

Options

Press „Funktion" (black) to enter to enter the option menu. There you can change two options with the number keypad: „1" will show the current shift total from ticket sales. „2" will switch between manual and automatic stop announcements forwarding. The default is automatic. This is stored individually for each bus until it is deleted or a new situation on the map is loaded.

Shift end

To cancel the shift and ticket sales, press „Ubr Abr" (black). The EFAD will print a shift report and you can take out the driver's card by clicking on it.

Driving on other maps

Surely you can use the Hamburg buses on other maps as well. Remember that some functions will not work and the ticket printer's functions will be reduced to some basic features. You cannot enter tour numbers and there is no function and driver's card menu. The printer is „ready to sell" by default and gets all timetable data from OMSI. Please set the line and target display with „Li-Krs Weg" or „Sonderziel".
Just give it a try on Grundorf or your favorite map.

ATRON (ticket printer VHH PVG)

Operations

The number keypad is used to enter tour, target or line number. False entries can be erased with „C" (red). This key will also cancel a menu or operation and go back one step. The green key (Enter) confirms the current screen. „F" takes you to the function menu. The options offered on the sides of the screen (e.g. main screen or ticket sell mode) can be activated by clicking the corresponding white key on the sides of the screen.

Shift begin

To get into the ticket sales mode, open the top cover by clicking on it, then push in the driver's card and close the cover. The card will be recognized by the printer and you hit the green Enter key to continue. Enter your tour number in the menu „Dienstwechsel" (= shift change) and confirm with green. This will activate the automatic station announcements, target display and show the schedule on the clipboard.

Driving on schedule

The ATRON is completely relying on GPS and the speedometer signal to automatically recognize the position of the bus. A manual forwarding of stops and announcements is not possible. If you have set the tour correctly, you will see a request with a trip summary. The doors must be closed for this. Confirm this query and the printer will automatically set all displays and announce the next stops. The ticket sales mode will automatically come up when the bus is standing and doors are open. It switches back when you continue to drive.

Ticket selling

If you stop and open the doors, the ATRON will automatically go into the ticket sales screen. You can also press „Verkauf" (= sales) to get there. Choose the requested ticket with the white buttons on the sides of the screen. The corresponding ticket will be displayed on the screen. The device has to be in sell mode to print tickets (see „Shift begin"). Confirm with „OK" (down right) or press „C" (red) to get to the main screen.

Set line/target manually

The manual setting of targets is no longer prohibited in real life. You can still do this when you erase the tour number from the „Dienstwechsel" and then choose „Linie/Kurs" to enter a line and target number. Check the target code list above the driver's window. Remember that the stop announcements will not work.

Night mode

The ATRON display will automatically go into night mode and invert the colors at night.

Options

The white „F" key will take you into the option menu. You can see the shift total („Zwischeneinnahmen"), cancel the last sold ticket („Storno"), change the tour, target or line number („Dienstwechsel", „Linie/Kurs", „Zielwechsel"), end the current shift (see below) and turn on and off the key beep sound („Eingabeton").

Shift end

Click „F" for function menu and choose „Schichtende" (= shift end). Confirm the next screens and take out the driver's card.

Driving on other maps

Using the ATRON on other maps is difficult due to the complex menu structure. The ticket names cannot be changed and will show the Hamburg tickets on all maps. The other basic functions (announcements, target and line display) will work just fine.

Malfunctions and collision damage

There are a few malfunctions and system errors that can occur after a collision or randomly from time to time. The random malfunctions are exactly what these buses experience in real life as well. Check out this list to see what to do in case of failure.

Indicator „failure" lighting up when:

reservoir pressure too low (see below), engine rotation too slow, gearbox oil temperature too high, malfunction of transmission control unit or vehicle not safe to drive.

Indicator „electronic engine control" lighting up / Engine is not accelerating / Kick-down not working

In case of failure of the electronic engine control use the emergency release switch or try to reset the electronics. To do so, kill power for 10 seconds (stop engine and pull the key). This problem might also be caused by a faulty control setting that cannot be fixed by the driver.

Indicator „battery" is lighting up

If the generator was damaged in an accident, you need to repair the bus in a service garage (e.g. gas station). You can continue driving as long as the battery has enough power left. Do not turn off the engine.

Engine is not starting

Set the gear selector to neutral (N). Check if fuel tank is sufficient. Try to reset the electronics. To do so, kill power for 10 seconds (stop engine and pull the key). If that does not fix the problem, there might be a serious damage caused by an accident that can be repaired in a service garage (e.g. gas station).

Electric ramp stuck

Try to reset the electronics. To do so, kill power for 10 seconds (stop engine and pull the key).

Door malfunction / door does not close

Trigger door switch again.

Retarder brake not working

Gearbox might be overheating. Continue driving with low acceleration and let it cool down.

Main electrics dead

If the main electrics have been damaged in an accident, try to reset the electronics. To do so, kill power for 10 seconds (stop engine and pull the key).

Pressure reservoir leaky

The air pressure system might become leaky in accident. This can only be fixed in a service garage (e.g. gas station). You can continue driving carefully. You might try to brake with the parking brake.

Start inhibit cannot be released

Check if any device might trigger the start inhibit (rear door, stop brake switch, ramp, kneeling). In case of malfunction you can use the emergency release switch.

Hints for modders

The objects for the map „Hamburg109" are stored in the Sceneryobjects folders „HamburgLinie109" (buildings and crossings) and „HamburgLinie109Objects" (street objects, bus stops). New step sounds, tickets and passenger sounds were added as well. Original "m&r" objects were used for vegetation.

For performance reasons, there are no street signs with text textures (except the few red and white city quarter signs). The stop sign text cards were also created using textures for that reason.
There is just a small number of spline streets on the map (Mönckebergstr., Holzdamm, Neuer Jungfernstieg and a few „invisible splines" for additional paths). The reason is that the spline creation is very inflexible and does not allow to create intersections. The track was modeled in a 3D software in ca. 300 m long pieces.
Regarding the TTData you should know that the lines 666-668 are only responsible for controlling the AI traffic in the switching one way street „Sierichstraße" if a sufficient number of AI buses is set in the options.

The .dll / .opl in the plugin folder creates the warning window when you try to take over an AI bus. To remove this, just rename the .opl in .txt. You will still not be able to use AI buses though. In the hamburg_cfg.txt in the same folder, the game will store whether you clicked the radio box „Never show message again" or not.

The vehicle folder structure is self-explanatory. There are separate folders for AI and user buses to save CPU and GPU performance. It was not possible to create the AI traffic with „drivable full feature" buses.

Please be careful with the script files of the different bus versions. They may have the same names but are still different (e.g. cockpit.osc or timetable_system.osc). The same applies for the .o3d mesh files.

The bus sounds were recorded from original Hamburg buses or selected from my personal archive.

Information on the abbreviations

The street objects were named with abbreviations for now unknown reasons. Here is a list of all objects:

Small car traffic light pole 3 AKAM3
Small car traffic light pole 3 + green arrow AKGM3
Small car traffic light pole right 3 AKAR3
Small car traffic bracket 3 AKAB3
Traffic Bow Small Car 2 AKAM2
Small foot traffic pole 3 AKFM3
Small traffic light right foot pole 3 AKFR3
Small foot traffic pole left 3 AKFL3
Small warning lights left pole 1 AKWM3
Small Rightturn traffic. Pole 3 AKRM3
Small Rightturn traffic. Clip 3 AKRB3
Small Rightturn traffic. leftmo3 AKRL3
Small lights 45deg right pole 3 AKVR3
Small Rightturn traffic. Pole YG AKRM2
Small traffic laws pole RY 45Gr AKVR2
Small Rightturn traffic. Pole 1 AKRM1
Small Leftturn traffic. Pole 3 AKLM3
Small lights 45deg left pole 3 AKVL3
Small Leftturn traffic. Clip 3 AKLB3
Small Leftturn traffic. Bow 2 AKLB2
Small Leftturn traffic. Bow 2 AKRB2
Small Leftturn traffic. Pole 2 AKLM2
Small Leftturn traffic. Pole 1 AKLM1
Small traffic light Left + Straight Pole 3 AKXL3
Small Pedestrians Right + Pole3 AKXR3

Small Pedestrians Pole3 AKMG3
Small Pedestrians Bow3 AKBG3
Small Pedestrians rightm3 AKXG3
Small bus traffic light pole 3 AKBU3
Small traffic light bus 3 2xRed pole AKBZ3
Small bus traffic 3 - \ AKBL3
Small bus SLOPE green traffic light. 3 B AKBX3
Small bus traffic 3 -. V Pole AKBV3
Small bus traffic just 1 AKBU1
Small bus traffic light T 1 AKBT1
Small bus traffic light T-1 left Mont. AKBT1L
Small car traffic Dambach pole 3 adam3
Small car traffic Dambach Bow3 ADAB3
Small car traffic Dambach left3 ADAL3
Small car traffic Dambach right3 ADAR3
Small lights Dambach R.abb. Mst 3 ADMR3
Small lights Dambach R.abb. BüL2 ADMR2
Small lights Dambach L.abb. Mst 3 ADML3
Small lights Dambach L.abb. lnks3 ADLL3
Small lights Dambach Just Mst 3 ADMG3
Small lights Dambach Just lks3 ADLG3
Small lights Dambach foot pole 2 ADFM2
Small lights Dambach foot pole 3 ADFM3
Small lights Dambach Leftw. Pole1 ADLM1
Traffic light means auto bracket 3 AMAB3
Traffic light means auto bracket 3 m. SS AMAS3
Car traffic light means pole 3 AMAM3
Traffic light means Leftturn. Clip 3 AMLB3
Traffic light means left 45Gr bracket 3 AMVL3
Traffic light means Rightturn. Clip 3 AMRB3
Traffic light means Rightturn. Pole 3 AMRM3
Traffic safety law free pole 1 AMRF1
Traffic light means 3 foot pole AMFM3
Bus traffic light means - | Bow AMBZ3
Bus traffic light means -. V Bow AMBV3
Bus traffic light means - / Bow AMBR3
Traffic light means straight pole 3 AMGM3

Traffic light means straight bar 3 AMGB3
Traffic light means straight bracket L AMGL3
Sunscreen = SS
Green Arrow green arrow individually
4 meter pole straight M4G
Just 5 meters pole M5G
Pole 8 feet straight M8G
Bent Pole 4 meters short M4BK
4 meter pole Curved means M4BM
Bent Pole 5 meters short M5BK
5 meter pole Curved means M5BM
Bent Pole 5 meters long M5BL
Bent Pole 5 meters long 2 M5B2
Bent Pole 5 meters longer 3 M5B3
Pole 12 meters straight M12G
Busstop normal
Busstop long house
Bus stop post with HVV card1
Bus stop post with HVV map2
Line card 109
Line card 688
Name cards
Lantern normal short arc LNKB
Lantern normal long arc LNLB
Lantern individually for staff pole LSSS
Lantern individually for ZOB LSSS2
Fluorescent single letter Altona LNNA1
Lantern 2xSeil + posts LHD2
Lantern 1x Rope + posts LHD1
+ Post lantern 2xSeil wide LHD2B
Lantern 12xSeilmontage Stephen. LH12
Lantern rope twice without pile LHS2
Lantern rope without a pile LHS1
Lamppost 4m oldschool LMO4
Lantern rope assembly only Pfostn. LHP1
Pole old signs individually strsgnp
Individual signs new pole strsgnpN

V.r. street sign Zebra with light strsgnZRL (attach sheets for)
V.r. street sign Zebra StrsgmZR sheet (attach to pole)
V.l. street sign Zebra StrsgmZL sheet (attach to pole)
Road sign no parking left strsgnNSL
StrsgnNSR road no stop right
Road no stop both strsgnNSB
Road sign no parking left strsgnNPL
Road sign no parking right strsgnNPR
Road sign no parking both strsgnNPB
Road sign prohibiting entrance strsgnDFV
Road sign ban on all Fzg strsgnVAF
Road Sign Bus Lane strsgnBSP
Street sign main road strsgnVFS
Stop road sign strsgnSTP
Street Sign Yield Right strsgnVFA
Road sign arrow straight strsgnpfeilG
Road sign arrow left strsgnpfeilLA
Road sign arrow right strsgnpfeilRA
Road sign arrow right + left strsgnpfeilGLA
Road sign arrow strsgnpfeilGRA just + right
Road sign arrow left + right strsgnpfeilLR
StrsgnAvorfahrt Street Sign Warning of way
Way street road sign left strsgnOWL
Street sign right way street strsgnOWR
Road Sign Warning gauge narrowing strsgnAspur
Street sign 30-zone on both sides strsgn30ZB
Street sign 30-zone beginning strsgn30Z
Street sign 20-zone beginning strsgn20ZA
Street sign 20-zone end strsgn20ZE
Road sign dead end strsgnSCK
Street Sign 5 kmh strsgn5kmh
Street Sign 20 kmh strsgn20kmh
Street Sign 25 kmh strsgn25kmh
Street Sign 30 kmh strsgn30kmh
Street Sign 50 kmh strsgn50kmh
StrsgnPL parking road sign left
Road sign car park right strsgnPR

Additional „on the shoulder" strsgnseitenstr
Additional „bus allowed " strsgnbusfrei
Additional „weekdays 6-22 clock" strsgnwerktags622
Additional „TAXI allowed" strsgnZTF
Additional „tolls. System" strsgngebuehr
small arrow in the lower right strsgnKpfeilR
small arrow in the lower left strsgnKpfeilL
small warning sign just strsgnKachtung
District shield with red bow qsgnRB
District Shield red bow without qsgnRS
Large arrow left „City Nord" strsgnGPL_citynord
Large arrow left „gymnasium" strsgnGPL_sporthalle
Large arrow left „Bergedorf" strsgnGPL_bergedorf
Large arrow left „Wandsbek" strsgnGPL_wandsbek
Large arrow left „Fuhlsbuettel" strsgnGPL_fuhlsbuettel
Large arrow left „Bergedorf" yellow strsgnGPL_bergedorfG
StrsgnGPL_elbbruecken large arrow left „Elbbrucken"
StrsgnGPL_autobahn Big Left Arrow Highway
Large arrow right way strsgnGPR_autobahn
Large arrow right „Eppendorf" strsgnGPR_eppendorf
Big Arrow right „gym" strsgnGPR_sporthalle
Big Arrow right „City Nord" strsgnGPR_citynord
Big Arrow right „Fuhlsbuettel" strsgnGPR_fuhlsbuettel
Large arrow right „Hauptbahnhof" strsgnGPR_hbf
Big Arrow right „Husum" strsgnGPR_husum
Big Arrow right „Bergedorf" strsgnGPR_bergedorf
StrsgnGPR_elbbruecken large arrow right „Elbbrucken"
Panel twice for ZOB AW strsgnT_zob
Table 1 Dammtorstr. away strsgnTdtdaw1
Table 2 Dammtorstr. away strsgnTdtdaw2
Table 1 Dammtorstr. inward strsgnTdtdew1
Table Winterhude market strsgnT_WIM
Table Lombardsbrücke strsgnT_lombardsbruecke
„Parking on the shoulder" for lantern strsgnPSL
Note curve left strsgn_kurveleft
Note curve right strsgn_kurveright
Electric folding plate for MLS EW strsgn_sierich_EW

Electric folding plate for MLS Re strsgn_sierich_AW
Electric folding plate Durchfahrtsv. SierichEW strsgn_sierich_DV
Electric folding plate Durchfahrtsv. SierichAW strsgn_sierich_DV_AW
Electric folding plate for Wallringtnl dead. strsgn_sierich_tot
Large trash can with saying MSRG
road block small individually Apke
Tree protection barrier elements individually ABSE
Guard railings bracket individually medium ABUE
guard rail 1 leg, 1 rod, square ACES
guard rail 2 legs, 1 rod, square ADSE
guard rail 1 leg, two bars, square ASSZ
guard rail 2 legs, 2bars, square ADSZ