Realism- and Gameplay-Related Hardcode Fixes for SH3.EXE

_LSH3-2022___Patch_HSIE-V16B1

for LSH3 Edition 2022

Contents

Additional Information for the Index:
- h.sie-options marked with „(LSH)" are already prepared and activated.
  If other options should be selected then LSH3 2022 HSIE OPTIONS SELECTOR has to be started and then the Mod _LSH3-2022___Patch_HSIE-V16B1 has to be activated via JSGME.
- the options marked with „(NYGM)" and „(GWX)" are just for the Bigmods NYGM und GWX.

I. Introduction

The instant repair times in Silent Hunter 3 bothered me since I bought the game in 2007. They were the main reason for me to start modding SH3 instead of playing it. Fortunately, in August 2010, and after a long search, I found the code in sh3.exe that is responsible for the short repair times, and so I was finally able to inject a simple assembler command (see 1st page) into sh3.exe that caused 60 times longer repair times. An 45 years old man was happy like a child. But instead of starting to play, I became curious, what else could be changed by coding? If one can modify the executable, ALL is possible – in principle. In the last 18 months, „hacking" the sh3.exe became an addicting adventure for me, and I had to take care not to neglect my girl, friends, my job and sports. In the meantime, I have programmed (with the help of the great subsim community!) more than 20 realism-related hardcode fixes – even wolf pack attacks on convoys are possible now! But despite of this progress, 95% of the sh3.exe code is still a mystery for me. But anyhow, I think, time has come to stop hacking, relax and seriously play SH3 for the first time!

In chapter II of this manual you can find a detailed description of the hardcode fixes.

Chapter III provides information how to apply and install the fixes.

You can also find details and discussions about the fixes in the Subsim.com-thread:
http://www.subsim.com/radioroom/showthread.php?t=174225

I want to say "Thank you" to all who helped me somehow, especially to: Stiebler, LGN1, Makman94, Rubini, SquareSteelBar, Hitman, reaper7 and also to all the numerous beta testers!
(Hope, I didn't forget anyone. If so, please let me know!).

Regards
h.sie
February-20-2012

II. Hardcode Fixes Description

Due to the lack of historical data in some points, I'm not sure whether or not my fixes really model realistic behaviour and represent historical facts. So I often had to rely on my assumptions and the discussions in the subsim community, where some fixes have been discussed controversial, without finding a final consensus. But due to Stiebler's great OptionsSelector, everyone can activate/deactivate the fixes according to his personal preference.

The new version V16B also contains a hsie.ini configuration file which allows individual parameter adjustments for some fixes. The file hsie.ini provides information for every adjustable parameter (its function, default value and recommended value range).

1. Realistic Repair Times

Repair times of all U-boat equipment (periscopes, engines, pumps, sonar) take 60 times longer than before. No more instant repairs of about 1-3 minutes after a direct shell hit. A one minute repair in Stock SH3 now takes about one hour instead. The repair time estimations are displayed in 1 hour steps only. The flooding behaviour (flooding-times, recovery) is not changed! So you still have these dramatic minutes fighting against the flooding water. The repair times of the compartments are also not changed, since they are directly linked to the flooding recovery. The factor 60 can be adjusted to a different value in hsie.ini configuration file. This fix is not compatible to NYGM.

2. WO and WP Range Inaccuracy

Inaccurate range estimations for WatchOfficer (→ Nearest visual contact) and Weapons Officer (→ Solution to target). No gods-eye firing-solutions anymore.
- Before this mod: "Range: 8932m, Herr Kaleun".
- Now: "Range: 9000m, Herr Kaleun".

The range estimations now are displayed (and of course internally used for firing solution) in certain range-steps, which become larger (more inaccurate) for larger ranges. In detail:
- Range 0000-1000m: Steps: 50m (Weapon Officer) 100m (Watch Officer)
- Range 1000-2000m: Steps: 100m
- Range 2000-4000m: Steps: 200m
- Range 4000-9000m: Steps: 500m
- Range 9000-12000m: Steps: 1000m
- Range > 12000m: Steps: 2000m

3. Snorkelling-Fix

Speed restriction when snorkelling - wind speed dependent! (Speed restriction starts 20 seconds after beginning of snorkelling - this was necessary to prevent that speed restriction handicaps crash dive).

- Wind speed = 0...5m/s: U-boat speed restricted to "1/3"
- Wind speed = 6...10m/s: U-boat speed restricted to "slow".
- Wind speed = 11...15m/s: U-boat stopped. Snorkelling impossible.

The wind speeds can be adjusted to different values in hsie.ini configuration file.

4. Periscope-Fix

Restricted Periscope usage for higher speeds

- Speed > 4,5 knots: Blur effect simulates vibrations. Periscopes nearly useless.
- Speed > 7,0 knots: Periscopes are moved down automatically.

Both speeds (4,5 and 7,0 knots) can be adjusted to different values in hsie.ini configuration file.

5. Hydrophone-Fix (LSH)

Hydrophones useless when diesels are working:

- When snorkelling, you must stop diesels in order to use hydrophones. Otherwise you'll hear nothing.
- No sound contact reports when diesels are working.

6. External Torpedo Reload Fix

- No reload of external torpedoes possible during bad weather (=storm conditions defined in .cfg file of the U-boat). If bad weather suddenly occurs during external reload, the torpedo will be considered as reloaded if more than 75% of the reloading work is done, otherwise the torpedo will be put back to its initial position, but the reloading process will be automatically restarted when bad weather ends.
- Speed restriction to "slow" during external reload.
- No diving possible during reload of external torpedoes, since all diving commands are simply ignored. If an enemy is sighted, the first pressing of the 'C' key (crash dive) is now interpreted by the game as "ALARM!! Interrupt reloading!!! We must dive!!". After that Alarm, the LI tells the Kaleun, how many minutes it will take to interrupt the reloading process". During this time, the boat still cannot dive. (The time necessary to interrupt the reloading process is randomly chosen between 4 and 13 minutes).

7. Internal Torpedo Reload Fix

No reload of internal torpedoes during storm and when surfaced. During storm, one has to dive below 16m in order to reload internal torpedoes. The minimum depth of 16m can be adjusted to a different value in hsie.ini configuration file.

8. „Crash dive blues" - Bugfix (NYGM)

From now on, you don't lose control over the U-boat anymore if you interrupt a crash dive before the U-boat has reached its designated crash dive depth. Especially NYGM players will benefit from this fix, since in NYGM the Crash dive blues is more noticeable. (Fix by h.sie and Stiebler)
This Fix is not necessary for LSH3 2022.

9. Move 1WO to bridge (LSH)

The lazy Watch Officer now automatically moves to the bridge when surfacing. If there is an Officer in the Bow-Quarters he will move to the bridge. If not, an Officer from the Stern Quarters will be moved up. If the Conning Tower is critically damaged or destroyed, no Officer will be moved up.

10. Fog Warning (LSH)

During high time compression (TC) it can happen that suddenly heavy fog occurs, but the player doesn't even notice it and so he won't be able to act according to that new situation. This fix reduces TC>16 to TC=16 whenever fog occurs or disappears, in order to warn the player. Additionally, the Watch Officer reports "fog sighted" or "fog disappearing", provided the WatchOfficer is on the bridge. Fog warning is only active when the U-boat is not submerged deeper than periscope depth.

11. Oxygen-Supply

So far, SH3 models a 100% renewable oxygen (O_2) supply. That means: After a long period of diving, say 40 hours, it was sufficient to surface and after that, the U-boat was able to dive for 40 hours again and again. Now, with this fix, $O_2$is divided into two parts: A renewable part and a non-renewable part. The renewable part is the O_2in the air of the U-boat. This part is sufficient for a diving period of about 5-7 hours. During this time, the LI informs you about the O_2 content of the air, starting at the normal value 21% and slowly decreasing to the critical value of 17%. At 17%, the LI automatically starts to add $O_2$from the oxygen-supply (contained in pressure bottles). This O_2supply is sufficient for a long diving period of about 30 - 100 hours (depending on U-boat type), but that O_2-supply is non-renewable! That means: It is not filled up when surfacing. Only the O_2 in the air is restored to the normal value of 21% when surfacing. From now on, the Player has to act economically regarding O_2-supply, what adds a new strategic component to the game. The consumption of oxygen depends on the current crew number. The more crew, the more O_2 is consumed. The consumption of O_2will be lowered if the crew is on silent-running routine. The net effect is that the U-boat can stay submerged longer. Repairing, flooding recovery and reloading of torpedoes will boost the O_2consumption. The former CO_2-Gauge now acts as a gauge for the non-renewable, bottled O_2-supply! Since there was some disagreement regarding diving times, Stieblers OptionsSelector contains two Sliders for individual fine-adjusting the diving-times resulting from the renewable and non-renewable O_2 component. Leave them unchanged at their default-values (1,0), if you are satisfied with the diving-times adjusted by LGN1 and me. Choose e.g. a factor of 2,0 in order to double the diving-time. Stiebler recommends values of 2.0 (renewable supply) and 2.5 (non-renewable supply, bottled air). (LGN1: idea and h.sie: programming)

12. U-Tanker Mod (LSH)

Everyone complains that, when you dock at a U-tanker in mid-ocean, you lose all your current renown/tonnage for medal purposes, you get a full refuelling, full repairs, full torpedo load-out and you lose the patrol grid which BdU ordered. And then you start again from the tanker a month after you docked! (unless using SH3Patrol or SH3Commander). No longer! Now you 'pseudo-dock' at the U-tanker. When you are close enough, you press ESCAPE, then 'Exit Patrol', just as if you were planning to dock. However... when you are asked 'Continue mission' or 'Dock at U-463' (for example), you click on 'Continue Mission'!!! *Now* you get 1-4 air torpedoes (loaded only into the first 4 slots of the fore internal reserve - so make sure there is space enough!), you retain the patrol grid details, you receive some repairs to your hull-integrity (but not to equipment) and you receive a fuel upgrade, of up to 30% of the full capacity. Unlike conventional docking at a base, pseudo-docking is only possible if there is no 'heavy fog' and wind speed must be 10 m/s or less. After having (pseudo-)docked at an U-Tanker, you can (pseudo-)dock again after 2 weeks. Also, you can only pseudo-dock at U-tankers, not at surface tankers (e.g. Brake), nor at land bases. You can still choose to dock in the old way, if you wish. If you want this mod to also work with surface tankers, these must be renamed e.g. from "Brake" into "U-Brake" in the campaign files. (Fix by Stiebler and h.sie)
This is already prepared in LSH3 2022.

13. BdU-Messages Mod (LSH)

This is an enhancement of Stieblers BdU-congratulations mod. Instead of the two monotonic standard BdU responses to status reports, there are now 28 different messages the BdU will send, depending on your tonnage sunk, fuel supply and hull damage.

14. Radar Fix (LSH)

Radar automatically switches back to ON, when it has been switched OFF in high waves. Additionally, now the default state is OFF when a game is loaded.

15. WarNews

TC doesn't drop down to 1 when a radio message is received.

16. Wolfpack Mod (LSH)

When you find a convoy, you should inform BdU about details. Thus, roughly estimate the convoy's course and speed and put these two values into the two TDC dials "Bearing" and "Speed" (German: Zielrichtung & Gegnerfahrt). If the convoy is heading north, set course to 0°, if it's heading east, set course to 90° and so on. Then, press 'M' key in order to send the contact report. You'll see these two values for course and speed in the contact report. SH3 no more calculates them for you. It's your job now. After some time, you'll receive a response from BdU. If no other U-boats are available, you'll be ordered to attack alone. If other U-boats are available, BdU will order you to shadow the convoy and send contact reports every hour, if possible. (Note: Time between two reports isn't allowed to be lower than 55 minutes).

Your speed and course estimations are necessary to lead the wolfpack into the operation area to intercept the convoy. The time between your first contact report and the wolfpack attack depends on the initial distance between the U-boats and the convoy. During shadowing, you'll get some orders from BdU.

Follow these instructions. But sometimes BdU messages get lost or come too late - chaos, as in real life. If the wolfpack reaches the operation area, BdU will wait for good attack conditions (dark and no fog) and then order to attack.

Then, sometime later, the convoy battle (hopefully) begins. But it is possible, that the order to attack does not come in time or even gets lost. Bad luck, as in real life. The time period influences the availability of wolfpacks: In 1939, no wolfpack U-boats are available. In 1942 the chance is very high that a wolfpack is available to assist you. From 1943 on, the chance strongly rises, that hunter-killer groups sink/damage the wolfpack U-boats, so that they don't reach their operation area. Then, BdU orders to attack alone. Your position also influences the availability: Wolfpacks are available in the north- and south Atlantic, but not near land. It is important to send contact reports on a regular basis - every hour, if possible, in order to lead the wolfpack to the convoy using the shortest route. Otherwise the chance rises, that the wolfpack isn't able to reach the interception point in time. Then you have to attack alone. Weather also has an impact: The higher the wind speed, the higher the chance that the wolfpack U-boats get fuel problems or similar and don't reach the operation area in time.

Options:
If you choose "Wolfpack less contact reports" option in the OptionsSelector (in addition to the activated Wolfpack-Mod), the time between the first contact report and the wolfpack attack is reduced about 50%.

Rules for Savegames/Reloads:
- After loading a mission, the game must run 3 minutes, before you may send a contact report.
- After sending a contact report, wait at least 3 minutes and then save the game.

Credits:
LGN1: Without his brilliant idea wolf packs wouldn't be possible.
Stiebler: Manifold support, marathon-testing.   Sergbuto: Permission to modify his AI-Subs
FaderBerg: For information how to store data into a savegame   SquareSteelBar: Optimization of AI-Sub.

17. Battery Discharge Bugfix

Due to a bug in SH3, there always remained a little charge in the batteries that never was drained. Thus, after the LI reported that the batteries are emptied, you could continue to travel underwater endlessly at very slow speed. This fix now removes this little charge, so that the batteries are completely emptied and the U-boat stops. The underwater range of the U-boat now is in accordance with the setting in the .sim file, provided you set a speed of 4 knots.

18. Torpedo Failure Fix

This Fix tries to model the torpedo crisis until 1942 and also tries to model duds resulting from too shallow torpedo depth settings. Fig. 1 below illustrates the function of the Torpedo Failure Fix. The depth D1 is equal to the wind speed-dependent wave amplitude. Torpedoes above D1 are surface runners and lead to a failure probability of p = 98% (see red line in Figure 1). Depth D1 can be calculated as follows:
D1 = 0.25 · Wind speed = Wind speed / 4.
The depth D2 can be calculated:
D2 = 0.4 · Wind speed = 4 · Wind speed / 10.

Water below depth = D2 is assumed to be calm. Torpedoes below D2 will have a low failure probability of p = po. The value of po depends on the time (torpedo crisis until 1942) and the pistol chosen (magnetic/impact). Details see below. The area between the depths D1 and D2 is the area of turbulences. Here, the failure probability sinks linear with rising depth from p=98% at depth = D1 to the small value of p=po at depth = D2.
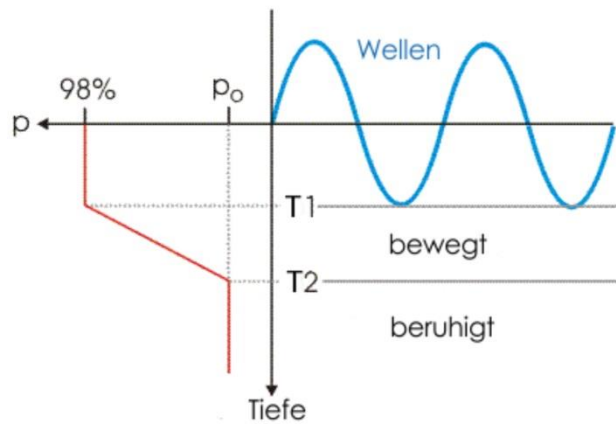

Fig. 1: Dependency of torpedo failure rate p (red) on torpedo depth setting.

Failure rate po for Impact pistol:
- until June'40: 25%
- until June'42: 10%
- after June'42: 3%

Failure rate po for Magnetic pistol:
- until June'40: 15%
- until June'42: 10%
- after June'42: 2%

These 6 failure rates above can be adjusted in the hsie.ini configuration file.

The torpedo failures caused by this fix are ADDED to the already existing failures, resulting from bad impact angle etc. The fix models a failure by simply setting the torpedo depth to 25m.

19. Night Vision Fix (GWX)

This fix addresses the so-called „Vampire Night Vision Bug": In a clear but dark night, your U-boat watch crew can see a ship in 15km distance, while an enemy warship watch crew can only see your U-boat in 300m distance (at least in GWX). This hardcode fix eliminates this problem. Not only the watch crew has lowered visible range, also the player on his monitor, since the mod changes the rendering of the objects at night using a simple environmental hack: A fog-curtain is moved, depending on the sun position. At daylight, the fog curtain is not changed, but as soon as the sun hides behind the horizon, the fog-curtain is continuously moved closer to the U-boat. So the balance between the players eyes and the watch crews eyes is widely kept.

Per default, the fix reduces visibility at dark night about 50% (factor 0.5), but this factor can be adjusted in the hsie.ini file. Set the value e.g. to 0.75 in order to have a 25% reduction of visibility at night.

Recommended Crew Sensor Settings in data/cfg/Sensors.cfg (tentative values):
- Visual range factor = 0.5

- Visual fog factor = 1.02 (see below!)
- Visual light factor = 0.8

The „best" Visual fog factor depends on the chosen environment and your monitor settings and must be individually fine-adjusted between approx. 1.00 and 1.05. If your crew detects a ship at night, before you can see it through the binocular on your monitor, the Visual fog factor must be slightly enlarged and vice versa. (Fix by Makman94, Rubini, h.sie)

20. Bad Weather Fix (LSH)

Some people reported a serious bug in SH3: The weather sometimes sticks at high wind speeds with 15m/s, fog and no visibility. This bug no more exists. What does this Fix do? Almost nothing. It does not change the sh3 weather algorithm at all and will only be active, when storm- or fog periods are too long. It consists of two independent counters:
- a STORM_COUNTER that counts the number of weather periods with 15m/s wind speed, and
- a FOG_COUNTER that counts the number of weather periods with fog.

If STORM_COUNTER reaches a certain maximum value (see below), the fix forces a reduction of the wind speed. If FOG_COUNTER reaches a certain maximum value (see below), the fix reduces clouds and thus also fog.

Maximum values for the COUNTERS
- The maximum value for STORM_COUNTER is 5 weather periods.
- The maximum value for FOG_COUNTER is 3 weather periods.

The maximum values for both counters (default: 5 and 3) can be adjusted in the hsie.ini file. So if you want better weather with less storm and fog, reduce these values to 4 and 2 (or even 3 and 1).

I also programmed a little chance that this weather-controlling mechanism described above is bypassed in order to keep some uncertainty, so that a little chance remains for storm- and fog periods longer than the maximum values.

This Fix also fixes a bug, that the weather time counter is not saved in a save game, so that the counter always starts at 0 every time you load a mission or save game. That means, that the first weather change always occurs exactly after a full weather period (20 - 40 hours). Now, the time counter is initialized with a random-value between 0 and 95% of the weather period, so that a weather change shortly after loading a mission is possible.

Compatibility Multiplayer: Not tested yet, but I don't think it works for Multiplayer mode.

21. Diesel Damages Fix

With this Fix you risk random diesel damages if you agonize your diesels with maximum speed. The maximum possible machine telegraph value of 1.0 (see U-boats.cfg file for details) will now be interpreted as OVERLOAD of the diesels in order to get maximum speed out of them. If you order to overload your diesels, the LI will acknowledge "Alles was drin ist...." or "everything we've got!"

Used Shortcuts and colours
- MTS: Machine Telegraph speed. 0.0=stop and 1.0=max. See U-boats .cfg file.
- T50: Timespan that corresponds with a damage probability of 50%
- RED: Non-safe operation of diesels. High risk of damage.
- YELLOW: Halfway safe operation of diesels. Low risk of damage.
- GREEN: Safe operation. No risk of damage.

a) Normal conditions (no diesel damaged):
- MTS = 1.0: T50 = 1 hour (OVERLOAD)
- MTS ≤ 0.97: Safe. No damage will occur.

If a random damage occurs, this should be interpreted as a warning. Thus, the LI warns you to reduce your speed, because otherwise you risk a total loss of the diesel. As long as the diesel isn't completely repaired, the chance of successive damages dramatically rises, if you don't reduce your speed to safe values (see below). Under normal conditions (no diesel damaged so far), the amount of the applied damage is randomly chosen between 1% and 60% (thus, an undamaged diesel will never be destroyed).

b) One damaged diesel:
- MTS = 1.00: T50 = 15 min. (OVERLOAD)
- MTS = 0.95: T50 = 40 min.
- MTS = 0.90: T50 = 2 hours
- MTS = 0.80: T50 = 20 hours
- MTS ≤ 0.70: safe

c) Two damaged diesels:
- MTS = 1.00: T50 = 4 min. (OVERLOAD)
- MTS = 0.90: T50 = 10 min.
- MTS = 0.80: T50 = 30 min.
- MTS = 0.70: T50 = 2 hours
- MTS = 0.60: T50 = 10 hours
- MTS = 0.50: T50 = 60 hours
- MTS ≤ 0.40: safe

Under damaged diesel conditions b) or c), the amount of the added damage is randomly chosen between 30% and 100%, thus a damaged diesel can completely be destroyed. If you want to use your FLANK slot on the machine telegraph for overload (as I will do), just use normal values of your supermod, no changes are necessary:
- FLANK = 1.0
- FULL = 0.95
- STD = 0.8

If you DON'T want to use your FLANK slot on the machine telegraph for overload, you can use the following values:
- FLANK = 0.95
- FULL = 0.90
- STD = 0.8

and activate diesel overload by setting speed to maximum on the knots dial.

22. Ship Collision Damage Fix

Until now, one could sometimes sink an escort by ramming it. With this Fix, collisions with surface ships now result in a more severe damage of the pressure hull (diving deep won't be possible after that) or even a total loss of the U-boat. The Fix of course considers physical parameters like the mass, speed, armour level and impact angle of the colliding objects.

Only SurfaceShip ↔ PlayerU-boat-Collisions are affected. All other collisions (with shells, land, other objects and not related to the player U-boat) are not affected.
This Fix multiplies the amount of Hit points (that are subtracted from the U-boats damage model when a collision occurs) with a factor of 8.0. This factor can be changed in the hsie.ini file. Set it to 1.0 if you want to disable this Fix.

23. Torpedo Pistol Switch Bugfix

This is a Bugfix for the TDC dial: When you choose salvo, select multiple torpedoes and then change the pistol type, only the pistol of the 1st torpedo is changed, all others remained unchanged! Now, with this Fix, all torpedo pistols are changed! Thanks to reaper7 for some helpful information.

4GB-Patch (author unknown)

If the 4GB-Patch is activated in the OptionsSelector, then your saved file of SH3.exe will be adjusted to allow better memory usage of up to 4 GBytes of RAM. You must have a 64-bit computer, with a Windows (TM) 64-bit operating system; for example XP (very rare with 64-bits), Vista or Windows 7. Ticking this option serves no purpose, and may actually cause crashes, under these circumstances:
   • Your computer holds 1 or fewer GByte of memory.
   • Your computer is not a 64-bit computer.

Additional Fixes by Stiebler

Stiebler has also programmed some nice hardcode Fixes for SH3, e.g.
   • Grid Change Mod
   • Surrender Mod
   • CAM-ship Mod
   • 'Smoke-on-horizon' Mod
   • Silent-Running Mod
   • Asdic in shallow-waters Fix.
These are not contained in „my" Patch-Kit, but Stiebler will surely provide his fixes in the near future, either as an Addon or as an discrete Patch-Kit.

III. Installation

Due to copyright issues and in order to prevent illegal software duplication, I cannot share the patched sh3.exe - I can only offer a Patch-Kit for you to patch the executable by yourself. This makes sure that only a legal owner of the software can use these fixes.

The installation process unfortunately requires some basic computer knowledge like copying, moving and editing files, and it also requires knowledge about the JSGME Mod enabler, its working principles and how to use that tool. If you are not sure whether you fulfil these requirements, you better ask a friend to help you. Don't hold me responsible for a corrupted sh3 installation!!

The steps 1 through 4 of h.sie-Installation are already done during the installation of LSH3 2022.
Additionally a Mod in JSGME is prepared _LSH3-2022___Patch_HSIE-V16B1 with the appropriate files.

The install process consists of the following steps, when the h.sie-Patch should be used without LSH3 2022:

1) Patching sh3.exe
Already integrated into LSH3 2022
   a. Create an empty working directory somewhere on your hard disk (where you have write permission.)
   b. Download the latest V16_Patch-Kit archive and extract all contained files into that working directory.
   c. Copy your original (unpatched) sh3.exe into that working directory. Now, your sh3.exe and the patcher named Patch_SH3.batMUST be located in the same folder!
   d. Start Patch_SH3.bat. If your sh3.exe is compatible, it will be patched. Otherwise not. Before patching, the patcher automatically makes a backup of your original file called sh3.old. Save sh3.old somewhere for later use, e.g. in case you want to undo the patches.
   e. If step d) was successful, your new sh3.exe contains ALL of the fixes!
   f. Start HsieOptionsSelector.exein order to individually enable/disable the fixes as you like. This tool also allows to apply the 4GB-Patch.

2) Preparing the Supplement-Mod
Already integrated into LSH3 2022
Note: The Supplement-Mod is essential, not optional !!!
   a. Extract the Supplement to V16 Mod archive
   b. Put the patched sh3.exe into that mod (into the same folder where the 4 DLLs are located).

3) Individualizing the Supplement Mod

Already integrated into LSH3 2022

Note for NYGM- and CCoM-Players: The following steps 3.1) and 3.2) are NOT required for players of NYGM and CCoM, since these Supermods already have included the necessary changes. Please continue with step 4). Thanks, Stiebler and rowi58!

For players of other Supermods: Unfortunately, the hardcode fixes require changes in some configuration files of your sh3-installation. Instead of creating hundreds of compatibility patches for all available individual versions and combinations of them, I describe how to manually individualize the Supplement-Mod. The advantage of this procedure: All changes are made only in the Supplement-Mod, but not in your SH3-installation. Thus, if something went wrong, simply disabling the Mod will put back your sh3 in its original state.

4) Activate the Supplement Mod

a. Copy your individualized Supplement-Mod into the MODS folder of your sh3-installation
b. Activate it using JSGME as the last one - after all other Mods. File conflicts regarding files de_menu.txt, en_menu.txt and Campaign_SCR.mis can be ignored.

5) Test of the installation (optional)

5.1) Test the patched sh3.exe

Activate the Supplement Mod with JSGME and start sh3. If you see the new version (e.g. "v 1.6B1") instead of the old ("v 1.4") in the right bottom corner of the games main menu, patching succeeded 100%.

5.2) Test the new messages

Assumption: Oxygen Supply Fix is activated. Dive to 20 meters, set time compression to a high value and wait until you see the LI reporting "LI: Oxygen: 20 Percent" on the game message console. If so, all went fine (very likely). If you see empty messages instead "LI:", then something went wrong with the inclusion of the new messages into your individualized Supplement-Mod. Reread chapter 3.1.

5.3) Test the AI-U-boats installation

Do the following procedure:
a. Load Single-Mission "Wolf pack".
b. Set time compression to a high value and wait until you see a convoy.
c. Send a contact report, keep the distance to the convoy and wait for the reply of the BdU.
d. If you are ordered to attack alone, try again: Load Single-Mission "Wolf pack" and so on ... (see above)

A BdU-order to shadow the convoy shows, that the AI-U-boats are installed correctly. If, even after 5 or 6 attempts, you always received the order to attack alone, the installation of the AI-U-boats went wrong very likely. Reread chapter 3.2).

6) Optional Mods

For the Oxygen-Supply Fix, there's an optional Mod "Optional O2-Gauges" available, which changes the graphics design of the former CO2 gauge into an O2-gauge. Thanks to SquareSteelBar.

7) Important Notes

- This patcher will completely remove the copy protection of your sh3.exe. So if your sh3.exe is copy-protected, you MUST NOT use this patcher!!
- This patch adds code to sh3.exe. Some Antivirus-Programs maybe don't like this.
- USE ON YOUR OWN RISK!

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