

NOTICEBOARD – JANUARY 2003

The first issue of Waypoint was an overwhelming success. The HarpoonHQ site server nearly collapsed from the load placed on it – it is quite illustrative that over 700 downloads were performed within 36 hours after the issue was published! We would like to thank everyone who contacted us to provide feedback, to share their opinion on the issue and encourage us to proceed. This sort of welcome reinforces our belief for the need of such a magazine in the computer Harpoon community and further solidifies our commitment in providing the best news & content to our readers.

We received a couple of notifications on certain problems with the first issue. One was that the hyperlinks were not working correctly, so in cases where the full URL was not visible the readers could not follow the hyperlink if they wished to. This was verified and confirmed. As of this issue, all hyperlinks are printed in their full URL form so that such problems can be avoided.

There was an interesting exchange of information recently on the Yahoo H3 group, regarding the operational status of the Harpoon Blk. II missile. Mo first posted the following:

My question is regarding the removal of Harpoon Blk II in the latest [DB-2000 version]. Yes, as of right now (and even I am not really sure of this) I don't think there is a Blk II in the fleet. But it will happen very shortly.

Right now if you are sending your Blk 1C for maintenance [to Boeing], you should receive a Blk 1G (re-attack capability) because they will not make the 1C anymore. That is exactly what will happen with the 1G for the Block II very shortly. The Danish bought the full system and we Canadians bought the AHWCS (Advanced Harpoon Weapon Control System) that will make us able to use to it's full capability the 1C and 1G.

We will probably receive the Blk II shortly (we just need a very [small] modification, it seems, by Boeing).

So yes, the Blk II is on its way and Harpoon is still well alive. I got a presentation on this lately and the Block II will have tremendous new improvements (littoral, [capable] against jammers, land suppression....). I should be the first one to launch a Harpoon with this new AHWCS (integrated) next year!!

Ragnar Emsoy responded:

I've been searching the web for info on Harpoon Blk II, and the articles I've found say that the Harpoon II missile will not be purchased by the USN and will only be available for export. No money have been put aside in the US defence budgets for it. IIRC, Denmark, Egypt, Israel and S Korea have bought the missile so far, and possibly also Taiwan. The US will participate actively in the development effort as a means to bridge the gap between the current ICR (aka IG) and the Harpoon follow-on missile in 2010-2015 (that is, if there will be any such thing as a direct Harpoon follow-on weapon...).

Larry Bond has provided some clarification/explanation on the -10% DP modifier for ships of Soviet/WP construction standards. (This modifier is also being used on the computer versions)

[The reason for the modifier] isn't that they're Communist. Russian design philosophy makes damage control more difficult. Russians don't try to maintain their vessels at sea.

Equipment is packed in tightly, which saves space and reduces displacement, but also means you can't fix it underway. That, in addition to the shoddy workmanship, is what earns Russian surface ships a -10% dp modifier. Note that the subs don't get it, because sub builders put more effort into quality control. Countries that follow Soviet/Russian design philosophy, like Yugoslavia, will also have the -10% penalty.

I would not put East-German designs on that list [of countries that have the modifier], because their stuff is of higher quality. Poland as well. Of course, a ship built to Russian design in an East German yard will still have the modifier.

So the list would be: Russian surface ship designs wherever built, and all warships designed by the following countries: Albania, Bulgaria, India, PRC, Romania, Yugoslavia.

Ragnar Emsoy recently posted on the Yahoo H3 group an interesting alternative view on Cold War Soviet naval tactics & doctrine, based on his recent research on the subject:

Tom Clancy and most other [authors] were often wrong in their assessments of the Cold War, and the battles described in their books would never have taken place in real life mainly due to USN and Soviet doctrines and tactics. For example, 'The Battle for the North Atlantic' would not have taken place in the North Atlantic but rather in the Norwegian Sea (as per Reagan's 1980s Maritime Strategy). The US would be sending the 2nd Strike Fleet up to try to neutralize Soviet air power and submarine bases on the Kola Peninsula (and/or captured bases in Norway), and the Soviets would be using their bombers and submarines to try to destroy the US carriers. The winner of this battle would be the one controlling the Atlantic Ocean, and thus, the winner of the war in central Europe.

We've been doing some major in-depth research on Soviet naval tactics (I can strongly recommend obtaining a copy of Milan Vego's book "Soviet Naval Tactics") while building the WW3-in-1985 scenarios [for Harpoon 3], and all of our sources (not including Tom Clancy and a few others, of course) say that the Soviets would not have sent Backfires into the Atlantic, but instead used them as in-theatre bombers against NATO carrier battle groups in the Northern Sea threatening the homeland, and against reinforcements and amphibious groups headed for Norway.

He also provided some insight into the effort that goes into scripting a good enemy AI for a scenario – in this case, his latest grand creation, "Clash of the Titans":

I used two very different methods to set up the Backfire and the Badger attacks. The methods only work in one-sided scenarios, and if you want a similar scenario to be playable from both sides you'll need to create two separate copies of the scen; one for each side.

For the Backfires I added them to a 'remote' air base, assigned them to a 24h DELAYED strike mission and manually ordered them to take off. The airbase is the place they'll return to after firing their missiles, so you might want to use an invisible 'remote' air base if you want the egress route to be in a certain direction. Also remember to set 'AUTO DETECT' to off, to prevent the player from detecting the base. I then started the game, and once all the Backfires were airborne I grouped them and moved them to the rear areas where the player could not detect them (protected by a threat zone) and plotted the courses. I then programmed the waypoints and set altitude, speed and EMCON state, and tested it repeatedly (again and again and again and...) until the Backfires behaved the way I wanted them too. Fine-tuning the attack and coordinating it with the SS-N-12 strike truly took a LOT of time :)

At this stage the scenario was getting pretty large, so I decided to start with the 80 Tu-16s on the ground. I then tested the scen to find the optimum take-off time, and manually programmed the escorting MiG-23s and MiG-25s. All of the fighters are airborne at game start and are set up the same way as the Backfires above.

It is extremely important that all the targeted units are destroyed by the raid, or else the AI-controlled bombers will take off and attack the targets again. A second wave would not have been launched in real-life, so the AI must be prevented from doing just that in the simulator. So I set up the Backfires and Badgers to go after only a handful of targets and made sure there is a 99% chance these would be destroyed. To cover the last 1% I also added the invisible 'Nothing' aircraft carrying big bombs that would finish off any survivors. Some of the Nothings carried USET-80s to make it look like the ships were sunk by SSNs. Since the Backfires are using a separate 'remote' airfield I also set up an aircraft threat zone around the base. The threat zone will not affect aircraft returning to base, but will prevent the Backfires from going anywhere if all of the above methods have failed and the AI still decides to launch.

Anyway, the big secret behind successfully carrying out such a strike is really to keep the fighters busy, but at the same time sticking to real-life tactics. I first sent in recon aircraft, then the high-speed MiG-25 fighters (to also kill a couple E-2s), then more recon aircraft escorted by MiG-23s, more MiG-23 escorts, a wave of SS-N-12s, and Tu-16 jammers. Lastly, I sent in the [Backfire and Badger] bombers.

The January 2003 issue of the Journal of Electronic Defence treads into the waters of next-generation warship design for the European naval forces. Both technological and operational concerns are analysed in detail, along with a brief status report on the major development programs currently underway. Some other quality picks from this month's issue include:

- Soviet/Russian SEAD doctrine, tactics and equipment – an often-overlooked segment of Russian air power analysed and examined.
- The integration of UAVs with manned assets in future air operations.
- Precision emitter location using the Frequency difference of arrival (FDOA) technique
- Plus a wide variety of news and reports on military & technological subjects from around the globe.



An key resource for the serious Harpoon user, JED can be accessed online at the following address: www.jedonline.com. The browsing of both current and past issues requires a free registration.

A new major release of the DB2000 is out, v6.3. Here are the release notes by Ragnar Emsøy:

There are quite a few new features in this version of the database.

The most important update is the complete redesign of all fire-control systems using datalinked missiles. This includes AEGIS, Patriot, NASAMS, SA-10, SA-12, SA-N-6 and quite a few others. Earlier in Harpoon2/3, these systems were only limited by the number of 'channels-of-fire' available. So if a certain system could handle up to 16 missiles in flight in real life, the player and AI could easily cheat by shooting two missiles at each target and putting 32 missiles in the air at once. In the DB2K v6.3, these systems are now limited by BOTH their radar AND the number of datalinks available. So if your system allows you to put 16 missiles in the air, you can choose between shooting one missile each at 16 targets, or two missiles each at eight targets, etc. Visual command-guided weapons have also been corrected, and are now limited to firing only one or two missiles per launcher, depending on type. Semi-active radar homing missiles will work as they did before, ditto for fire-and-forget missiles.

The datalink channels available to the various systems in the DB2K are as follows:

- AEGIS SPY-1A/B/AB: 24 (declassified number often set to 18. But most sources say 12 targets can be engaged simultaneously, and since the USN always shoot two missiles at each target, the number of datalinks has to be 24.)
- AEGIS SPY-1D: 18 (guesstimated)
- AEGIS SPY-1F: 8
- NTU ships: 4-8 depending on class
- APAR & Sampson MFR: 16
- Patriot battery: 16
- NASAMS platoon: 8
- SA-10 battery: 6
- Arrow battery: 12
- Polyphem battery: 4 (one per launcher)
- Sky Bow II/IIA: 8
- THAAD: 16
- ++ many more

Other systems:

- SA-5: 2 per guidance radar
- SA-19: 2 per launcher
- SA-12: 2 per launcher
- Rapier: 2 per launcher
- Chaparral: 2 per launcher
- Crotale: 2 per launcher
- ADATS: 2 per launcher
- Bamse: 2 per launcher

- Barak: 2 per launcher
- Roland: 2 per launcher
- TOW: one per aircraft
- HOT 1/2/3: one per aircraft
- AS-11/12: one per aircraft
- All Russian ATGMs: one per aircraft
- Nike Hercules: one missile per missile tracking radar
- ++ many more

Next, we've fixed the problem with certain air-to-air missiles like AIM-54, AIM-120, Patriot PAC-3 and AA-12 Adder sometimes going after the wrong aircraft or missiles, and then leaving a permanent 'target designated' flag on the intended target. Complex long-range aerial engagements will now work according to "the book".

We've also added proper acoustic decoys and submarine simulators to all US, British and Russian submarines.

Database additions include:

- MOSS submarine simulator on all US SSBNs in the 1980s
- MG-74 submarine simulator on all Russian subs from Victor II onwards
- CSA Mk1 on all US subs
- CSA Mk2 Mod 0/1 on later Ohio, I688 and Virginia subs
- CSA Mk3 on Seawolf
- TAU 2000 acoustic decoys/jammers on German Type 212 subs

Other database additions:

- MQ-1B Armed Predator, the type used in Afghanistan and Yemen, armed with 2x AGM-114K.
- Many types of SpecOps helos, incl AH-6C/F/G/J/M Little Bird, MH-6B/E/H/J/M Little Bird, MH-60A/K/L, MH-47D/E.

Database updates and bugfixes:

- A bug that prevented the Tactical Tomahawk from launching in some situations has been fixed.
- 65-76 was retired in 2002, and Russian 1990s subs are now armed with this torpedo.
- ERGM speed has been reduced, it now needs almost four minutes to reach 40nm, as in real life.
- All USN pre-AEGIS cruisers updated, verified and corrected.
- Barak bug fixed, the missile will now launch as intended.
- AH-1W have received AGM-114K from 1995 onwards instead of AGM-114B
- JAS 39A/C Gripen loadouts updated
- Corrected Collins SSK sonar systems
- B-1B FLIR removed

Larry Bond, the creator of the original Harpoon wargaming rules, has teamed-up with several members of the HarpoonHQ crew in a major endeavour to consolidate database research for all current and future versions of Harpoon, both for computers and table/miniatures. The ad-hoc group responsible for this undertaking is known as the Harpoon Database Group (HDG) and the first results have been extremely promising. The HDG is continuously improving the datasets for all versions of Harpoon 24 hours a day (*this is not an exaggeration: the different worldwide locations of HDG members are actually a benefit in this case, allowing a rotational shift of work and seamless exchange of information*). The work of the HDG is expected to benefit both current and future releases, including the much-awaited computer-Harpoon 4.

An interesting article on satellite-guided munitions, written by Michael Putre of JED fame, is featured on this month's Scientific American. You can read it here:

<http://www.sciam.com/article.cfm?collID=1&articleID=00077F6F-F037-1E19-8B3B809EC588EEDF> (registration is required).

Some news and tidbits, courtesy of the HDG:

- France has decided to go with the MM.40 Block III. This has a jet instead of rocket motor, range increases to 97.2 nm with the seeker from the Block II. It probably has a number of programmable waypoints and will be fitted with GPS for land attack. Service entry is planned from 2006; the Block III fits the Block II tubes.
- The Russians have released information on two previously unknown AA-10 Alamo AAM versions, both with PRH guidance. The standard range R-27P [Alamo E], and extended range R-27EP [Alamo F]. Neither has been exported.

- The Sapson targeting pod is expected to enter service with the Russian Air Force in 2004 or 2005, it has a 2nd Gen FLIR and laser designator. The rotating head has full 270 degree arc visibility, weight is 250 kg.
 - The TACTOM (Tactical Tomahawk) is due to enter service in 2004. Guidance is I/M/GPS, range increases to 1512 nm, the warhead is a 318 kg (44 DP) penetrating type. The midcourse allows retargeting, and the missile can loiter awaiting a mission. It will be available as a torpedo tube-launched version, as the RN does not have VLS fitted to any of its submarines.
 - The Standard Block IV (RIM-156A) entered service in August 1999, the Block IVA (designation RIM-156B) was cancelled in December 2001. SM-3 is still planned to enter service for ATBM, designated RIM-161A.
 - The UGM-84 sub-launched Harpoon was removed from the USN inventory during 1996/97, to save the costs of upgrading them to the ICR/IG version.
 - The heavy 650mm torpedo 65-76 was retired from Russian submarines by February 2002, after the Kursk accident investigation showed that the explosion of such a torpedo was the likely cause of the loss of the submarine. This has left the conventional-tipped SS-N-16 variant as the only 650mm weapon in use by Russian boats with such tubes. Most 533mm weapons however can still be used from those tubes, by using appropriate adaptor liners.
 - The Sniper XR targeting pod has been selected by the USAF for its strike-fighter fleet. This has a 4th Gen FLIR, TCS and laser designator. It was planned to enter service in 2002. The export version, Pantera, and has been ordered by Norway for the F-16 MLU.
-

A slightly improved version (v2.1) of Paolo Moneta's H3Launcher utility is available for download at the Utilities section of the HarpoonHQ site (www.harpoonhq.com/utilities/).

The new version fixes some bugs and updates the documentation for the program.

As this issue was going to press, we were informed by Craig Paffhausen that he is preparing two biggie articles for next month's issue. The first will revolve around Tupolev's modern supersonic bombers and the second will deal with the family of missiles classified by NATO as "AS-4 Kitchen", a family that spawned a much more varied and numerous range of weapons that NATO realised throughout the Cold War. If Craig's past research endeavors are anything to go by, these articles are going to be extensive in every sense of the word. We'll be waiting with anticipation for his work.

STOP THE PRESSES!!! We actually had to delay the publication of this issue for the sake of including the following news, but we think you'll agree it's worth it. Jesse Spears (developer of Harpoon 3) has posted the following, on the upcoming v.3.5.9 version and on the long-term future of H3:

I'm currently looking at the [custom] AC Ready-Times. I hope to put it in the next update [v.3.5.9]

Regarding the other bugs: The refuelling/rearming/reloading problems are very tricky, and I may not be able to fix them. I hope I can, but after wasting a lot of time on them in the past, I'm not sure they are something I can fix, because I don't really know how they are supposed to work in the first place.

This may be something that just has to wait until I can release the code to the general public and allow people to build their own DLL's. I'm not sure I've talked about that in public before, so a brief description. I intend to build (and maintain) two versions of the game:

1. One will work just like the current version (1 Application, with OpenPlay DLLs for Mac and Windows, and the Allegro DLL for windows).

2. The other will be composed of 1 main Application, and a separate DLL for the most of the code (or possibly a bunch of DLLs for the various parts of the code: Arena, Navigator, Map, Math, etc.). The OpenPlay DLLs and the allegro DLL will also still be required. I will make most of the code available for anyone to download and work on (i.e., essentially Open Source), and as long as you have a way to build DLLs that work with your System, you can edit the code however you want and make whatever modifications you want.

The advantage of #2 is the same for any Open Source project: Lots of eyes looking at the code and lots of brains thinking about the code will find more problems than just one set.

WAYPOINT

I'll integrate bug fixes and significant changes back into the main source tree from time to time, but for the most part, I'll stay away from the Open Source project.

You'll still need to buy a copy of the game to work on the Open Source project, since I'll be the only one building the "Main" Application (everyone else will just build DLL's), but if you have Modifications you think need to be in the game, you can work on them (and share them with everyone else, or not if you don't want to). I will ask that all bug fixes be rolled back into the Open Source project (or at least given to me so I can roll them into the main source tree).

This is something that I've been considering for a while, mainly because of the involvement of the Australian Military (they may be funding this project, or maybe not, or perhaps just partially funding it).

In any case, I intend to move forward with this over the next few months, as time permits (I've got at least two other upcoming mods for the Aussies in the works, but this might be snuck in between the two).

We will certainly deal with these groundbreaking developments in greater detail in the forthcoming issues of Waypoint. Until then, stay tuned!

This article first appeared on the 2nd issue of the Waypoint magazine, January 2003. All original author rights reserved. No replication of any part of this article is allowed without the author's explicit consent.