

Q & A – January 2003

G'day Guys

Firstly I must congratulate Jessie and the team on a huge effort and great work on getting H3 to the state it is in. Extremely well done.

As a long time miniature's Harpoon gamer/gamemaster I have long modified myself many of the values used for SAMs and also air to air missile's.

Why you may ask? Well from where I am sitting the sim has always had an enormous problem with aircraft attrition being to high due to the high PKs of both SAMs and air to air missiles.

Given the relatively high values of some weapons, aircraft are being shot down in droves with often very little in return as the survivors dive for shelter from a hail of lethal missiles.

To give you some examples.

First:

SA-2B Guidline. A missile which has a PK of some 15% in Harpoon 3 had an effective kill rate of 1 kill for every 150 missile fired during the Vietnam war.

Early AIM-9 and AIM-7 which in the sim have PKs of around the 60% mark. In actual employment in Vietnam the missiles had an effectiveness of 15% and 8% respectively.

Now from my position these early missiles are WAY WAY WAY overrated and hence causes a flow on effect which means we are now facing modern missiles which can cause losses far greater than in reality.

Take a look at the AIM-9L in the Falklands conflict. Of 26 missiles fired 18 scored hits and the destruction of aircraft. That works out to be 75% kill rate. Well, considering the Argies did not employ countermeasures (flares) and where in the absolute best heatseeking environment imaginable. With a beautiful cold water background they should have performed this well if not better given the conditions. Yet in the sim it has a base kill rate of 85% as compared to 75% in reality. Ouch!

Given that on many occasions the missiles will be fired at far more agile aircraft with relatively effective countermeasures and in most cases a far less missile friendly environment, I can't see how we can arrive at a PK of 80+%.

Given that in particular with radar guided missiles and IR missile terrain masking is used extensively and trained for by both navies and air forces around the world aircraft are being underrated in their survivability in the sim vs ALL missiles.

Even just using terrain masking comes at a risk of crashing which again has a PK in excess of actual aircraft losses in combat situations.

Where am I going with this?

Well as far as I can see from where I sit, the missile kill values need a major re-evaluation in terms of their anti-air effectiveness.

Considering most targets will be at extreme low-level, dodging between trees and on most occasions will not be visible till the last seconds before an attack, the window we now have is far too large for the launch of multiple missiles which would not occur in the real life.

The amount of mission planning to minimize exposure to SAMs and approach routes can't really be simulated so at the moment a/c losses can be staggering and far to great to say the least.

I am looking for other people's comments on this subject, what you think and do you think if something needs looking at.

In a great sim this is in my opinion of 15 years of Harpoon gaming the only hole.
What do you think?

Darren Howie

Dimitris Dranidis answers:

Hi Darren,

First of all, I would recommend that you try a Harpoon 3 scenario with the After-Action Log enabled and afterwards open the log file and read some of the missile engagement calculations. They are quite revealing at what is going on during the engagement endgame and what factors affect the final probability of kill.

When we assign a certain Pk to an anti-air weapon, we do so only after very careful consideration of what its **final** Pk is going to be against various typical aircraft types (small fighters, large fighters, strikers, bombers, transports & misc. etc.) - in other words, how well it is going to fare against each target after all the endgame factors have been taken in: weapon's initial Pk, target's maneuverability, whether the target was alerted at the presence of the weapon or not (if it wasn't, it loses the maneuverability modifier), target's ECM, weapon's ability against Vlow targets (if applicable), target's very high speed (if applicable), target's very small signature (if applicable) etc. (Ragnar especially, being something of an airwar nut, spends endless hours testing, say, the Pk of an AA-6 against an F-14A+ etc. etc. The detail & thoroughness of his tests manages to bore even **me** sometimes, which is quite an achievement :-).

So, to use the SA-2B example, the initial 15% Pk will easily be reduced to 5% (the minimum Pk we use on all weapons) as a result of manouvering and ECM by a typical target of its era, say a B-52C/D. (BTW what is your source for the 1/150 Pk? What we've read and heard suggests a rough 1/20 rate). Harpoon correctly shows that even a high-end SAM such as a late Patriot or SA-10 variant is going to have a very hard time against a fast, stealthy, terrain-hugging, highly-agile and ECM-stuffed target. Never assume that the "stock" Pk that you see in the database is the weapon's actual chance of killing the target. The database Pk value refers to the weapon's ability against a perfectly cooperating target in the best of conditions (which almost never materialise).

There are also a number of real-life factors detrimental to SAM & AAM performance that cannot be easily taken into account in Harpoon. For instance, many (and I mean **many**) of the missed shots of such weapons since the early 60s are attributed to the fact that they were launched either outside the weapon's parameters for the engaged target(s) or without properly establishing a clear lock to the target. This would be either done deliberately (putting up a lot of "stuff" quickly to literally scare the attackers off and break the cohesion of their carefully organized formations, subsequently making each of them an easier target for the "real" killing shots), or unwillingly: Accurate and effective fire-control computers able to provide a solid estimation of whether the target is within the valid launch envelope appeared in widespread use only in the 70s in the Western block, and even later in the East. Until then, you simply had to have a well-trained & experienced operator at the console and hope he knows his stuff. This was often the case with the AIM-7 and SA-2 & SA-7 (and AAA) in Vietnam, the SA-2, SA-3 and HAWK in the Middle East etc. there is even strong evidence to suggest that the Patriot PAC-1 in DS had a very low Pk against Scud-mod TBMs because of this problem (and because the crews would frequently, out of "can't be too careful" conservatism, fire multiple missiles at the same TBM in rapid succession, typically the latter shots being wasted).

Now in Harpoon 2 & 3, the AI handling the missile engagements is smart enough to never fire unless the preconditions of valid launch parameters and valid lock are satisfied (it also walks the extra mile of firing only within the no-escape zone, which is calculated using the target's velocity). This means that a boatload of missiles that in real-life would have been fired and missed, in the simulation they are never fired at all. So it makes perfect sense that you get the impression of missiles in Harpoon being deadlier than their real-life counterparts.

On your note on use of terrain by aircraft: Harpoon 2 & 3 correctly model the effect of terrain masking; they actually calculate the LOS of each weapon to each target within its maximum range. Put a mountain between your aircraft and enemy sensors/weapons and you will disappear (unless the other guy is using an OTH-B system). The effect of terrain clutter on sensors is also used on sensor detection-range computations as well as terminal missile engagement calculations (VLow target modifier). So we have strong reason to believe that the simulation justly rewards aircraft that make the sacrifices of taking the low road (reduced sensor horizon, minimised launch parameters of own weapons, reduced range etc.).

If even after these arguments you are still convinced that we are being overly generous to anti-air operators, feel free to contact us on the HHQ forums and we can discuss concrete examples as well as methods of refining the weapon engagement models - both in the database and in the simulation code itself.

I have been playing Fleet Command for some time and am considering purchasing H3. Could you tell me, is there any similarities in the games and would I be correct in assuming H3 is more like the real thing and perhaps therefore, much more difficult to play?

Your comments would be greatly appreciated.
Dave Fouracre.

Dimitris Dranidis answers:

Hi there, and happy holidays.

To give you a perspective, both Fleet Command and Harpoon 3 had the same goal: to be the successors to Harpoon 2, arguably hitherto the finest air/naval strategy-simulation.

Fleet Command, while having its own merits, failed miserably because the developers chose (or were forced) to "target the mainstream market" (you know what this means).

Harpoon 3 succeeded brilliantly because the developer stayed true to the spirit of H2 and improved the aspects that needed attention (Windows compatibility, speed, bug fixes, added features etc.).

*Similarities: Both products deal with air and naval warfare at the tactical/operational level. You will find H3's tactical windows quite similar to Fleet Command's 2D-view, but with much grater functionality (automatic range-rings etc.). H3 does **not** use any 3D graphics whatsoever, it only uses the 2D-display method.*

Harpoon 3's realism level is light years ahead of Fleet Command. This has been the subject of endless discussions in the past, so I'll be brief here. Fleet Command is a game, Harpoon (in all versions) is a non-classified simulation. Simple as that.

However, H3 is quite easy to get into. The user-interface is very "logical" (far more so than Fleet Command) and easy to master. Also, the "advanced" interface features (missions, tactical overlays, logistics management etc.) are optional; you can easily play and win most scenarios with the familiar point-and-click interface. Moreover, there is an entire battleset (group of scenarios) dedicated to tutorials, all the way from elementary functions to advanced and complex operations. If you go through it, manual in hand, you should have no problem whatsoever.

Hi!

I just began work on a monster scenario and had 3 bases built, 4th under construction for Soviet side (nothing on NATO side) when the editor locked up. Trying to reload it gives me a fatal error, that the weather fails to load. Anybody want to look at this?

File size at last save (which won't load) is about 1 meg. More details upon request.

Regards,
Michael Masters

Ragnar Emsoy answers:

Michael,

What I think happened was that the editor crashed while saving the scenario, and thus weather (the last part of the scenario file) was not written to the disk. This has happened a couple of times to me too, although only in Harpoon II. A total loss.

To avoid losing the scenario if Harpoon3 crashes I strongly recommend taking lots of backups by frequently saving the scenario with different names. I've use the following system for several years now:

*test_001.sav
test_002.sav
test_003.sav, etc*

And then I use a separate file for the 'release' version, for example: testing.scn

PS. but why design a monster scenario? Why not scale it and cut it up into smaller scens so that everyone can play it? I've never played a monster scenario myself, and I probably never will. And the HarpoonHQ site log shows that these scens are only downloaded 1/10 as any times as the normal scens. So... :-))

How do you download H3 if you previously purchased it through nws.org? I recently upgraded to WinXP, and had to format my HD in the process. I thought I had copied over the H3 install stuff, but only copied the latest exe. I have my

lok and kee files. The email receipt for my purchase says to go the the nws.org webpage and scroll down for directions, but it appears you can't d/l anymore.

Jerry Snitselaar

Steve Eggleston (eggstor@wi.rr.com) answers:

If it's just the executable (Harpoon3xxx.exe, ScenEditxxx.exe and DBEditxxx.exe) you're missing and not anything else, you can download the latest version (3.5.7) at http://www.harpoon3.com/designer_notes.html and just continue playing as though nothing happened. If you're missing anything else, either e-mail Jesse directly or Chris Dean (NWS Team Director) at warshipfc@yahoo.com

1. Can you use the KC10 Extender (or any tanker) to perform in-flight refueling? Do you set the tanker up at a waypoint or add it as a element to a mission - and if the latter is true - can it be broken off from the mission at a certain point?
2. Is there a tutorial just on the mission editor? The missions themselves seem straightforward - but I'm sure there are tips on how to employ certain mission types.
3. The KC10 doesn't have a graphic or a pic in the db. Alot of things don't. If I want to take the pic at http://www.af.mil/news/factsheets/KC_10A_Extender.html and clip it in - how do I add it as a pic?
4. I remember from the old H97 days to add a jamming platform, such as the Prowler - to a strike package. How do you designate the target of a strike package? I can select aircraft and set waypoints - but if I want a SAM battery to be the subject of a strike - I can't seem to select it?
5. Are there any tips to the Intermittent use of ECM? Is there a reason to use it one way or another? Can I fly very low until I get close and then activate it in a strike package?
6. I set option 1 in the harpoon.ini file so I can talk to subs after they submerge. But I can't figure out if there is a trick to dropping sonobuoys. I think the helos I deploy are just using dipping sonar – will they deploy the buoys automatically?

That's it for now - thanks to all in advance.
GPL Dan

Dimitris Dranidis answers:

1. *IIRC you can add it to the aircraft assigned to a mission and it will refuel the other mission aircraft as appropriate. It's also a good idea to have a tanker in the air at all times (regardless of mission) wherever you have intensive air ops - you never know when your fighter CAPs will run short on fuel after an intensive BVR clash, for instance. Keep in mind that air-refueling in H3 is somewhat broken; it's inconsistent (sometimes it works, sometimes it doesn't) and doesn't always work the way you want it to. This is one of the bugs given priority on being fixed.*
2. *Mike Mykytyn has written a great guide to the mission editor. Here's the simple text form of the article: <http://www.harpoonhq.com/articles/articles.h2mission001.htm>. An improved version of the article, with some corrections and pictures, is included on issues #1 and #2 of Waypoint.*
3. *I seem to recall that there was an utility just for this purpose. Don't remember if it worked as advertised, though. Anyone...?*
4. *Before you create the strike mission, you first click-select the target. Then you create the mission and select "Edit now". When you go into the mission screen (the one in which you assign assets to missions) and select that mission, there should be a line saying something like "Anti-surface strike - Target: XXX".*
5. *Depends on the type of ECM. Using the DB-2000, all self-defence jammers are used automatically whether you have them activated or not. Offensive and stand-off jammers, such as those carried by the Prowler, are activated and used manually. The offensive jammers are a bit omnipotent at the moment because of H2/3's simplified ECM model (one other thing that is being worked on) - for example, their effectiveness does not reduce with range, they are not LOS-limited by the horizon, and individual frequency bands are not modelled. Using terrain-masking to your advantage is always a sound tactic. H3 makes it much easier than in H2, as aircraft now perform true terrain-following without needing constant babysitting (as was the case in H2).*
6. *There's a much easier alternative to manually editing the ini file: Paolo Moneta's H3 Launcher, get it here: <http://www.harpoonhq.com/utilities.htm>. To manually drop active and passive sonobuoys, press "[" and "]". To have your air assets drop them automatically, you have to assign them to air patrols from the formation editor. Two of the patrol types are "ASW - sonobuoys" and "ASW - Dipping sonar". Depending on what you select, the air units will drop buoys or use the dip on the patrol area you have specified (the area is defined relative to the center of the group and moves along with it, of course).*

Hi, I have a little problem because my pc crashed resulting in a total re-install. I've bought the key file etc. But it seems that the download version of H3 is gone from the NWS site. Is it me or?

Cheers
Mark Jensen

Mike Mykytyn answers:

Yes, NWS has discontinued the downloadable version of the game. Jesse's site <http://www.harpoon3.com> does have it however:-). I'm sure if you email him about the issue he'll take care of you.

Anyone able to help me out with false sub contacts when editing scenarios (using DB2000)?

Basically the problem is that any aircraft can "see" false sub contacts and ID them as false sub contacts.

Nothing kinda ruins an intense sub warfare mission like flying an F-15 over the water and having it ID all the "goblins" as false contacts or worse yet fill the map with visual spottings of false sub contacts before friendly subs are even within 500nm of the contact...intentional or not.

Confirming that during the scen editing, yes the false contacts are set to intermed depth and not on the surface with big white searchlights pointing into the sky, fireworks shooting into space and tin-foil kites flying off the decks with chem lights daisy chained down the string....

cheers
zero2espect

Ragnar Emsoy answers:

One small comment on how to use false contacts:

Submarines without orders will automatically go to periscope depth or surface. This is what happens to the false contacts in your scenarios. The easiest way to prevent this from happening is by plotting a small course for the contacts. Since the contact cannot move, they will never reach the end of the path and thus will stay 'Plotted' for the duration of the scenario without surfacing.

You can also use Whales in your scenario, they look very much like diesel-electric subs, and if you're lucky you get the player to waste dozens of \$400,000 torps on these things :-)

Played "Entering the Norwegian Sea" scenario with the current database and build. I had a message come up to report to H3 a bug. A Nimrod and a Viking on several occasion detected what appeared to be an aircraft carrier by its symbol, however since there are no surface vessels in the area and detection was by MAD, I presume it was a sub. The AA-log was running. What other information can I supply?

Tony

Mike Mykytyn answers:

That's a sceneditor/DB trick which you saw. Basically, there's a neat unit in the DB2K called "Landbase" which is like an invisible carrier. This platform was designed to give you the ability to have waterborne remote bases (the idea being you can base aircraft off axis, within in certain range, a neat tool really :-). They are supposed to be invisible and we'll surely look into it. IIRC it was behind a Nav Zone designed to keep AC out (or a marker to warn you to keep your AC out). So if you check out your log you'll see that violation and it may be on your victory screen as well.

My question concerns setting the date for the scenario. When the edit menu on the taskbar is selected and reset date and time is selected and the window opens, you can reset the year up to 99 but not 03 or 04. Can this be overcome, and if so, how?

Thanks,
Tom Stansell

Fred Galano (f.galano@att.net) answers:

In my experience the scenario date is stuck in the century of the original date. In other words, if you create a scenario in 1985 for example, you can change the date to 1988 or 1995 for example (dates within the century) but you cannot change it to the year 2003. This also means that if you create a scenario in the 21st century, you can't change it back

to the 20th. So for example, you can change a 2002 scenario to 2007 or 2009 (dates within the century) but you can't change it to 1997. Anyway, hope this helps.

I have a couple of general questions about databases:

1) What references are folks using, I know about Jane's Fighting Ships but I saw a review on Amazon that generally says Jane's isn't very good. Something I already knew from looking at entries for the subs that I was personally on, the Jane's specs are not very close. He recommended "Conway's All the World's Fighting Ships" in place of Jane's. I don't think I've ever seen one of these.

2) I noticed that in DB2000 there is a considerable gap in US Nuke subs, the entries seem to start with the Sturgeon Class and ignore everything prior. All the Boats from the Nautilus to the Sturgeon are missing. I was thinking about trying a scenario with the Scorpion based on what I heard about the cause of its loss.

J Bryan Kramer

Mike Mykytyn answers:

1. *From what I know all sorts of sources from Jane's to the Harpoon Annex. The database guys I know do their homework.*
2. *The DB2k covers the years 79-02 which explains the gap. There is a DB in the works (UDB56-79) which will cover the time period you require.*

Ragnar Emsoy answers:

1. *See Mike's reply :) We discovered long time ago that Jane's is not a reliable source.*
2. *The DB2K covers 1980-2003++. I know some boats are missing, but no-one have requested them for their scenarios so I never bothered creating them for the database:*
 - SSN 685 Glenard P. Lipscomb (1974->1990)*
 - SSN 593 Thresher (1963->1992-97)*
 - SSKN 597 Tullibee (1960->1988)*
 - SSGN 587 Halibut (1960->1986)*
 - SSN 585 Skipjack (1959->1986-90)*
 - SSN 578 Skate (1957->1984-88)*
 - SSN 575 Seawolf (1960->1987)*

Let me know which ones you need :)

I have noticed for some time new aircraft types in DB2000. Some of them like the Raven, Skywarrior and the Greyhound I figured out were for AWACS or reconnaissance. Some helicopters were to carry marines, which I figured out you could load the marines and use them as a weapon against ground targets. However, some aircraft and helicopters like the C-130H and various Sea Kings do not have any loadouts and I cannot figure out if they are for decoration or have some purpose. Most of these aircraft are used to carry cargo or men; some of the helicopters seem to be for search and rescue. However, these functions are not modeled in Harpoon 3. Fleet Command, an otherwise poor wargame, did allow you to rescue pilots. A neat feature but not really important. But in Harpoon 3, why are these aircraft included in the database and some scenarios if they cannot serve a purpose?

Jim Yalem

Mike Mykytyn answers:

Technically you are correct. Some are just there for aesthetics and serve no real purpose than perhaps a set of eyes or perhaps a neutral contact to create a "real" atmosphere. I think its a good thing and given that there inclusion doesn't hurt gameplay. I don't think we should start erasing the entries. I also would like to note that a lot of Ragnar's design goals are to create a realistic OOB and not just one that is functional. DB size isn't really any issue anymore (at least as it was way back when) so don't think there is anything wrong with keeping them.

Tim Ousley comments:

Jim Yalem's question about aircraft additions was a good one because of something I've seen happening intermittently. In H3 with auto-formations OFF, when I have different missions going on--both manual and mission-editor types--I find that sometimes I can't land planes on the carrier from which they launched, even in one-carrier scenarios. I get a message that says "unit unable to land at selected destination" or something like that. There is a workaround (plot plane to the carrier and let it loiter and it eventually lands, I guess when it's out of fuel) but this ties up some resources. It seems to me the simulation would take into account that the aircraft director would be able to handle the recovery of all aircraft launched on missions.

My questions are 1) does anyone know the cause of this; and 2) will it get worse if I introduce Greyhounds into a scenarios and have COD traffic shuttling back and forth between land & carrier, adding to the number of planes on deck?

Ragnar Emsoy responds:

There are many things that can cause this problem, the most common ones are:

- 1) *There are too many aircraft on the carrier*
 - 2) *We've changed an aircraft's size in the DB2K database, so that it takes up more space on a carrier. The game will allow you to take off, but when coming back there is no longer enough room.*
 - 3) *There is a bug in the aircraft facilities somewhere. In the original database, aircraft carriers had hangars with different sizes. Normally, the larger hangars were filled up first, and if the AI put all the small aircraft here, you will not be able to land your Tomcats because the remaining hangar space is 'too small'. I'm pretty sure we've fixed this problem _for good_ in the DB2K, but it could be that we've missed one or two ships. So please let us know right away when this problem arises the next time so that we can fix it (if possible). Thanks.\ Adding-in CODs will of course make the situation worse :) But we've added in some slack in the DB2K and you should be able to put nearly 100 planes on a carrier.*
-

First a quick one; Have the monster scens by Klaus been updated to DB2000 v6.2 yet? Is any body playing them with the database mismatch?

Second, I had a problem with a Type 42 destroyer under SS-N-12 attack. It saw about 12 incoming missiles and started shooting 2 at a time, however all the incoming missiles showed the icon mark that says they are under attack, and none of my other SAM ships would engage automatically.

My guess is the game is saying "I am going to engage them all with the first SAM ship" and does not take into account rate of fire since other ships could get SAMs away before the first ship gets the second salvo away.

Tony

Ragnar Emsoy answers:

1. *No, the scenarios will not work with a newer database. Normally, Harpoon3 will handle smaller mismatches (even where Harpoon2 did not), but the difference between v6.1.X and v6.2 is too great.*
2. *This has to do with the way Harpoon3 analyzes an incoming attack, and the 'strength' of the defending ships. In some cases, all missiles will be assigned to a single ship, thus the icon mark. To solve the problem you can set WEAPONS TIGHT and handle engagements manually.*

Klaus Behrman comments:

The monsters will be updated once [DB2000 v6.3] is released.

I already have the downloadable version of Harpoon3. I was wondering how I can get the CD.
mm60445

Dimitris Dranidis answers:

Assuming you have purchased the download version, it's a tricky question...the normal procedure when ordering the CD (from NWS) is that you are paying the full price, which includes the purchase of the actual software. But if you've already paid for registering the DL version, you'll have to make sure that the NWS are aware of it (maybe contact Jesse himself?) and thus only charge you for the S&H costs.

How does one break apart an enemy base into the components of airstrip, bunker, hangar, etc?

Thanks.
GPL Dan

Dimitris Dranidis answers:

If you mean during scenario-design time, you add the components individually and then group them altogether as appropriate.

If you mean while actually running the scenario, you switch from group-view to unit-view ("9"/"PgUp" on the keypad).

Is it possible to use the Scenario Editor if you don't have a full copy of H3 e.g only the demo?

Thanks
Chris

Dimitris Dranidis answers:

No, the scenario editor will behave just like the main program executable, ie. it will ask for the lok-kee combo that you get during registration. On the other hand, you get the same 10-day free trial period as with the main game.

My name is Clayton Powers and I have registered Harpoon 3. I'm emailing because I had a disk disaster and lost harpoon3 I cured the problem and tried to reinstall the program. I still have my .kee file. It's in the Harpoon 3 directory but I get a message that the game is not registered. What should I do to get back up and running?

Clayton Powers

Dan Hayes (danielh@bom.gov.au) answers:

Clayton, make sure the path is to your H3 directory is the same as it was before and ensure that the .lok that was used to generate the .kee file is also in the same location. If that doesn't fix it or you have lost the .lok file then just run the registration proram again and get a new lok and send it to Jesse with an explanation. He will get you a new .kee then.

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.