

THE QUICK & EASY GUIDE TO DERIVATIVE PLATFORMS IN H3

By Harold Hutchinson

A derivative platform is one that is based on the same hull and dimensions as the original platform – everything else is open for modification, enhancement, or replacement. This article will discuss a number of derivative platforms that go from minor upgrades to making them absolutely unstoppable juggernauts.

Why Create Derivative Platforms?

Of course, some people might ask why one would want to create a derivative platform when there are databases available.

There are many answers to that question. Let me begin by stating that the normal databases, the Harpoon User's Database (HUD) and DB2000 are both very well done. Developing a database takes a lot of time and effort, and the teams who put them together deserve the appreciation of the Harpoon community.

That said, I believe a big part of the fun from Harpoon is in asking questions that start with the words "what if" and taking things from there. It is most often done with scenarios created by users¹ that almost always involve a lot of simulated death and destruction.

I am of the opinion that database editors like PFEDIT (for DOS) and DATed (for Access 97) give computer Harpoon users the ability to do the same thing with platforms. One can create a derivative platform to give themselves an edge in a scenario, to try out a couple of ideas they might have been kicking around for a while, to make a scenario more challenging, or to take into account upgrades made to a platform in a database².

The derivative platforms discussed in this article were created by the author and are based on platforms from the HUD. Some of the platforms and components are in service, some are proposals, and some are ideas I came up with.

Upgunning Ships

This is one way to create a derivative platform. For this case, we will use a pair of naval platforms – cruisers from the United States of America and the Soviet Union (now the Russian Federation). The first is an "up-gunned" version of the *Ticonderoga*-class cruisers. The second is the *Sverdlov II*-class cruiser, a postulated upgrade of the *Sverdlov*-class light cruisers used by the Soviets. In both cases, these ships have received additional weapons capabilities.

Platform: Up-gunned *Ticonderoga*-class cruiser

Original Platform: *Ticonderoga*-class cruiser

Changes from original

- Forward 127mm/54 mount replaced by Mk 45 Mod 3 mount
- Mk 32 triple torpedo mounts replaced by triple ADCAP mount
- Mk 26 Mod 1 missile launchers replaced with Mk 26 Mod 2
- Two RAM launchers added.

Note: For the *Bunker Hill* and *Antietam* entries in the database, the VLS mounts remains the same, but the other systems are changed as above.

Platform: *Sverdlov II*-class cruiser

Original Platform: *Sverdlov*-class cruiser

Changes from original

- Add four quadruple mounts for the SS-N-22 Sunburn
- Add six CADS-N-1 mounts

For the American cruiser, the "up-gun" derivative was easy. The forward five-inch mount, a Mk 45, was replaced with the Mk 45 Mod 3. The Mk 26 Mod 1 missile launchers³ were replaced with Mk 26 Mod 2 missile launchers. And the Mk 32 triple mounts for Mk 50 torpedoes were replaced with a triple-launcher for the Mk 48 ADCAP. In short, the up-

¹ Many of these scenarios for DB2000 are available at Harpoon HQ (<http://www.harpoonhq.com>).

² The mere presence of the capability to create a derivative platform might also be cited a reason to create such platforms.

³ This was using the non-VLS equipped *Ticonderoga*-class cruisers as an example. The *Ticonderoga*-class cruisers that have the Mk 41 VLS are discussed in the note with the platform profiles.

gunned *Tico* has more weapons, the weapons are more powerful (particularly the torpedo armament), and they reach further.

The *Sverdlov II* was a simpler “up-gunning” than the *Ticonderoga*-class cruisers. In this case, the only change was the addition of four quad Sunburn launchers and six CADS-N-1 close-in-defense systems. The result is giving these old veterans an added kick that would allow it to provide an incredible punch in a surface fight, and come home alive.

The important thing to keep in mind is that the mounts will require sensors. Check the directors and make sure they are on the ship. Having missiles that will not shoot because they do NOT have a director is NOT what you want to have happen in the middle of a scenario.

Rearming Submarines

The best example is the conversion of the first four *Ohio*-class SSBNs to Tomahawk carriers – SSGNs. This was a simple matter of creating the new weapons records and the mount⁴.

Of course, this also presented the second opportunity to create another derivative platform, the notional *Delaware*-class special operations submarine (SSN(SO)). This was done by removing the launch tubes, and creating a DDS shelter mount.

Platform: *Ohio*-class SSGN

Original Platform: *Ohio*-class SSBN

Changes from original

- Replace Ohio SLBM tubes mount with Ohio TLAM mount.

Platform: *Delaware*-class SSN(SO)

Original Platform: *Ohio*-class SSBN

Changes from original

- Replace Ohio SLBM tubes mount with DDS

Flying High

Aircraft are, in a way, the hardest platforms to use as a basis for a derivative. One has to keep more in mind, but one can also add a host of weapons systems. The best example is a variant on the venerable B-52G bomber, inspired by an article about the Air Force considering creating an electronic warfare version of the B-52.

This derivative is a classic example of cutting and pasting a system onto another platform. First, it is intended to retain the same bomber capabilities as the B-52G/H⁵. The electronic warfare suite selected was that of the EA-6B Prowler. Then, I added a derivative weapon.

Platform: EB-52G Stratofortress

Original Platform: B-52G Stratofortress

Changes from original

- Add ALQ-99 jamming systems.
- Create loadouts suitable for SEAD role

That takes us to the next topic in creating derivative platforms.

Things That Go Boom

A weapon is the easiest derivative to create. The options are vast, and the process is as simple as adding a different warhead or sensor. This can be particularly useful when you want to give a derivative platform something that makes it distinct from the original – or if you just want to give an original platform something with more range, a bigger punch, or both.

⁴ The *Ohio* SSGN already exists in the DB2000.

⁵ The EB-52G as postulated by the author might be viewed by some as an end-run around the START treaty between the United States and Russia.

For example, the derivative weapon created for the EB-52G's primary anti-radar armament, the AGM-167 Anti-Radar Cruise Missile, is an AGM-129 with the nuclear warhead replaced and a HARM seeker installed.

Weapon: AGM-167 Anti-Radiation Cruise Missile
Original Weapon: AGM-129 Advanced Cruise Missile

Changes from original

- Replace 200-kiloton nuclear warhead with 1,000-pound Bullpup warhead
- Add HARM seeker

Another derivative that I postulated, the Nuclear ADCAP, is a regular ADCAP torpedo with the high-explosive warhead replaced with a 20-kiloton B57 warhead.

Weapon: Nuclear ADCAP
Original Weapon: Mk 48 ADCAP

Change from original

- Replace high-explosive warhead with B57 nuclear warhead (20 kiloton)

I also created two derivatives of the ERGM round from the Mk 45 Mod 3 mount. Both are designed for sub-killing. The first is a conventional round – practically unchanged from the regular ERGM round, save for the target flags and a lower hit probability. The second, a variation of the conventional ASW round, replaces the high-explosive warhead with a five-kiloton nuclear depth charge.

Finally, there is the RIM-120 Sea Slammer – a replacement for the Sea Sparrow in a point-defense role. This was a derivative weapon used in making a derivative naval vessel – the USS *Iowa* modernized on the basis of recommendations made by the United States Naval Fire Support Association⁶ (<http://www.usnfsa.org>; the recommendations are available at <http://www.usnfsa.com/articles/fsao/fsao14.htm>).

Weapon: RIM-120C Sea Slammer
Original Weapon: AIM-120 AMRAAM

Changes from original

- Adjusted the minimum launch altitude.
- Added a new director.

Platform: BBG 61 *Iowa* (USNFSA)
Original Platform: BB 61 *Iowa*

Changes from original

- Remove all twin 127mm/38 mounts
- Remove all Tomahawk ABL
- Add four 61-cell Mk 41 VLS
- Add four 32-cell Mk 41 VLS
- Add two 48-cell Mk 41 VLS for Sea Slammer
- Add four RAM
- Add four 25mm/80 Bushmaster
- Add four Mk 141 launchers (increase total to eight)
- Add TPQ-47 Firefinder radar

Final Thoughts

Computer Harpoon offers the best opportunity to try out derivative platforms – everything from ships to weapons.

The derivative platforms and weapons that can be made are limited only by the imagination of the Harpooner who decides to create them – and that is before people begin to create entirely new designs from scratch. That will be covered in the future, along with a more in-depth look at creating the components used in platforms.

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⁶ *The author is well aware of the countless debates on USENET and other discussion threads concerning the feasibility/wisdom of modernizing and reactivating the battleships. The author respectfully disagrees with the experts who conclude that such a modernization/reactivation is not the best course of action.*