
Harpoon Naval Review 2009

Edited by
Dave Schueler

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Sample file

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The designers of *Harpoon Naval Review 2003* and *Harpoon* are prepared to answer questions about the game system. They can be reached in care of the *Admiralty Trilogy* Group at adtrgroup@aol.com. Visit their website at <http://www.admiraltytrilogy.com>.

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Cover: The Spanish Navy frigate Alvaro de Bazan (F101) sails alongside the Nimitz-class aircraft carrier USS Theodore Roosevelt (CVN 71) during Alvaro de Bazan's departure from Carrier Strike Group Two (CSG-2). U.S. Navy photo by Photographer's Mate 2nd Class Matthew Bash.

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Introduction

Welcome to *Harpoon Naval Review 2009*. Thank you for supporting this and earlier editions of *Harpoon Naval Review (HNR)*.

I believe I've gathered some interesting articles and scenarios covering many different aspects of modern naval warfare.

As most of you know, there are some changes happening to the *Admiralty Trilogy* system. The biggest change is the unification project. This project consolidates data (ship, aircraft, and weapon information) and rules for all the *Admiralty Trilogy* games (*Fear God and Dread Nought*, *Command at Sea*, and *Harpoon*), providing consistent and compatible rules to deal with all aspects of naval warfare.

This will allow players to have a single system that covers naval warfare through the 20th century and into the future. While the unification isn't complete, I have updated the *HNR* Ship and Aircraft forms to include the most recent changes that affect *Harpoon*^{4.1} rules. This includes new damage ratings for ships, aircraft, and weapons, and changes to the air combat and damage control rules. All of these changes were introduced in *The Naval SITREP*, but the forms are still usable with the standard *Harpoon*^{4.1} rules without using the changes from *The Naval SITREP*. There are more changes coming to get the current systems aligned, such as changes to surface and anti-air/ missile gunnery, and you can expect to see those changes in the upcoming fifth edition of *Harpoon*.

Note there is a terminology change in *HNR*, "Electronic Support Measures" (ESM) is now referred to as "Electronic Support" (ES) by the U.S. Navy.

I watch the discussions on several Yahoo groups, especially the *Admiralty Trilogy* and *Harpoon*⁴ groups, and the *Harpoon*⁴ forum on ComsimWorld. So, if you have comments, suggestions, questions, etc. about *HNR*, you can post them on any of those locations and the information will get to me. They are also great places to talk with other *Harpoon* players about scenarios, tactics, and game rules.

I'm continuing to look for material for future issues of *HNR*, so I am putting out the call for scenarios, optional rules, and articles on tactics, world navies, or potential conflicts. If you would like to contribute or have an idea for something, I encourage you to get in touch with me. Even if you don't have any material to contribute, you can still help by letting me know what you think about *HNR*.

If you are interested in getting more information and scenarios for *Harpoon*^{4.1} and other *Admiralty Trilogy* games, you should take a look at *The Naval SITREP*. It is published twice per year and has articles, information, scenarios, and rule changes/ clarifications for all the games in the *Admiralty Trilogy*.

For more information about subscribing to or getting individual issues of *The Naval SITREP*, contact the *Admiralty Trilogy* Group at adtrgroup@aol.com or check the website at www.admiraltytrilogy.com.

Dave Schueler

Scenarios

Harpoon Naval Review provides *Harpoon*^{4.1} players with new scenarios, ship/aircraft forms, and optional rules. The ship and aircraft forms in this supplement are for warships and aircraft in the included scenarios (note that forms for some ships and aircraft are not included). In order to play the scenarios in *HNR* you will need a copy of the *Harpoon*4.1 modern naval wargame rules.

The scenarios included in *HNR* cover historical and hypothetical naval battles around the world, and deal with a variety of nations and situations. While some scenarios aren't very probable, others could happen tomorrow (or may have already happened). The scenarios use a wide range of ships, aircraft, and locations. Some of the scenarios were originally designed to be played at conventions, allowing many players to be involved in the game.

Harpoon Form 10s

Form 10s present in a concise format the basic data needed to use the depicted ship in a *Harpoon*^{4.1} scenario. Some forms are specific to a particular ship or modification that may not extend to all the ships in the same class. The information presented in Form 10 is described below.

Basic Ship Data: The information presented in the basic ship data gives a general overview of the ship. Included in this section is all the pertinent data necessary to maneuver the ship (such as ship size and turning capability), the signature the ship presents for visual, electronic, and sonar detection.

Radars: The radar systems of the ships are grouped together in one place with their functions and detection ranges. To attempt a search with radar, the player indicates which one is being used during the Detection Phase of the turn. The players or referee determines the radar contact size/signature of the target(s) (found in the Basic Ship or Aircraft Data section), the radar horizon, range to the potential contact(s), and informs the player if the radar search was successful. When a radar is lost because of battle damage or breakdown, it should be lined out on the ship form. See Section 4.2 of the *Harpoon*^{4.1} rulebook for more details.

Sonar: The sonar systems of the ship are grouped together in one place with their type, frequency, active/passive detection ranges, and active/passive percent chance of detection. To attempt a search with sonar, the player indicates which one is being used and whether the search will be an active or passive one. The referee determines the range to the contact(s), the effects of a layer (if present), and other Sonar Range Modifiers to determine the percent chance of detection. The player's die roll is compared to the modified detection chance to see if the sonar search was successful. When a sonar is lost because of battle damage or breakdown, it should be lined out on the ship form. See Section 4.4 of the *Harpoon*^{4.1} rulebook for more details.

Infrared Sensors: The infrared sensor systems are grouped together in one place with their generation and detection ranges. The players or referee determine the size/signature of the target(s), the visual horizon, range to the potential contact(s), and informs the player if the search was successful. When an infrared sensor is lost because of battle damage or breakdown, it should be lined out on the ship form. See Section 4.6 of the *Harpoon*^{4.1} rulebook for more details.

Electronic Warfare: The information for the ship's Electronic Support (ES), Acoustic Intercept Receivers (AIR), and countermeasures is grouped in this area. See Section 4.3 of the *Harpoon*^{4.1} rulebook for details on ES and Section 4.4.5.4 for details on AIR. Electronic countermeasures are used to help determine the percent chance to hit of a guided weapon, while acoustic countermeasures help determine the percent chance to hit of a homing torpedo. See Chapter Six - Combat of the *Harpoon*^{4.1} rulebook for details on electronic and acoustic countermeasures.

Weapons: The ship's weaponry is listed under the Weapons section. Each mount has a separate entry shown in bold type. The mount information includes the firing arc restrictions and fire control system information. If the weapon mount is a missile launcher or torpedo tube, the types of missiles or torpedoes are listed, along with their specifications.

To the right of each weapon mount are numbers ranging from 1 - 100 (00). These numbers represent the probability of the weapon mount being damaged when rolling for weapon mount critical hits. When a weapons mount is lost because of battle damage or breakdown, it should be lined out on the ship form. If a mount has already been knocked out, no further damage is done.

Specific firing information is provided for each weapon system including range, percent chance to hit, weapon generation, speed, damage inflicted, and target types. For example, a typical listing will have 35(3rd Gen.) to show the weapon's range in nautical miles (35) and that it is a 3rd generation weapon. Surface to air missiles also have an ATA rating to determine the hit chance against air targets.

A weapon capable of hitting a surface ship or submarine inflicts the damage points (DP) shown. See Chapter Seven - Combat Results of the *Harpoon*^{4.1} rules for information on how damage is applied to ships. Weapons that hit air targets destroy them or force them to abort their mission without inflicting specific damage points, although Section 8.2 can be used for a more detailed aircraft damage system.

Boxes are included to show expenditure when a weapon is fired. For each missile, torpedo, or ASW weapon fired, check off one box. When all the boxes have been checked off, the ammunition available for that weapon has been expended and the weapon cannot be fired until it has been reloaded. See Chapters Five and Six of the *Harpoon*^{4.1} rulebook for more details on weapon characteristics and uses.

Aircraft: If a non-aviation ship carries any aircraft, they will be listed as weapons, since they are treated as such for critical hits. On aviation ships (CV, CVH, LPD, etc.) boxes are also provided for all the aircraft in the air group. The

player will need a *Harpoon* Form 20 (or prepared Form 2) for each aircraft listed in the Aircraft section.

Remarks: Special comments on the ship, its capabilities, and performance are included in this section. When names of other ships in the class are listed, these ships are effectively identical and the form can be used for those ships as well. However, in the frequent cases where other ships in the class carry different weaponry, sensors, or otherwise deviate for the class specifications, these ships are not listed. In some cases, if there is a modification to the class, a new paragraph with the date will describe the nature of the change and which ship(s) it applies to.

Damage and Speed Information: This section lists the effects of battle damage on ship's speed. There are also boxes for tracking Critical Hits and Fire/Flooding Conditions for the ship.

Harpoon Form 20

Harpoon Form 20 presents, in a concise format, the basic data needed to use aircraft in a Harpoon scenario. The information presented in Form 20 is described below.

Basic Aircraft Data: The general information for this aircraft type. Included in this section is the Maneuver Rating (consisting of a clean or lightly loaded rating and a fully-loaded rating), damage value, size, and signature (radar contact size) for the aircraft.

Sensors: This section lists the sensor systems (radar, sonar, etc.) associated with the aircraft are listed along with the sensor specifications. Also included is the bombsight (if the aircraft is equipped with one) and countermeasures information.

Performance: In this section, the aircraft's speed as a function of altitude and throttle setting is provided in a matrix format. The ceiling (maximum altitude) is also listed.

Endurance: The aircraft's engine type, range on internal fuel, and internal fuel load is listed in the Endurance section. In-flight refueling capability and type is also noted.

Remarks: Special comments about the aircraft, the service history, capabilities, and modifications to this aircraft type are included in the Remarks section. If the aircraft carries a sonobouy processor, the information about the processor is also included here.

Weapons: The aircraft's maximum payload, offensive/defensive guns, hardpoint configuration and weapons that can be carried are shown. When the aircraft is armed, the specific weapons loaded must be designated; other weapons should be lined out. It should be noted that not all possible weapons loads are shown. In some cases weapons were omitted for space considerations. In cases where there are questions about weapons loads for aircraft, players should refer to Annex B.

Armada Española

By Gorka L. Martínez Mezo (with thanks to Angel del Peso Martín, Lluís Garreta and AX1 Ron Price, USN (Ret))

Editor's Note: This article provides information about the current state of the Spanish Navy and Naval Air Arm, including future plans for the force. The article also includes information about the air defense capabilities and equipment of the Spanish Army and Air Force. The information is current through June 2008.

Overview

Developed as an Antisubmarine Warfare (ASW) force with limited amphibious capabilities during the Cold War years, the Spanish Navy (*Armada Española*) is now completing a series of steps to adapt itself to the new strategic environment; becoming a more balanced force able to project power over land and to operate in remote waters in support of international policy bodies, such as NATO or the UN. This change included a recent reorganization to improve the flexibility of the force as a whole, reducing both personnel and ship numbers while replacing older vessels with new generation systems creating a smaller, leaner and more effective force.

Leading the modernization effort are the five F100/*Alvaro de Bazán* class air defense frigates. Equipping them with the SPY-1D and associated Aegis combat system puts them at the forefront of European Anti-air Warfare (AAW) ships currently in service. They also have extensive command and control equipment, which allows them to act as task force flagships. The first four units are currently in service and a fifth unit, with upgraded capability, was ordered in July 2006 for delivery in 2012. Improvements include the option to add Cooperative Engagement Capability, integration of land attack missiles, improved sensors, and an evolved version of the Aegis system. This multi-mission capability fits perfectly within the "Armada XXI" development plan which aims to turn the naval force into an asset capable of power projection in littoral and coastal waters, as well as inland.

For many years, the Spanish Navy had shown interest in obtaining the US Tomahawk land attack missile. Formal authorization was obtained in 2005, although no forthcoming sale was announced. In June 4, 2008 the Defense Security Cooperation Agency notified the US Congress of a possible Foreign Military Sale to Spain of 20 RGM-109E Block IV Surface Ship Vertical Launched Tomahawk Land Attack Missiles, five Tactical Tomahawk weapon control hardware and software systems, canisters, containers, test sets and support equipment, spare and repair parts, personnel training equipment, operational flight test and communications equipment, technical assistance, and other related elements of logistics support. The estimated cost is \$156 million. When finally purchased, these weapons will be carried on the Spanish Navy F-100 Class Frigates. The missiles will be conventionally armed.

An important element of the new Armada XXI strategy is a modern submarine force. After many years of studies and formulations trying to adapt the role of the submarine to the new post-Cold War/post-September 11 environment, a new class of Air Independent Propulsion (AIP) submarines are being built as the S-80A class. The original design was conceived as a medium-sized derivative of the

Franco-Spanish *Scorpéne* SS, but the S-80A design has grown to become a 2,400 ton medium-range boat, capable of deployments to distant patrol areas and influencing events on land via its land attack missile capability, as will be described later.

With a displacement of 27,000 tons and a length of 225 m, the new *Buque de Proyección Estratégica* (BPE or Strategic Projection Ship) *Juan Carlos Primero* is the biggest naval vessel ever built in Spain. This multipurpose air-capable platform will be used for air assault, amphibious operations, tactical transport of Army forces, and humanitarian relief missions. The ship will be able to embark up to 1,400 troops and deploy them through a stern well dock or airlift via her 185 m flight deck. The ship is also fitted with a 12° ski jump to operate V/STOL fixed wing aircraft, currently the EAV-8B Harrier II and eventually the F-35B.

Most of the EAV-8B Harrier IIs used by the Naval Air Arm have been modernized to the radar-equipped Plus standard, providing improved capabilities for both air defense and surface attack roles. The ASW capability is based on the HS.23 (equivalent to SH-60B) helicopter fleet. The fleet is comprised of six newly built Block I multimission helicopters and six older Block 0 models, which are being upgraded to the Block I standard. The remaining HS.18 (Augusta-Bell AB-212ASW) and HS.9 (Sikorsky SH-3H ASW) helicopters have been converted into assault helicopters and will be used in that mission until an adequate replacement is procured. Both types will be replaced by the NH-90.

The ability to sustain force-projection missions will be improved with the addition of a new combat logistics ship derived from the current *Patiño* class. Construction of this new double-hulled logistic vessel, *Cantabria*, was approved in the 2005 budget and will be launched this year.

The small mine countermeasures force is based around six *Segura* class multipurpose minehunters. They are being upgraded with a new mine-warfare oriented combat system plus MineSniper explosive remote disposal equipment. All the old wooden-hulled ex-US minesweeper/hunters have been decommissioned.

All new construction is characterized by a high use of national content plus ample use of cooperative agreements with both European and US partners, a clear signal of the willingness of the Spanish government to expand its relations with its allies. While the former conservative government favored the US link, the current left-of-centre administration has favored European partnerships while maintaining a good relationship with the US from a more independent stance.

The main naval contractor, Navantia (formerly Bazán/Izar) is being downsized and adapted to market realities, concentrating in military projects after an unsuccessful foray into the civilian market after absorbing civilian Astilleros Españoles. This deal was rejected by the European Commission and the former Astilleros yards were segregated and placed on sale. Due to recent and very important export contracts, including four F-100 based AA destroyers and two BPE derivatives for Australia, Navantia became profitable again in 2007.

A more detailed review of the current and future platforms in use by the Spanish Navy follows.

Submarines

The Spanish submarine force is going through a transition period. Spain lost half its submarine strength with the retirement of the veteran S-60 (modified *Daphné*) class while waiting for the promising Navantia designed S-80 AIP submarine. Unfortunately, the first unit of the new class will not be delivered until 2013 and the submarine force will have to soldier on with a reduced force of four S-70 (modified *Agosta*) class submarines for at least the next five years and only four S-80s after that, as by the time the S-80 class will ready for service the S-70 class will be decommissioned.

S-60/*Delfin* class

After more than 30 years of service, the last S-60 class, S-63 *Marsopa*, was decommissioned in June 2006. As an important part of the Spanish submarine force, they deserve one final review.

This class was updated several times and became equivalent in most capabilities to the later S-70 boats. Upgrades started in 1983 and included new sonar and ES systems, a new DLT-3A fire control system (FCS), and F17 Mod 2 heavyweight torpedo (HWT) capability. The new FCS was able to control one wire-guided torpedo while calculating solutions for homing torpedoes against three other targets. After the FCS upgrade, F17 Mod 2 and L5 torpedoes were usually carried. The old 550mm L3, E14, and E15 torpedoes were kept as war reserve until the end. Standard loadout for the upgraded S-60 submarines included six F17 Mod 2 in forward tubes, plus six L5 Mod 3 in the lower forward tubes (where the long F17 with its cable dispenser couldn't be loaded due to length constraints), and the four short external rear tubes (which couldn't hold a full size torpedo). Alternatively, the class could lay French MCC-23D mines, with two mines loaded in each torpedo tube.

S-70/*Galerna* class

The S-70/*Galerna* class forms the backbone of the current Spanish submarine force. Since they were introduced into the fleet in the early 80s, these submarines have been continuously upgraded. The latest round of major upgrades was performed during the 1990s; *Galerna* started in April 1993 and was completed in late 1994, *Siroco* in mid-1995, *Tramontana* in early 1997, and *Mistral* in 2000. Upgraded items include new higher capacity batteries with central control monitoring, improved torpedo fire control, new ES, IR-enhanced periscopes, and SATCOM capabilities. A sound signature reduction program was also included.

The latest additions include the SOLARSUB towed array sonar, developed by Cartagena based SAES. SOLARSUB offers wide area surveillance with multiple track capabilities and uses a new generation thin line array that, due to its reduced diameter, allows for a wide range of towing speeds. Onboard equipment includes COTS (Commercial off-the-shelf)-based components for easy software driven upgrades and improved maintenance.

The bow mounted DSUV-22 cylindrical array is also being upgraded by SAES with new COTS-based digital beam-forming and processing equipment, replacing obsolete French electronic components.

The primary weapon remains the F17 Mod 2 HWT with the L5 Mod 3 as an option. MCC-23D mines can be carried in lieu of torpedoes. To enhance their Special Forces support capabilities, one 7.2x1.4m Dry Deck Shelter has been purchased from the French Navy.

The S-80 class

The S-80 program had a very long development process, whose genesis can be traced back to 1986 when the Spanish Navy officially declined to build a new SSN class with French technical assistance. The Spanish Navy started to look for a new long-range diesel-electric submarine to replace the cramped and short-ranged S-60 subs.

In the early 80s Bazan was working with its traditional partner, DCN, on new submarine designs suitable for Spanish requirements. Several designs (CD-1 and 2, CE-1 and 2) were studied but eventually dropped. At that time, the priority for the Navy was new surface escorts. The Navy did fund a series of studies on new submarine technology.

Initial work ran from 1988 to 1991 and during that period, four European firms were contacted: RDM in The Netherlands, PRONAV/DCN in France, VSEL in the United Kingdom, and the German Submarine Consortium formed by IKL, Thyssen Nordseewerke, HDW and Ferrosstaal. A team of eight Spanish engineers and naval architects (six from Bazan and two from the Navy Engineer Corps) visited each design bureau for a period of six to ten weeks for a detailed study of their proposals. The general opinion was that any could be chosen as a technical partner since all the designs offered (around 3,000 tons submerged) were suitable for the Spanish needs. At that time (1991) it was decided to split the program into two parts, one for the hull/platform and another for the combat system, so two different partners could be chosen. Shortly after, the possibility of adopting an AIP system was studied and a third subprogram was started. Early submarine concept and feasibility study work concluded in 1991.

In 1994 several unconfirmed reports linked the S-80 design either to the British *Upholder* or a new Dutch design, with overall displacement down to around 2,000 tons submerged. But it was not until July 1997 that S-80 project activity began in earnest. At that time Bazan was working with DCN on the new *Scorpène* SSK for the export market, so no one was surprised when during the 1997 Franco-Spanish summit it was announced that the *Scorpène* was to become the basis for the new S-80.



S-74 Tramontana

Spanish Navy