

DESIGNER'S NOTES

The phrase "Wooden Ships and Iron Men" came into prominence during the mid-nineteenth century, at a time when the wooden sailing men-of-war were rapidly being replaced by coal burning iron ships with their crews of smoke-blackened engineers and technicians. The phrase calls to mind an era that is now long dead, but by no means forgotten. For a span of almost three hundred years, sailing warships formed the backbone of all major navies. Then, with the advent of steam power, guns that fired explosive shells, and armor plating they were gone from the scene forever — like so many wooden dinosaurs. Only a handful of preserved relics such as U.S.S. CONSTITUTION and H.M.S. VICTORY attest to the fact that they ever existed at all.

As the "ragwagons" passed from view, so did the skills connected with them. No living man today could maneuver a fleet to sailing warships with the skill and precision that was attained during the three hundred years dominated by the great wooden ships. Such skills have been lost, and are really unnecessary in our modern technological world. Yet, while reading a book or viewing a program on sailing ships have you ever paused, for just a moment, and imagined yourself on the heaving deck of a mighty three-decker, with the spray in your face and the enemy in sight? This is the compelling interest and romance of the great age of sail. This game, in a small way, makes it possible for anyone interested to relive the days when wooden ships and iron men were capable of dominating sea lanes and toppling empires.

These rules take into account all of the major factors involved in conducting war under sails. They concern themselves with the naval battles of the French Revolution and Napoleonic Wars, including the actions of the "XYZ Affair", and the War of 1812. These conflicts saw the wooden warship reach its highest point in development, efficiency, and effectiveness. The rules are broken down into several sections for ease of learning and reference.

By 1793, the wooden sailing warship, with its broadside guns, had over two hundred years of steady development behind it. It had developed from the clumsy galleon into a highly formidable weapons system.

The wooden sailing ship got progressively larger as the years went by, and correspondingly stronger. As an example, Drake's famous flagship H.M.S. REVENGE, a major fleet unit of the Tudor period, was about the same size as a British 20 gun brig of the era covered by this game. This greater size and strength enabled ships to carry more and heavier guns. The guns themselves were greatly improved. Although highly inaccurate by modern standards, the guns of the 1793-1815 period had far less "windage" (windage is the difference between the size of the ballshot and the size of the gun's bore) than earlier pieces. There had also been improvements in loading and firing techniques — H.M.S. DREADNAUGHT at the Battle of Trafalgar could loose three broadsides in three-and-one-half minutes; ships of the Armada period averaged only three or four rounds per hour.

Improvements in hull and rigging design also evolve over this two hundred year period. Ships of the Elizabethan period were slow, and had great difficulty in working to windward. Ships of the 1793-1815 period, while they still could not sail as close to the wind as a modern sailing yacht, could make fairly good progress in working to windward. Outstanding hull designs, and the practice of sheathing ships in copper below the waterline, resulted in some outstanding sailers in the 1793-1815 period. H.M.S. VICTORY, one of the fastest three-deckers, could make better than ten knots under sail. U.S.S. CONSTELLATION, the "Yankee Racehorse", could make better than fourteen knots, making her one of the fastest frigates afloat.

As the ships and guns evolved, so did the tactics, and the commanders' abilities to use these ships in the most effective manner. The period 1793-1815 saw some of the most interesting and decisive battles of the entire age of fighting sail.

There are two important facts which must be kept constantly in mind when dealing with the subject of tactics

— one, the ships cannot sail directly into the wind, and two, the ship's guns are mounted to fire only to the sides.

Commanders of this era continually strove to gain the weather gauge — that is to place themselves between the enemy and the wind. This position gives the initiative to the side holding it, as it allows for the choice of exactly when and where to launch the attack. Ships in the lee position find attacking difficult, as beating upwind takes far too long, and leaves ships attempting it far too exposed to enemy fire. Ships with the weather gauge are therefore cast in the role of the attacker, and ships with the lee gauge are cast in the role of the defender — forced to follow the attacker's lead, and react to his maneuvers as they develop. The lee gauge is not without advantages, as the defender can fire his broadsides to rake the approaching enemy, and can easily retire to prolong this approach. Ships in the lee position can also aim their fire high, at the enemy's rigging, thus further slowing their approach.

The object of all maneuvers is to place the maximum firepower on the enemy, while avoiding maximum return concentrations. Obviously, the best position to maneuver for is the raking position, where a full broadside can be put into the enemy with no chance of a reply.

Maneuvering so as to oppose the fire of several ships to the return fire of only one ship is also effective, especially if the enemy can be engaged on both sides. This was a common nightmare among captains of this era as their crews were not large enough to work both broadsides at the same time.

When a number of ships is being used together, the most effective formation for getting a maximum concentration of firepower is the line ahead formation (commonly known as the "line"). Most squadron and fleet actions of the era were fought between opposing lines of ships, all maneuvering in unison in attempts to seize the weather gauge, and then place the massed fire of the line onto some isolated portion of the enemy's line. The line formation also facilitated the passage of flag signals from one end of the fleet to the other.

The intervals between the ships in a line is very important, as if they are too close there is a great chance of a collision, and if they are too wide there is a chance that enemy ships may slip through the gaps. Another disadvantage of the line is its inflexibility. Only two basic maneuvers can be performed by a line with any degree of precision — turning in succession, and turning together, thus changing the formation from line ahead to line abreast, or vice-versa.

Keeping the lines of ships, with their inflexibility, together led to many formal, stilted, and indecisive battles during the era of the ship-of-the-line. This led the more able commanders to adopt somewhat more informal tactics. The line was generally kept together until such time as an opening appeared, at which time the line was abandoned, and the ships entered a confused general melee. At Trafalgar, Nelson abandoned the line entirely, and led his ships head-on into a general melee. This was only possible due to the great superiority of his captains and crews, and such a maneuver would be suicidal against an equal or superior quality opponent.

Boarding is probably the most costly method of capturing an enemy ship, because crew losses, even on the winning side, will greatly reduce the fighting potential of the ship. Boarding should be attempted only after firing has reduced the size of the enemy crew, or if your crew is already far superior in numbers or quality.

There are advantages and disadvantages to an anchored position. The main disadvantages are that the enemy, being mobile, can concentrate his ships in any desired manner, and that if movement is necessary usually there is no time to weigh anchor, and the anchor cables must be cut, and the anchors lost. The advantages are that an anchored ship makes a superior gun platform that can be swiftly turned to face in any desired direction, or to present a fresh broadside.

The British Navy of the Napoleonic Era felt that the "74" was the match, when properly handled, to any ship

afloat. This can be demonstrated in the game by skillful use of this type's maneuverability (two 60 turns allowed as opposed to one) when fighting one of the awesome three-deckers.

Ships of the period 1793-1815 were rated according to the number of guns they were designed to carry. Most ships carried more guns than their rating would indicate, especially numbers of the light, short carronades. For instance, most British "74's" carried at least eight carronades in addition to their long guns, meaning that they actually carried at least eighty-two pieces of artillery on board.

Ships rated as carrying 100 to 130 guns were the most powerful ships afloat, and were generally used as flagships for the most senior admirals. These ships were "three-deckers"; that is, their guns were mounted on three decks, one above the other. Additional guns were also carried above these on the quarterdeck and forecastle. These huge ships provided ample cabin space for the admirals and their staffs. Their major disadvantage was their clumsiness compared to lower, more maneuverable ships.

Ships rated as carrying 90 or 98 guns were used mainly by the British as flagships on foreign stations, and for second line flag officers. These ships were also three-deckers, but carried smaller crews and smaller guns than the larger classes.

Ships rated as carrying 80 guns were extremely powerful two-deckers. Their guns were mounted on two decks, one above the other, plus the guns also carried on quarterdeck and forecastle. These ships were often a match for the 98 gunners in crew and firepower, and, in addition were lower and more maneuverable.

Ships rated as carrying 74 guns were also two-deckers, and were the basic and most numerous class of ships of the line.

Ships rated as carrying 64 guns were a weak class of two-deckers, and the smallest class of ships of the line. By 1815 they were being phased out as being too small to lie in the line of battle, as by that time they were smaller than many of the larger frigates.

All ships carrying 64 or more guns on two or three gun decks were called ships of the line during this period (the term "liner" is a later, Victorian term for this class of ships). Ship of the line was a term coined during the Anglo-Dutch naval wars of the Seventeenth Century to describe large warships capable of standing in a line of battle — that is, ships which could both deal out and absorb enormous punishment. The next class of ships falls under the general term of "frigates". Frigates carried all their guns on one gun deck, plus guns on the quarterdeck and forecastle. A frigate's single gun deck was carried much higher than the lower gun deck on a ship of the line. Frigates were characterized by being low, fast, and maneuverable.

Ships rated as carrying 44-50 guns were of several types. The British had both 44 and 50 guns types that carried their guns on two decks. These were not very successful classes, being too slow and clumsy to escape from a ship of the line, and too weak to fight one. Another type of 44 to 50 gun rating were the "razees". A razee was an old ship of the line with its upper gun deck cut down to form a powerful frigate. A razee 44 was usually cut down from a 64, and a razee 50 was usually cut down from a 74. Some razees were very successful in this configuration, but others remained as slow and clumsy as in their original configuration. The British in 1813 launched two monster frigates rated at 50 guns each. The Americans and French both built numerous large frigates rated at 44 guns.

Ships rated as carrying 32-40 guns were all of the classic frigate type, being fast and maneuverable enough to escape from a ship of the line, and powerful enough to handle any other vessel.

Ships rated as carrying less than 32 guns varied very widely in size, construction, and armament. Many of these smaller vessels were "brigs", having only two masts instead of the usual three. Many of them were armed almost exclusively with carronades. All of them were

maneuverable, but their speeds varied widely.

The following gives an idea of the proportions of ships of various ratings in a well balanced fleet:

NUMBERS OF SHIPS IN THE BRITISH ROYAL NAVY					
DATE	1793	1797	1801	1805	1814
RATING					
120 guns	0	2	2	1	2
110 guns	2	4	4	4	2
100 guns	5	5	5	5	3
90-98 guns	21	20	21	18	8
80 guns	3	6	12	12	5
74 guns	70	84	92	91	97
64 guns	40	42	44	44	1
50 guns	20	23	18	24	10
44 guns	21	21	20	20	3
40 guns	1	4	7	7	8
36-38 guns	28	57	79	88	111
32 guns	53	60	56	61	12
Smaller vessels	234	205	266	462	380

The men manning the ships were as varied as the ships they sailed on. Every nation, to some extent, and some trouble manning their fleets, and training their crews. How each nation handled this problem largely determined how efficient their navies were.

The British, having the world's largest navy, suffered severe problems in manning their numerous ships. Although blessed with an efficient cadre of well-trained officers and petty officers, and possessing a large reservoir of trained seamen from the fishing and merchant fleets, the British were still forced to rely on press gangs and the sweepings from the gaols for a large proportion of their crews. The British command of the seas permitted their efficient cadres to work on this unlikely material, and constant drill and practice produced a high level of efficiency on most British ships.

The French problem was a good deal different. The French officer corps, which had been drawn largely from aristocratic families, was effectively purged on its most experienced men by the rigors of the French Revolution. The navy was also in constant competition with the army for available manpower. What officers and men were aboard their ships spent most of their time blockaded in the various ports, and thus were denied valuable sea experience and training. What trained officers and men were available were often seconded to army units, and ended up campaigning in Europe as Napoleon's demands for cannon fodder grew. As the poorly trained French lost battle after battle to better drilled British crews, the French confidence and morale also sank.

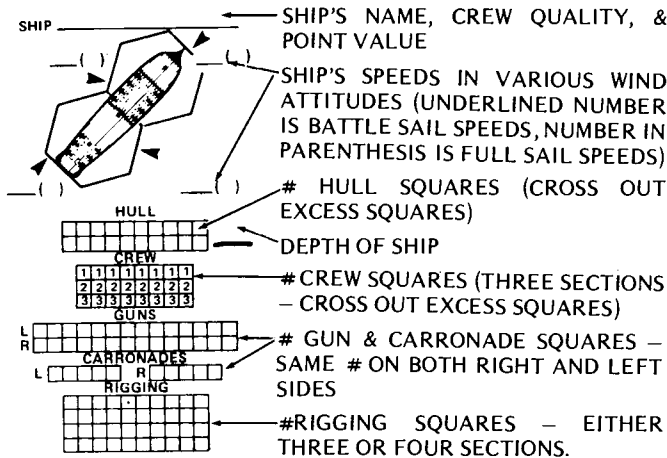
The Spanish problem was similar to the French one, although their officer corps had not been purged. Similarly blockaded in their ports, the nearly bankrupt Spanish monarchy could not even afford to keep an efficient cadre on board their ships. Spanish naval officers, despite their high standards and traditions, were forced to fight with hundreds of raw crewmen aboard who had been pressed into service only hours before sailing.

The problems of the United States Navy were comparatively minor due to the small size of the fleet. Pay in the navy was higher than in the merchant marine, enlistment periods were short, the food was the best in any navy, and the discipline was very moderate for the day. These factors enabled captains to pick and choose from among a surplus of volunteers. Not being involved in the general European war, the Americans were also blessed with great amounts of sea experience and drill.

Designing this game was largely a matter of breaking down the major aspects of the era of sailing warships into component parts, and then developing simple and playable rules to describe them. The development of Wooden Ships and Iron Men has stretched over eight years now, with many thousands of hours spent researching the period, and many hundreds of games being actually played to refine the rules down to their present form. I hope that playing this game is as enjoyable for you as designing and developing it was for me.

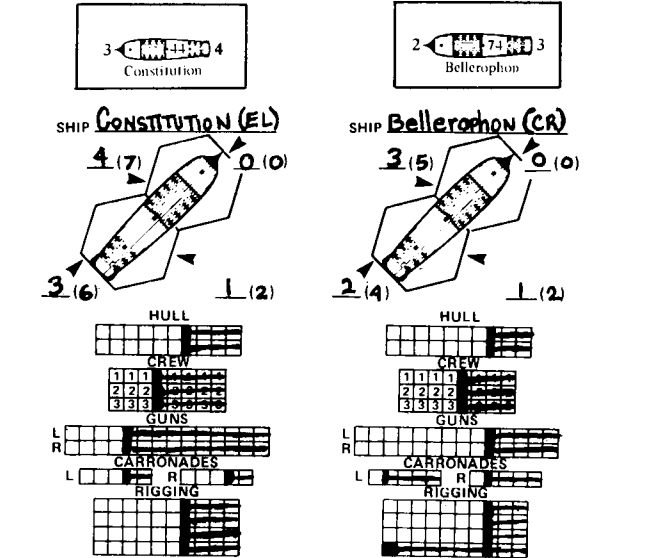
THE HIT RECORD AND LOG SHEET

The Hit Record and Log Sheet contains room for entering all essential information for from one to six ships per side. Each ship's column is prepared for play as follows, using information provided on the ship counter, and in the ship's information given in the scenario:



Below, two sample sheets are shown filled out, along with the information that was used to fill them out.

12H-(3-3)M-4(3)G-6R(4)-7-19'-23(EL) 14H-(4-4)M-9(1)G-7R(3)-5-21'-28(CR)



The Log is used by the player to record the movement of the ships under his command, the loading and firing of the guns, boarding parties, etc. A system of conventions and shorthand is used in making entries in the Log. All players must learn and use this system; so that any other player examining it could read and interpret the entries. There is a list of abbreviations on each Hit Record and Log Sheet.

INTRODUCTORY GAME

This game is played using the Full Sails and Types of Ammo Options. The introductory game begins on move eight. After entering the game board the ships have moved into their present hexes.

TURN #8 Constellation: Hex number 3120, moving in direction 6. Vengeance: Hex number 2723 moving in direction 1. Wind blowing in direction 6.

The ships are now in a position where normally both may fire. However, the Vengeance is loaded with Chain Shot which has a maximum range of only three hexes. The Constellation may fire because she is loaded with ball shot at a five hex range. The Constellation has three guns which, when cross indexed with the range on the Range Tables, gives a Basic Hit Table of -2 (minus 2); however, she has an elite crew (+1 Basic Hit Table) and it is her initial broadside (+1 Basic Hit Table) bringing the final Basic Hit Table to a table '0'. The Constellation fires at the Vengeance's hull; the die is rolled resulting in a five which indicates on Table 'O' of the Hull Effects Table that the Vengeance receives one hull hit which is crossed off on the ship's Hit Record. Constellation reloads with ball shot.

TURN #9 Constellation: Turn left, move three, turn right. Vengeance: Turn left (did not use full movement allowance).

This is the second consecutive turn that the vengeance has remained in the same hex. Consequently she now drifts one hex in the direction that the wind is blowing.

Constellation firing at the hull from a range of two receives a final Basic Hit Table of '2' (3 guns range of 2 = Table '1' plus elite crew +1 = Table 2) Die roll of 4 results in two hull hits on the vengeance.

Vengeance fires BHT of Table '2' (3 guns of 2 carronades for a total of five guns at a range of two hexes). The Vengeance is firing on initial broadside (+1 BHT) and is also firing Chain Shot (+1 BHT) which gives a final Basic Hit Table of '+4'. She aims at the rigging and a three is rolled scoring three rigging and one gun hit (3RG). However, chain shot is ineffective against gun or hull sections and the G (gun) hit called for is disregarded as a miss. Since the Constellation is under Full Sails all rigging hits are doubled giving a final result of 6 rigging hits which takes out one complete section of rigging on the Constellation causing her to lose her Full Sail status as well as to reduce her speed by '1' movement factor in all wind attitudes. Both ships reload with ball shot.

TURN #10 Constellation (present position: hex 2822 dir. 6) moves two and stops (ends in hex 2621 dir. 6). The Vengeance (present position: hex 2623 dir. 6) moves – Left turn, move two and stops (ends in hex 2424 dir. 5).

Constellation is now in a position to "Rake" since the play of Vengeance's guns does not allow her to return fire. Constellation fires three guns at hull from range 3 giving a table '0'; elite crew adds +1 BHT and a Rake adds another +1 giving a final result of table '2'. Die roll of two results in one gun hit (G). The Vengeance's Commander chooses to mark off a carronade on her starbord side.

TURN #11 Constellation moves: Left turn; one hex ending her move in hex 2521 dir. 5. Vengeance moves: Right turn, move once, right turn move on ending her move in hex 2322 dir. 1.

Vengeance fires from range of two hexes and obtains a BHT of '2', she is raking the Constellation adding another +2 giving a final result of BHT '4'. Firing at the hull a die roll of one results in a HGM (one hull, one gun, one crew).

TURN #12 Constellation turns to the left and stops. Vengeance moves one hex and stops.

Constellation now fires three guns from a range of two giving a BHT of '1' – plus she adds +1 for an elite crew and since the starboard broadside is firing for the first time in the game it receives another +1 for an initial broadside. A three is rolled calling for 'H-G-M'. Vengeance fires on BHT '2' with no modifiers a one is rolled causing a 'H' hit on the Constellation.

TURN #13 Constellations turns to the left and stops remaining in her 2521 dir. 3. Vengeance turns right and moves two. However, since hex movement would cause her bow to ram the Constellation's stern she must stop at the hex of contact. Hex 2321.

The fouling tables are now checked and a die is rolled resulting in a roll of two which indicates that the ships are fouled.

The Vengeance sends her entire crew (sections 1, 2 and 3) to board the Constellation (BP). The Constellation sends sections 1 and 2 for boarding while section three remains to fire broadside.

Firing comes before Melee. Constellation fires three guns from a range of 1 (BHT '1') plus +1 for elite crew; +1 for Rake for a BHT of 3 which is reduced by -1 for each crew section absent (i.e. two sections missing = -2) which gives a final BHT of '1'. A five is rolled resulting in a hit of 'H-M'. The crew square is marked off prior to the Melee portion of the turn and may not be used in the boarding action.

The Vengeance has sent a total of eight crew squares to the boarding action. The Combat Factor Table shows that each square of Average Crew is worth 3 (three combat factors) (3 combat factors x eight average crew squares equals a total of 24 combat factors). The Constellation has sent a total of four elite crew squares and the Combat Factor Table indicates that each elite crew square is worth 5 combat factors giving a total of 20 combat factors.

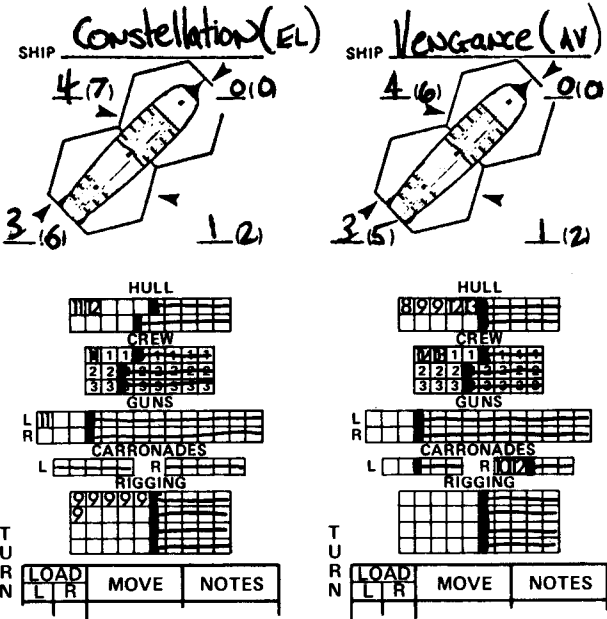
The Vengeance boarding party of 24 Combat Factors is compared to the Melee Resolution Table (MRT) and a die is rolled resulting in a roll three which, when cross indexed with the 24 factor column of the table indicates that the Constellation loses '1' crew square.

The Constellation matches its 20 factors to the MRT and rolls the die. A two is rolled calling for a crew loss of 1 crew square from the Vengeance.

Boarding action continues until one side has a three to one advantage in combat factors or until ships become unfouled.

CREDITS

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Hits are marked by the turn number in which they occurred.

