

The War at Sea 1939-45

Wargaming rules for WW2 Naval battles



David Child-Dennis © 2006
davidchild@ubernet.co.nz

Introduction

This set of rules has been developed to give a reasonably historical result for a large fleet action in about three hours of playing time

During WW2, there were few actions involving classical fleet battles as had occurred in WW1. Where the possibility did exist, there seems to have been a lack of political will to do so. This has made true comparisons very difficult. However, there were several landmark developments that can assist us. Japan's 1925 Tosa experiments caused a major rethink about the type and placement of armour protection on capital ships. Greater emphasis began to be put on torpedo protection and anti-flooding measures. By 1930, it suddenly became obvious to the major naval powers their WW1 fleets had become dangerously obsolete. The 1935 Washington Naval Treaty limiting the tonnage of new capital ships resulted in Britain, Germany and to a lesser extent Japan designing capital ships light on protection and gun power. The 'pocket battleship' *Deutschland* is a well-known example. With 11-inch guns and an armour base of 4 inches, she was only suitable for convoy raiding. The British *King George V* class suffered from the same design limitations. 14" guns and smaller engines were incorporated into the design to reduce overall tonnage. This made them slow fuel guzzlers without the punch of their American counterparts. The *Rodney* and *Nelson* had their stern section literally redesigned out of existence in order to accommodate the provisions of the treaty. Essentially, European and Japanese capital ship design became a matter of political expedience, rather than military requirement.



Yamato explodes after receiving 12 bomb
and 7 torpedo hits from over 450 US aircraft

The entry of air power into the naval battle was a long and protracted event. By 1930, naval aviation had been firmly established in the major fleets of the world, due largely to the availability of reliable engines and a whole new group of light weight metals called duraluminium. When Billy Mitchell demonstrated in 1921 and 1923 that battleships could be sunk by aerial bombing another major re-think of ship design was forced on the naval architects and planners. By 1944, the American battleship had been relegated from a primary position in the fleet, to that of a floating AA battery to protect the aircraft carriers. Those nations lacking a naval airforce were forced to operate within the protection of land-based airforces.

Radar also changed the face of the naval engagement. It not only provided gunnery direction and ranging, especially in bad weather or at night, it also provided long-range aircraft detection, essential for a credible AA defense. In the 1943 campaign against the German U-Boat offensive, it was decisive.

All of the above factors need to be taken into account, if a realistic set of rules is to be designed. Two very important historical events need to be possible in any naval rule set.

- (a) The loss of a capital ship on the first exchange of gunnery. (HMS Hood in 1941)
- (b) The survival of badly damaged ships against what appear to be impossible odds. (IJN Mogami at Midway in 1942).



IJN heavy cruiser Mogami severely damaged after being attacked by aircraft from USS Hornet and USS Enterprise based on Midway Island. Somehow the crew managed to keep her afloat and return to Japan where she was repaired and returned to service.

Many early rule sets attempted to follow the "Fletcher Platt" accounting system for recording damage. That is they set a numerical value for a vessel and when that is lost it is considered sunk. In addition specific damage to various areas of the ship are assigned as damage is taken. I believe this method is now obsolete. During the period this type of system was introduced, naval secrecy prevented the cause of ship losses being specifically identified. It has only been since the end of the '50 year rule' in England that the cause of major wartime naval losses have been revealed in some detail. The important part of these revelations has been the assessment of the likelihood for a particular system design to fail under attack. Thus it was revealed the Prince of Wales was primarily lost because her vital electrical supply systems, powering the AA turrets amidships, were too vulnerable. They should have been more centrally situated, buried deeper in the ship and cross-linked. Such a cause of loss was not uncommon in many navies and I have therefore concluded rather than recording a specific weapon or propulsion failure, it is more realistic to have a reduction in overall efficiencies. Thus damage counters progressively reduce speed, gunnery and torpedo fire, simultaneously. Where there is a possibility of catastrophic loss, I have used the device of any double rolled with two dice during the gunnery damage roll. Play testing has shown this system results in historically valid results.

The Anti-submarine system is an abstract system, in that players are not required to laboriously move submerged submarines in an effort to gain position for an attack. The submarine comes into play automatically, but so does the ASW defense, thus there is a balance between attacker and defender. Play testing shows the submarine to be dangerous, but rarely decisive.

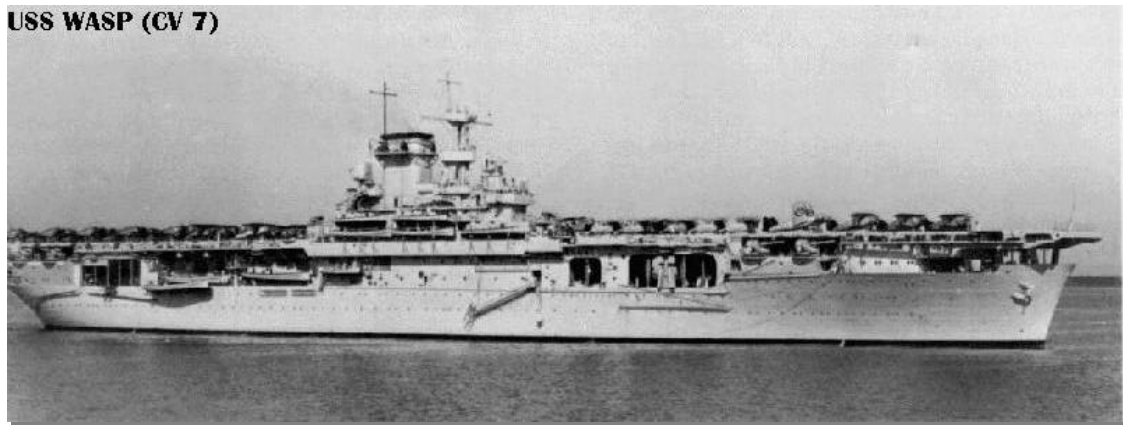
By 1942, aircraft began to dominate the outcome of all major naval battles. While the European theatre still relied on the heavy fleet units, supported by land based airpower, the Pacific required the use of aircraft carriers in substantial numbers to prosecute the war aims of the combatants. Aircraft carriers have an air group of several squadrons assigned to them, each squadron being composed of a number of "divisions" (in US Navy parlance). Each aircraft counter or model represents four actual aircraft – i.e. one "division". Therefore the fighter component of the IJN Hiryu's air group in 1942 consists of four counters (16 A6M2 Zeros plus 2 spare or under repair).

Aircraft left over from the actual air wing strengths should be considered unserviceable or replacements. All combat is between counters not individual aircraft. Losses of counters due to

AA fire or air attack represent the reduction in efficiency by casualties not the total loss of every aircraft represented by the counter. The following example demonstrates the calculation system. The number in () represents the number of counters.

Order of Battle at Santa Cruz Islands – October 1942

<i>Junyo</i>	26(6) A6M Zero	21(5) D3A Val	10(2) B5N Kate
<i>Shokaku</i>	18(4) A6M Zero	20(5) D3A Val	23(5) B5N Kate
<i>Zuiho</i>	18(4) A6M Zero	-	6(1) B5N Kate
<i>Zuikaku</i>	27(6) A6M Zero	27(6) D3A Val	18(4) B5N Kate



<i>Enterprise</i>	34(8) F4F Wildcat	36(9) SBD Dauntless	13(3) TBF Avenger
<i>Hornet</i>	36(9) F4F Wildcat	36(9) SBD Dauntless	16(4) TBF Avenger

It can be seen why the US Navy managed to hold the initiative in the Pacific against the IJN, with fewer carriers.

Night Fighting and reduced visibility (including smoke screens)

All actions at night are shrouded in a degree of confusion. This is especially so when forces become intermixed and dispersed. The first major night action fought between the Japanese and Allied naval forces occurred during the Guadalcanal campaign during August and October 1942. The Allied forces possessed the invaluable advantage of Radar, both air/surface search and gunnery ranging. The Japanese had produced their first air warning sets – with German assistance, but had not as yet fitted them to ships outside Home Waters. The Italians did possess Radar but did not fit it until 1943 at the earliest. The Germans possessed gunnery, surface search and air warning radar as well as radar warning receivers from early in the war.

Not surprisingly, there was a general distrust of this new device among the senior commanders of all navies at that time. It was not unlike the older generation of a few years ago when they were first confronted with computers. Like computers at the time of their introduction, radar was seen as something unfamiliar, unreliable and forever requiring attention. This was to have important

consequences for U.S naval forces during the opening phases of the Guadalcanal Campaign in August 1942.

The early radar sets required considerable skill to maintain and operate. However, they did give two very important sets of data to the user. They were capable of accurately measuring target course and speed that gave gunnery and torpedo firing solutions greater accuracy in poor weather or at night. Secondly, they gave range takers the ability to accurately gauge the distance of overshoots when applying a ladder pattern to main battery ranging. Formerly, correcting overshooting was a time consuming business that could result in deadly delays. During the Second Battle of Savo Island, - on the night of 14/15th November 1942 - *USS Washington* recorded hits against a large target at 18,000 yards after only the third salvo. *Washington* fired 42 rounds in three minutes, causing near fatal damage to *IJN Kirishima*.

This brings us to the part about confusion....

Even though the Allies possessed radar, they were still unable to identify friend from foe until after the war. Thus ships relied on visually identifying their targets once battle lines had become mixed and the position of enemy ships was no longer accurately known. To represent this problem, players should obtain a number of two different sized coloured discs, (blue for Allied and red for IJN) representing either small or large targets. Once contact has been made the players should place the markers at the relevant position until an accurate visual identification can be achieved. The only problem that remains is friendly forces being wrongly identified as the enemy. This can be simulated by a 1D6 roll for each radar target and if a 5 or 6 is rolled the target is fired on. The US Navy possessed the 'Talk between Ships' system (TBS) that allowed direct voice radio contact between every ship within about 10 miles. This system had the advantage of being able to immediately contact every ship within range, but the disadvantage that once too many callers tried to use the system simultaneously chaos invariably resulted. However, if an Allied player accidentally fires on a friendly vessel, the fire will immediately cease after the first accidental exchange of fire. It can be assumed the TBS system has been used to register the target's displeasure! The Japanese possessed no such system yet appear not to have been plagued by friendly fire incidents among their naval forces. This may be explained by their tactical doctrine of closing to within sighting range of a target before engaging. However, the IJN trained extensively in night fighting techniques, based on Royal Navy doctrine, before the war resulting in excellent night fighting capabilities.

Scales and time

Each game turn is calculated to be about 15 minutes and 1000 yards equals one inch on the game table. This game scale works best with 1:3000 scale models. For larger scales such as 1:2400 or 1:1200, double all measurements. For 1:6000 halve all measurements.

Game Turn Sequence

1. Players dice for initiative, the highest winning, and therefore choosing which player moves and fires first.
2. Both players move all forces, including air and submarine attacks.
3. Resolve all gunnery attacks.
4. Resolve all AA fire, including air-to-air combat.
5. Resolve all air attacks against ships and land targets.
6. Resolve all ASW attacks against submarines.
7. Resolve surface and submarine launched torpedo attacks.
8. Repair damage.

Weather.

Players may either assume clear skies and calm seas or roll 6D6, adding the scores together to obtain the maximum visibility range in inches. A total score of 8 or less should be considered too foggy to proceed to sea in safety. Roll the dice again! Roll 1D6 and ADD +2 to the score to give

the Beaufort scale for wind and sea state reading for the battle. Any sea state over 6 results in only main guns being able to be used. Players will note that it is not possible to get a sea state over 8, which would prevent the fleet putting to sea anyway!

Movement

1. CL, DD, DE move 15 inches. CA, BA, BC 10 inches, CV, IJN CVL move 10 inches. BB, US CVE move 8. All transport and fleet train vessels move 6 inches per game turn.
2. If turning up to 45° , reduce movement rate by 1 inch.
3. If turning up to 90° , reduce movement by 2 inches.
4. If turning up to 180° , reduce movement by 3 inches.

Locating the enemy

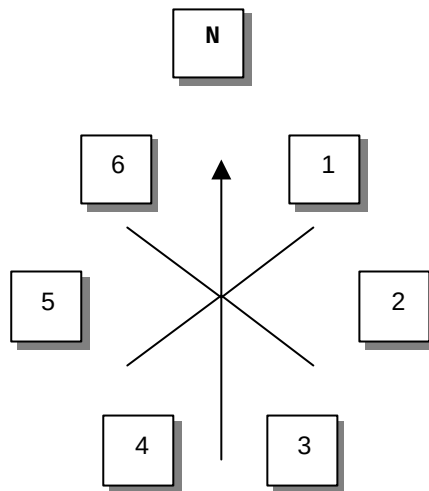
One of the major problems associated to gaming with models as opposed to computers is the problem of abstracting a long-range detection system, so necessary when reconstructing pacific carrier operations. One system that seems to work well is this.

Assume sufficient IJN and USN heavy cruisers and aircraft carriers in the action fly off reconnaissance aircraft. Also assume a 360° radius of search, which while not absolutely accurate, allows for a greater variation in the possible direction of approach between the opposing forces. If desired, allow the Japanese an earlier possibility of detection than the US because of greater aircraft range. However, don't allow a significant difference in strike range between the two, given the closing speeds of ships and aircraft often negated the early IJN range advantage. It requires a "6" on each D6 to locate a group of enemy ships. The first location attempt is 1D6; the second is 2D6, with each attempt thereafter adding 1D6 to the number of dice rolled.

Players determine the angle of approach of their forces in relation to each other using the above sector system. In order to detect an enemy force, the opposing player must roll the correct number for the sector that represents the correct direction of approach. Each player can either select a number as being the direction they chose to approach from or the dice roll determines which direction. The arrowhead represents a compass heading of north and players should determine the sector their forces occupy based on the arrowhead facing a constant northern alignment

The number of turns it takes to locate the enemy force represents the range it is from the attacker. Each turn represents 50 miles. The maximum strike range for the USN is 200 miles. The IJN is 300 miles. Therefore it will be usual for fleets to be located beyond attack range as was historically correct.

Locating the target



Reconnaissance and air raid track – once target has been located.

Once the correct direction of approach by the enemy has been determined, it is then necessary to determine at what range they were detected. This is achieved by both players rolling a series of dice, starting with a range of 330 miles. This represents the longest practical range at which an air strike could be conducted. Both players roll 1D6. If either scores a '6' they have succeeded in locating the enemy force at 330 miles from the locating forces' present position. If there are separate forces attempting to locate the same target, each force must make a separate dice roll.

Once the first player rolls the required '6' it fixes the range at which the two forces are separated. The second player continues to roll until they also achieve the required '6'. The number of dice rolls it takes the second locating player to roll a '6' is the number of game turns delay between the launching of that players' air attack against the target, in relation to the first player.

Example:

The first player rolls a '6' on first attempt. He locates the target at 330 miles and fixes the distance between the opposing forces at 330 miles. This requires 12 game turns (about 3 hours real time) to assemble a raid and arrive at the target. The second player fails to roll the required '6' on any dice rolls until he rolls 6D6. This means that he is six game turns behind the first player in launching his attack against the opposing player.

Both players assemble and launch their raids and follow the raid track from launch to 330 miles (12 game turns each) with the second player starting down the raid track six moves after the first.

AIR RAID TRACK – each square takes 1 game turn to

Assembly	30 miles	60 miles	90 miles	120 miles	150 miles
12D6	11D6	10D6	9D6	8D6	7D6
180 miles	210 miles	240 miles	270 miles	300 miles	330 miles
6D6	5D6	4D6	3D6	2D6	1D6

Target Engagement Priority

Targets should be engaged that have fired on the firer first. This is especially true when fighting night actions and target spotting relied heavily on enemy gun flashes and searchlights in use. Ships under ship launched torpedo attack must always attempt to engage such enemy vessels before any other target. The only exception to this rule is where the target is out of range or obscured.

Night Fighting or fighting in snow, fog or heavy rain

Both the Japanese and British excelled at night fighting. The other navies either relied heavily on technology or preferred not to fight at night. In order to give a reasonable approximation, those navies equipped with surface search radar will locate all targets at around 15 miles (30,000 yards), in open waters. All other navies will visually detect the enemy at around 12,000 yards. Once firing is commenced, all firers are automatically located. Running torpedoes cannot be detected at night. To give a variation in visibility ranges, I suggest players roll 2D6 each adding the results together to give a visibility in inches. All basic gunnery is reduced to half the D6 shown.

The Gunnery System

Gunnery is divided into main, secondary and AA battery fire for each ship, which is usually assumed to be firing broadsides at its targets. Secondary batteries can engage targets with their full weight of fire to each side. The player nominates which battery is to fire, consults the table for the appropriate caliber weapon and cross references the range scale to give the number of D6 rolls in the broadside. Sometimes a full broadside is not possible if the target is being engaged by the main battery outside the "broadside arc", reduce the number of dice by half.

A hit against a target ship is achieved if a player rolls a six with any of the firing dice. Damage is inflicted by rolling a second single dice for each hit scored and assigning the number rolled as damage against the target.

Gunnery table – roll the number of dice indicated					
Range (in inches) up to		36"	24"	18"	12"
DICE NUMBERS					
Weapon	18"	3	3	4	5
	15/16"	2	3	5	6
	14"	1	2	4	6
	12/11"	1	1	5	7
	8"	-	2	6	8
	6-5.9"	-	1	4	8
	5.25-4.5"	-	-	4	8
	3.7"	-	-	2	8

Modifiers

Halve all dice numbers when firing at night or in fog, snow or heavy rain.

+1D6 for gunnery radar firing at night, fog, snow or heavy rain.

+1D6 for main batteries 9 guns or more

+1D6 if target stopped in the water.

-1D6 for main batteries with less than 8 guns

Example:

A heavy cruiser with a main battery of 9 guns (8" guns) engages a ship at 18 inches range, and thus rolls four D6's plus 1D6 for the 9 gun battery for a total of fiveD6. If one "six" is rolled, it gives one hit on the target. A second dice is immediately rolled to see how many 'damages' this hit inflicts. A "three" is rolled with a single D6, which causes the target three damages. If no damages are removed during the repair phase, the target is left with three damages, which will affect its speed and combat capability during the next game turn. This is best achieved using a dice with the number of hits placed next to the target.

Heavy Caliber gun damage to ship targets

When a DE/DD, CL or CVE is hit by a gun of 8" caliber or larger, the possibility of severe damage exists. This is reflected by the number of damages being increased by one extra D6 roll, regardless of the number of 'hits' scored against the target, when assessing the number of damages inflicted on the target.

All hits (NOT damages) by 8 inch guns or larger against any ship, allows the firer to make a 'sink test' by rolling any double with 2D6. Guns 6 inches or smaller, may do the same against MTB, DE, DD, CL or auxiliary ship targets only

Damage Effects

Each 'damage' remaining after the repair cycle (step 8) reduces the damaged ship's speed by 1 inch and all gunnery, AA and torpedo factors by 1D6 for each retained damage. Ships that reach their maximum damage capacity are deemed to either have sunk or become abandoned hulks. Older ships should have their damage capacity reduced by 1, unless modernized before WW2-

The easiest way of recording damage to a target is to place a dice beside the model, with the appropriate number of damages displayed. But players are free to choose any damage indicator they wish provided it gives their opponent a clear view of how much damage the target has sustained.

Repairing Damage

After all damage has been recorded, players may attempt to repair damage in Step 8 by rolling one dice for each damaged ship and reducing the total number of damages by that dice roll. If the target still exceeds the number of damage points allowed, after a damage control dice roll is made, the vessel is lost and is immediately removed from the game.

Vessel type	Maximum damage capacity
Submarine	1
Transport vessel	4
DE/DD	6
CL/CVE	8
CA/CV/BC	10
BB	11
BA	12
Yamato and Musashi	13

Gunfire and Bomb Damage - Land Targets

Each land target is allocated a number of irreparable damage points at the beginning of the game. Once those damage points are reached, the land target is destroyed. Each hit results in a damage counter being added to the target.

Morale

Ships that become damaged must test to see if they remain in the battle line or they attempt to withdraw. Once a ship retains at least $\frac{1}{2}$ of its total allowable damage points, it must be tested to see if it remains in the battle. Roll 2D6. The total of the two dice are added together and this must equal or exceed the number of retained damages the ship has at the end of that game turn. The morale test is taken after damage repair dice rolls have been taken.

Torpedo Attack – Surface and submarine

Torpedo salvos are fired using 4D6 and adjusted for the following conditions.

Maximum torpedo range is 10 inches for Allied and German, 13 inches for Japanese Long Lance.

-1D6 if target is beam on to firer (270^0 or less)

-2D6 if target is dead astern or bow on to firer (over 270^0)

-2D6 if target over half maximum range or firing at night

+1D6 if target is stopped in the water or moving at less than $\frac{1}{3}^{\text{rd}}$ maximum speed.

ASW Warfare

When a submarine launches an attack, the submarine is placed anywhere within attack range of the intended target and the target declared. Any DD/DE or ASW vessel within 6 inches of the attacking submarine may conduct an ASW attack BEFORE the submarine attacks. All ASW attackers roll 1D6, the submarine rolls 1D6 for each of the ASW attacker's dice. If the ASW dice rolls equal or beat the submarine dice roll, the submarine is considered to have been driven off, and may make another attack later in the game. If any of the ASW dice rolls are a "6", the submarine has been sunk. If the submarine dice roll exceeds the ASW dice rolls, the submarine evades the ASW screen and presses home the attack.

Submarine torpedo attack

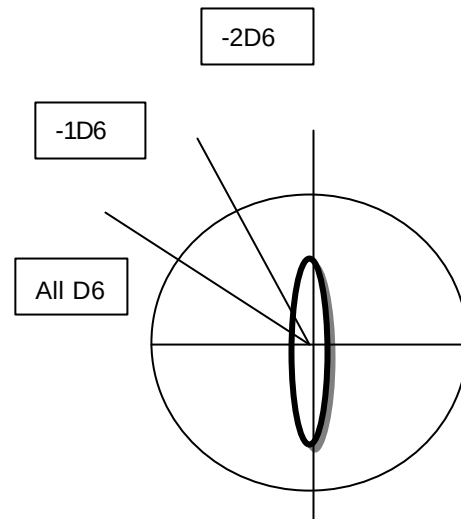
The submarine owner rolls 4D6 against the target vessel minus any adjustments for range and target angle. The target owner rolls the same number of dice. The highest dice roll wins inflicting 1D6 damage points for each hit.

Torpedo attack angle template.

MTB and Aircraft Torpedo Attacks

All MTB's have an attack value of 2D6 per salvo.

All aircraft launch their torpedoes 1inch from the target.



Torpedo Damage.

All torpedo hits score 1D6 number of damages against the target.

All torpedo hits (NOT damages) require an immediate 'sink test' of any double rolled with 2D6.

Air launched torpedo attacks

Each attacking bomber or torpedo counter rolls 4D6 as does the target ship. This 'roll off' represents the target's ability to out maneuver the attacker torpedoes. All aircraft launch their torpedoes 1 inch from the target. For each hit roll a further 1D6 to represent the number of damages inflicted on a ship target. The following modifiers apply to all torpedo attacks:

Maximum air launched torpedo range is 6 inches

MBT Torpedo Attacks

MBT Torpedo salvos are fired using **2D6 (they have no reloads)** and use the same modifiers as air launched torpedo attacks (above). Maximum torpedo range is 6 inches for Allied and German, 8 inches for Japanese Long Lance.

ASW Warfare

When a submarine launches an attack, the submarine is placed anywhere within attack range of the intended target and the target declared. Any DD/DE or ASW vessel within 6 inches of the attacking submarine may conduct an ASW attack BEFORE the submarine attacks. All ASW attackers roll 1D6, the submarine rolls 1D6 for each of the ASW attacker's dice. If the ASW dice rolls equal or beat the submarine dice roll, the submarine is considered to have been driven off, and may make another attack later in the game. If any of the ASW dice rolls are a "6", the submarine has been sunk. If the submarine dice roll exceeds the ASW dice rolls, the submarine evades the ASW screen and presses home the attack.

Submarine torpedo attack

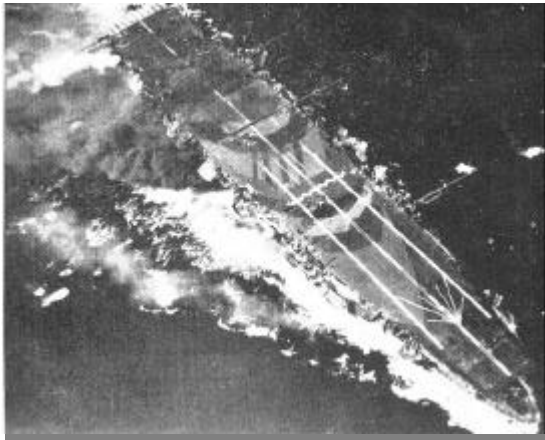
The submarine owner rolls 4D6 against the target vessel minus any adjustments for range and target angle. The target owner rolls the same number of dice. The highest dice roll wins inflicting 1D6 damage points for each hit

Game turn track: Air movement beyond visual range.

Each game turn is 15 minutes real time. Four game turns to the hour. Ships advance at the rate of 5 nautical miles per game turn, aircraft at 30 miles per game turn. Calculate map movement scales as being 1mm equals 10 nautical miles or 50 mm equals 500 miles or 24 hours sailing distance.

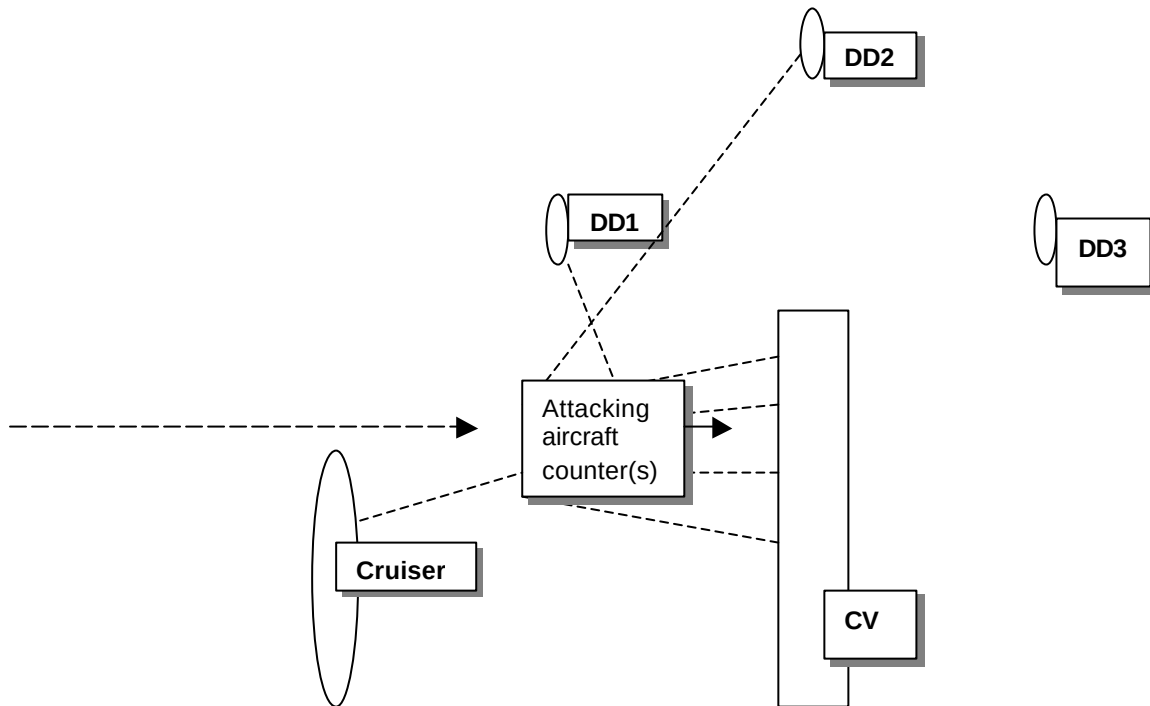
Aircraft movement calculation boxes.

Use the Air Raid Track calculation sheet (at the end of the rules) to calculate the difference in timing between take off time and when the aircraft arrive over the target. This is important when two opposing forces locate each other at different times.



IJN light carrier Zuiho under attack in the Leyte Gulf campaign where she was sunk by US Navy aircraft 25th October 1944. As part of Admiral Ozawa's 'bait force' she was sacrificed to ensure the US 3rd Fleet remained far enough to the north from the Leyte Gulf landing sites to be unable to offer air support to the marine landing forces.

Air Attack diagram



All AA fire is assessed at the point where the attacking aircraft marker is placed against the target ship. In this example the cruiser, DD1, DD2 and CV add their fire as aircraft reaches the attack position. DD3 does not engage the attacking aircraft because its line of fire is obscured by the carrier. However, it may be held in reserve against an attack from the opposite direction. All AA fire dice rolls occur only once in each attack sequence. All attacking aircraft counters are placed against the target ship and all AA fire is adjudicated before any air attacks take place.

Air Combat

Four actual aircraft are represented by a single counter or a single model. Combat occurs when the moving player places his aircraft counter(s) in base-to-base contact with an enemy aircraft counter. Air combat is a dice roll off between players. Each player rolls 1D6 per counter. An adjusted score of "6" eliminates the enemy air counter. If the adjusted score is '5', then the counter is driven off and immediately returns to its base or carrier. If the attacking aircraft counter is not eliminated it presses home its attack. Bombers may not attack fighters or bombers.

Example: 1 TBM counter is opposed by 1 A6M5 Zero counter.

TBM = 2, A6M5 = 4 therefore $4 - 2 = 2$. Therefore required kill score of '6' is reduced by '2' to '4'. A 1D6 roll of 4 or better ($6 - 2 = 4$) by the Japanese player eliminates the US player's TBM counter. However, if the Japanese player rolls a '3' or less, the TBM immediately withdraws to its base or carrier but is not eliminated from the game.

Aircraft Combat Factors - (Number of dice for each naval aircraft counter)

Allied Aircraft

F2A Buffalo = 2	F4U Corsair = 4	TBM/TBF = 1
F4F Wildcat = 3	Seafire = 4	SBD/TBD = 1
F6F Hellcat = 5	Sea Hurricane = 3	B17E/F = 3
Firefly = 3		A-26 Bomber = 1 (US Army attack)

Japanese Aircraft

A5M Claude = 2	A6M2 Zero (1941-43) = 3	VAL/Kate = 1
	A6M5c Zero (1943-45) = 4	Mitsubishi Betty = 1

The AA System

Each ship has an AA factor that represents the number of D6 rolled against an attacking air counter. Each air counter represents four actual aircraft, which is represented by one model or counter on the table. All AA fire takes place before an air attack, with the exception of wire guided air launched bombs such as the HS293 or the U.S Navy BAT. These weapons have a range of 12 inches and a 2D6 attack factor.

The X4000, although guided, was a free fall weapon and as such does not have a stand off range.

AA Fire Factor by year. For more detailed ship statistics – refer to the data tables

AA Factor by year	1939-40	1941	1942	1943	1944-45
Fleet Auxiliary	1	1	1	1	1
DD/DE	1	1	1	1	1
CL – CVL	1	1	1	2	2
CL – AA	-	2	3	2	2
CA	1	1	2	2	3
BC	2	2	2	3	4
BB – BA	1	2	2	3	4
CVE	1	2	2	2	3

Air attack sequence and resolving bomb attacks

Attacking aircraft counters are placed beside the intended target during step 2 of the game turn. During Step 4, where all AA fire is resolved, the defender may engage all attacking aircraft counters with any vessel up to 6 inches from the target. Each defender rolls the number of D6 indicated by their AA factor on the appropriate table. For each “6” rolled, 1 aircraft counter is removed. For the purposes of game simplicity, all aircraft represented by the counter are lost. All remaining aircraft counters press home their attack: each surviving attacking air counter rolls 4D6 and any “6” scores 1 hit on the target. For each hit roll a further 1D6 and this represents the number of damages inflicted on a ship target.

Fighters attacking ships

It was generally recognized that fighters attacking large warships was a suicide mission and a waste of resources. Fighters may attack ships on the same turn that aerial torpedo or bombing attacks are being made in an effort to suppress the ship's AA defenses and enhance the bombers' chances of survival. Fighter attacks DD/DE and CL (but not CLAA) compel those ships to use their AA factors in their own defense; fighter attacks on CLAA and heavier ships compel those ships to assign half of their AA factors in their own defense. The remaining AA factors may shoot at hostile aircraft attacking any ship with 6 inches to defend themselves part on a general

Appendix 1: Carrier statistics

US Fleet carriers

	December 1941	August 1942	June 1944	October 1944	December 1944
Fighters	18	36	36	54	73
Dive Bombers	36	36	36	24	15
Torpedo Bomber	18	15	18	18	15

US Light carriers

	Fighters	Bombers
Langley	25F6F	2-TBF Avengers, 7-TBM Avengers
Princeton	24F6F	8TBM Avengers

British Carriers – March 1945

	Fighters	Bombers
Illustrious	36 Corsairs	16 Avengers
Indefatigable	40 Seafires, 9 Fireflies	20 Avengers
Indomitable	29 Hellcats	15 Avengers
Victorious	37 Hellcats	14 Avengers

Appendix 2: Selected Orders of Battle

Japanese Attack Groups – Pearl Harbour - 7th December 1941

	Fighters	Dive Bombers	Torpedo Bombers
Akagi	21 A6M Zero	18 D3A Val	27 B5N Kate
Kaga	21 A6M Zero	27 D3A Val	27 B5N Kate
Hiryu	18 A6M Zero	18 D3A Val	18 B5N Kate
Hosho	11 A5M Claude	-	8 B5N Kate
Zuiho	16 A5M Claude	-	12 B5N Kate
Ryujo	16 A5M Claude	-	18 B5N Kate

Battle of the Coral Sea – 4th May 1942

	Fighters	Dive Bombers	Torpedo Bombers
Shoho	12 A6M Zero	-	9 B5N Kate
Shokaku	21 A6M Zero	21 D3A Val	21 B5N Kate
Zuikaku	21 A6M Zero	21 D3A Val	21 B5N Kate
Lexington	23 F4F Wildcat	36 SBD Dauntless	12 TBD Devastator
Yorktown	21 F4F Wildcat	38 SBD Dauntless	13 TBD Devastator

Battle of Midway – 30th May 1942

	Fighters	Dive Bombers	Torpedo Bombers
Akagi	18 A6M Zero	18 D3A Val	18 B5N Kate
Kaga	18 A6M Zero	18 D3A Val	27 B5N Kate
Hiryu	18 A6M Zero	18 D3A Val	18 B5N Kate
Soryu	18 A6M Zero	18 D3A Val	18 B5N Kate
Enterprise	27 F4F Wildcat	38 SBD Dauntless	14 TBD Devastator
Hornet	27 F4F Wildcat	37 SBD Dauntless	15 TBD Devastator
Yorktown	25 F4F Wildcat	37 SBD Dauntless	13 TBD Devastator

Battle of Guadalcanal – August-September 1942

Enterprise	36 F4F Wildcat	36 SBD Dauntless	15 TBF Avenger
Saratoga	34 F4F Wildcat	37 SBD Dauntless	16 TBF Avenger
Wasp	29 F4F Wildcat	30 SBD Dauntless	10 TBF Avenger

Battle of East Solomon Sea – August 1942

Enterprise	36 F4F Wildcat	37 SBD Dauntless	15 TBF Avenger
Saratoga	36 F4F Wildcat	37 SBD Dauntless	15 TBF Avenger
Wasp	29 F4F Wildcat	36 SBD Dauntless	15 TBF Avenger

Ryujo	16 A6M Zero	-	21 B5N Kate
Shokaku	26 A6M Zero	14 D3A Val	18 B5N Kate
Zuikaku	27 A6M Zero	27 D3A Val	18 B5N Kate

Battle of Santa Cruz Islands – October 1942

Junyo	26 A6M Zero	21 D3A Val	10 B5N Kate
Shokaku	18 A6M Zero	20 D3A Val	23 B5N Kate
Zuiho	18 A6M Zero	-	6 B5N Kate
Zuikaku	27 A6M Zero	27 D3A Val	18 B5N Kate

Enterprise	34 F4F Wildcat	36 SBD Dauntless	13 TBF Avenger
Hornet	36 F4F Wildcat	36 SBD Dauntless	16 TBF Avenger

Battle of the Philippine Sea – June 1944

I.J.N The Mobile Fleet – Van Force – Carrier Division 3

CVL Chitose	)62 A6M Zero
CVL Chiyoda	)9 B6N Jill Torpedo Bombers
CVL Zuiho	)17 B5N Kate Torpedo Bombers

BB Yamato, BB Musashi, BC Kongo, BC Haruna
CA Atago, CA Maya, CA Tone, CA Chikuma, CA Chokai, CA Kumano, CA Suzuya
CL Noshiro
 9 DD screen

“A” Force Carrier Division 1

CV Taiho	)79 A6M Zeros
CV Zuikaku	)70 D4Y Judy Dive Bombers, 7 D3A Val Dive Bombers
CV Shokaku	)51 B6N Jill Torpedo Bombers

CA Myoko, CA Haguro
CL Yahagi
 3 DDAA, 6 DD as screen

“B” Force Carrier Division 2

CV Junyo	)81 A6M Zeros
CV Hiyo	)27 D4Y Judy, 9 D3A Val Dive Bombers
CVL Ryuho	)18 B6N Jill Torpedo Bombers

BB Nagato
CA Mogami
 10 DD screen

US Fifth Fleet Task Force 58

Task Group One (TG58.1)

	Fighters	Dive Bombers	Torpedo Bombers
CV12 Hornet	40 F6F Hellcat	33 SB2C Helldiver	20 TBF/M Avengers
CV10 Yorktown	44 F6F Hellcat	31 SB2C Helldiver	18 TBF/M Avengers
CVL Belleau Wood	26 F6F Hellcat		9 TBF/M Avengers
CVL 29 Bataan	24 F6F Hellcat		9 TBM Avengers

CA Boston, CA Canberra, CA Baltimore
CLAA Oakland, CLAA San Juan
 14 DD as screen

Task Group Two (TG 58.2)

	Fighters	Dive Bombers	Torpedo Bombers
CV17 Bunker Hill	41 F6F Hellcat	33 SB2C Helldiver	18 TBF/M Avenger
CV18 Wasp	41 F6F Hellcat	32 SB2C Helldiver	18 TBF/M Avenger
CVL26 Monterey	21 F6F Hellcat		8 TBM Avenger
CVL28 Cabot	24 F6F Hellcat		9 TBF/M Avenger

CL Santa Fee, CL Mobile, CL Biloxi
 12 DD as screen

Task Group Three (TG58.3)

	Fighters	Dive Bombers	Torpedo Bombers
CV6 Enterprise	32 F6F Hellcat	23 SBD Dauntless	15 TBF/M Avenger
CV16 Lexington	42 F6F Hellcat	34 SBD Dauntless	20 TBF/M Avenger
CVL23 Princeton	5 F6F Hellcat	-	9 TBM Avenger
CVL 30 San Jacinto	24 F6F Hellcat	-	8 TBM Avenger

CA Indianapolis
CL Montpellier, CL Cleveland, CL Birmingham
 13 DD as screen

Task Group Four (TG58.4)

	Fighters	Dive Bombers	Torpedo Bombers
CV9 Essex	45 F6F Hellcat	36 SB2C Helldiver	20 TBF/M Avenger
CVL25 Cowpens	26 F6F hellcat	-	9 TBF/M Avenger
CVL27 Langley	25 F6F Hellcat	-	9 TBF/M Avenger

CL Vincennes, CL Miami, CL Houston, CLAA San Diego
 14 DD as screen

Task Group Seven (TG58.7) Battle Line

BB's Washington, North Carolina, Iowa, New Jersey, South Dakota, Alabama, Indiana
CA's Wichita, Minneapolis, New Orleans, San Francisco
 14 DD as screen

The Pacific Campaign

Introduction

To come to any understanding of the complexities or issues involved in this the most momentous naval conflict in the history of mankind, it is essential to grasp the sheer size of the area involved. The Pacific campaign encompassed an area of approximately half the entire globe. In terms of weather zones, it began in the arctic tundra of the Alaskan islands and spread south to the tropical jungles of Borneo. In the East it covered the Hawaiian Islands and from there stretched west until it reached the borders of India.

The southern regions of the Pacific are in general similar in weather to that which one might expect in England or North America. But once the central Pacific is reached there is a complete change. Typhoons, feared by man and beast alike, caused giant winds to burst across land and sea with a fury that has to be experienced to be comprehended. Everything, including war ceases during such events. 60-70 foot waves batter ship and shore in the path of the storm. Even aircraft carriers and battlewagons find such weather difficult and potentially dangerous. Unlike a continental climate similar to that found in Europe or America, the Pacific can change in a matter of hours as weather front after weather front brings quite sudden and dramatic change. Both Japanese and Allied naval forces used weather fronts to obscure their movement where ever possible.

The difficulties of navigation, especially by aircraft across such vast tracts of water without modern navigation aids cannot be understated. The average fighter aircraft of the period did not carry suitable equipment for such long flights. Both New Zealand and Australian airforces had extensive pre-war experience in the Pacific and had learnt that single seat aircraft required a bomber with them to ensure accurate navigation. This became a standard operating practice for all Allied airforces (Navy, Marine and Airforce) in this theatre. It was common for a single Hudson or Ventura light bomber to escort a fighter group to the target and back. Similarly the Japanese airforces sent fighter cover with a bomber group, relying on the bombers to navigate for the fighters.

Ships did not experience the same problem, but they also had their difficulties. The seas of the Pacific had not been well explored or indeed mapped, before the war. Certainly the main shipping routes were well charted, but the war ranged across the whole region into areas that were virtually unknown to any but the locals.

Supply remained a constant problem for both sides during the campaign. The US forces had the longest re-supply route reaching from San Francisco on the US west coast, via Hawaii, through Fiji and on into Auckland or Sydney. Later in the war as the central Pacific was reconquered, the re-supply line ran directly from Hawaii to the various island groups. This explains why the US land forces in the Pacific were significantly smaller than those in Europe. It took approximately four times the logistic effort to support a man in the field in the Pacific Theatre as it did in the European.

With the above in mind, I have constructed a campaign series that covers the major naval battles of the period 1942-45. I have deliberately excluded the early battles between the pre-war colonial powers and Japan on the basis that they were such one sided affairs it is almost pointless wargaming them. This does not suggest they are in anyway insignificant, only in wargaming terms the outcome is an almost mathematical certainty.

Background.

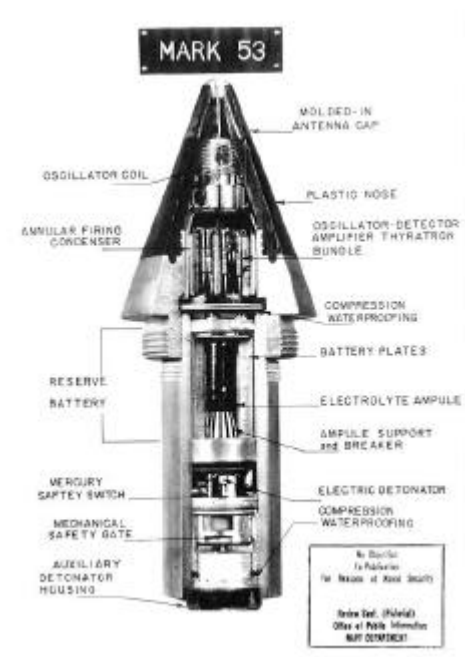
The Japanese had begun the process of modernising their industrial infrastructure soon after the end of WW1. They realised it would require an uninterrupted supply of iron ore, oil and rubber to achieve this. To this end they began by forging close links with South American suppliers of ore and petroleum. However, by 1924, the Americans and British had determined that Japanese industrial expansion would pose a threat to US and British colonial possessions on the Malayan

Peninsula and the Philippines. To this end Plan Orange was formulated. By 1938 that plan had become a blue print for the coming war in the Pacific. At the commencement of the Pacific Campaign, the Japanese naval and air forces were the largest in Asia. Their cruiser and destroyer designs were the most advanced in the world and their 'Long Lance' torpedo soon proved to be the scourge of many naval engagements. The three primary naval aircraft with which Japan entered the war were superior in almost every respect to their western counterparts, having been specifically designed to fight over the vast tracts of the Pacific. However, like all aircraft design, there is compromise in order to achieve design specification. The Japanese decided armour plate and self-sealing tanks were both unnecessary given the agility of their fighters and the weight restrictions imposed on carrier aircraft. The Japanese realised that many battles would be fought at night or in reduced visibility – a common problem in Asia – and trained their navy accordingly. To this end they set about developing binocular and range finder optics specifically designed for low light conditions. This explains their success in night actions during the Guadalcanal campaign.

By the commencement of hostilities in December 1941, Japan possessed the best and most experienced navy in Asia. It was also the equal of any other in the world. The Japanese were pioneers in naval aviation and kept a close watch on both British and American developments. Yet, like their opponents, the Japanese Navy clung to the notion that battleships would prove to be the decisive weapon at sea. It was not until 1943 that this was to change, but by then it was far too late for Japan to correct the balance of their naval construction programme.

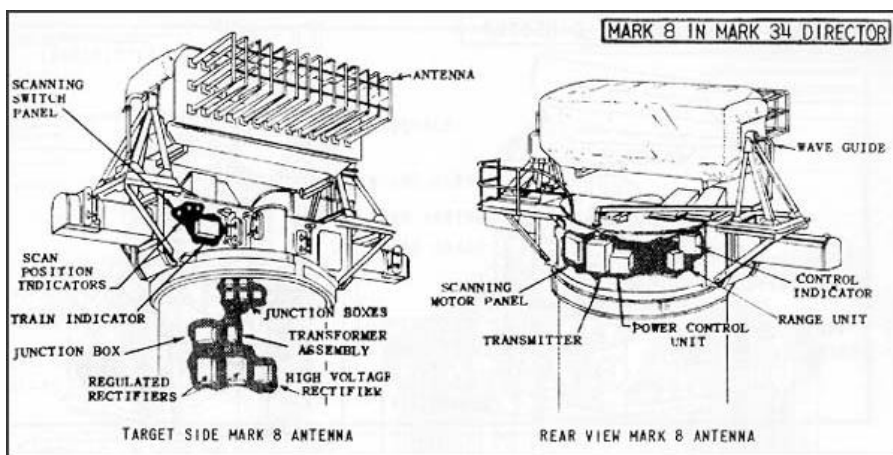
Much has been made of the inferiority of Japanese pilots in the final two years of the war, the lack of training and combat experience being cited as the cause. This is only partially true. As the Allies closed in on Japan they devoted a large part of their resources to strangling the Japanese supply lines. This resulted in serious fuel shortages and a dramatic decline in the quality of aviation gasoline. This decline in quality caused a marked drop in engine performance thus preventing many aircraft from reaching the altitude at which the American B29 operated and when they did, they invariably failed to intercept, being unable to catch them. This had even more profound consequences in fighter combat. The Allied aircraft, being heavier, only bettered the Zero above 15,000 feet due to supercharging and large capacity inline engines. The Japanese had opted for radial engines, being much more rugged in combat than the inline water-cooled units. However, the smaller Nakajima Sakae engine performed better at lower altitudes, a fact American pilots were to discover as they attempted to dog fight the infamous Zero. Once the fuel and pilot quality began to deteriorate the margin between the aircraft began to shrink, thus the venerable F4F that was retained on the small escort carriers (CVE's) remained competitive even with the later marks of Zeros.

To further compound Japanese problems, the Allies introduced the gyroscopic aircraft gun sight that enabled the user to accurately compute the amount of lead required in deflection shooting. This made average shots good shots and good shots great shots. The introduction of this gun sight probably had a major effect on the outcome of what in mid 1944 American carrier pilots dubbed the 'great Mariana's turkey shoot'.



The Mark 53 VT fuse that gave Allied anti-aircraft gunnery its lethal edge over Japanese air attacks. Without this fuse, the war in the Pacific may have lasted another year and claimed untold extra lives.

However, it was the invention of radar that ultimately gave the Allies a significant advantage over their opponents. In October 1940, the Royal Navy met with the US Navy to exchange technical information on radar and associated equipment. The Royal Navy had introduced the Combat Information Centre (CIC) system during WW1 in which all combat information came to a central point within the ship to be evaluated and acted upon. With the invention of radar, the system gained long range air and surface search capabilities unavailable in the pre-war period. The Japanese had also adopted this system pre-war, but never combined radar plotting within the CIC as had the Allies. The importance of radar cannot be overstated. It allowed air commanders sufficient lead-time to meet incoming raids with an appropriate response and more importantly allowed them to husband scarce resources during critical phases of the battle. By 1944, both sides possessed reasonably reliable air and surface search radar, but only the Allies possessed gunnery radar control linked to AA weapons. Coupled with the variable time fuse (VT) it allowed the Allied AA defence to detonate each round at a particular range established by Radar. This increased the percentage of hits against enemy aircraft by a considerable margin.



Given the above parameters we can apply a number of historical modifiers to the campaign.

1. Japanese night fighting techniques allowed them better target spotting and gunnery control before December 1942. All Japanese torpedo fire at night will have a +1 added to the dice roll.
2. Between the period December 1941 and December 1942, the Japanese player will add +1 to all dice resolving combat using the Zero.
3. After December 1943, the Allied player will add +1 to dice rolls resolving combat against all Japanese aircraft.
4. After June 1944, Allied AA fire dice rolls will be increased by +1 to simulate the effect of radar control for AA fire and the use of the VT fuse.
5. Japanese ships operating within the sight of land in the Philippines or Papua and New Guinea, will have an additional spotting roll made against them to simulate the presence of Allied Coast Watchers. This will be a single D6 roll of 4,5,or 6 to locate a group of ships passing close enough to be seen.
6. Aircraft availability and replacement:
Each USN or British carrier will roll 1D6 for each type of aircraft available to its Carrier Air Group (CAG). The number rolled will be the number of aircraft counters taking part in the attack. US carrier groups of two CV's and two CVE's usually relied on the larger CV's to form the attack formation and the CVE's to supply the CAP over the carrier group. When assembling a CAP, a 1D6 is rolled per carrier. The CVE's usually operated F4F's and TBF's - for reconnaissance.

Each Japanese carrier will roll 1D6 per aircraft type contained within their Naval Air Group (NAG) in the same manner, except that the fighters not used to escort an attack formation, can be used for the CAP. When launching a CAP, a 1D6 is rolled to establish the number of aircraft counters available.

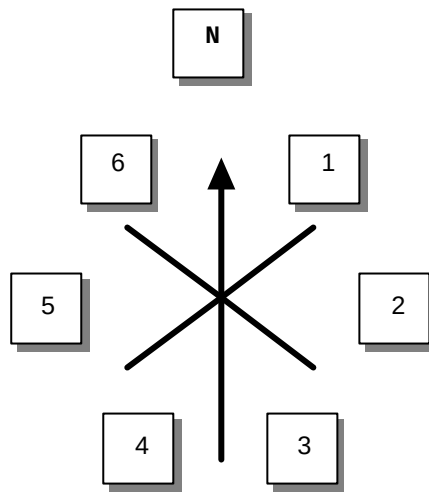
Due to the ranges involved and the time taken to assemble, fly to the target and then recover the aircraft from a raid, it was usually only possible to conduct two raids during daylight hours. The principle factor in the raid cycle was distance to target. Therefore if the target is between 200 and 330 miles, only one raid per day is permitted. If it is between 150 and 200 miles, two raids are permitted. If it is less than 150 miles, then as many raids as there are available aircraft are permitted.

Individual aircraft losses are undefined. No distinction is made between lost or damaged. Either way they are removed from combat. As aircraft counters are removed from combat due to enemy action, they become available for redeployment after 24 hours. A 1D6 is rolled for the total number of aircraft counters being returned as replacements. The number indicated is the number of counters received. Players may choose whichever type of counter they wish, but they may not exceed the historical establishment of the aircraft type they select.

Beginning 1943, US carrier forces add +1 to their dice roll, +2 at the beginning of 1944 and automatically replace all losses after the beginning of 1945.

Japanese players suffer a -1 replacement dice roll penalty at the commencement of 1943 and a -2 at the commencement of 1944. From the beginning of 1945 no replacements are available to the IJN.

Locating the target



Players determine the angle of approach of their forces in relation to each other using the above sector system. In order to detect an enemy force, the opposing player must roll the correct number for the sector that represents the correct direction of approach. The arrow head represents a compass heading of north and players should determine the sector their force occupy based on the arrow head facing a constant northern alignment

Reconnaissance and air raid track – once target has been located.

Once the correct direction of approach by the enemy has been determined, it is then necessary to determine at what range they were detected. This is achieved by both players rolling a series of dice, starting with a range of 330 miles. This represents the longest practical range at which an airstrike could be conducted. Both players roll 1D6. If either scores a '6' they have succeeded in locating the enemy force at 330 miles from the locating forces' present position. If there are separate forces attempting to locate the same target, each force must make a separate dice roll.

Once the first player rolls the required '6' it fixes the range at which the two forces are separated. The second player continues to roll until they also achieve the required '6'. The number of dice rolls it takes the second locating player to roll a '6' is the number of game turns delay between the launching of that players' air attack against the target, as opposed to the first player.

Example:

The first player rolls a '6' on first attempt. He locates the target at 330 miles and fixes the distance between the opposing forces at 330 miles. This requires 12 game turns (about 3 hours real time) to assemble a raid and arrive at the target. The second player fails to roll the required '6' on any dice rolls until he rolls 6D6. This means that he is six game turns behind the first player in launching his attack against the opposing player.

Both players assemble and launch their raids and follow the raid track from launch to 330 miles (12 game turns each) with the second player starting down the raid track six moves after the first.

RAID TRACK – each square takes 1 game turn to complete

Raid Assembly	30 miles	60 miles	90 miles	120 miles	150 miles
12D6	11D6	10D6	9D6	8D6	7D6

180 miles	210 miles	240 miles	270 miles	300 miles	330 miles
6D6	5D6	4D6	3D6	2D6	1D6

Shore based targets.

Where naval forces are involved in firing against land targets the following rules apply. Players should bear in mind that there is a significant difference between land artillery rates of fire and ship rates of fire. Ships contain sophisticated mechanical loading systems that allow for much higher rates of fire to those of land-based artillery. Hence the difference in the number of dice rolls between shore and sea based artillery. In general, each land based artillery battery rolls 1D6 per gun within the battery. Land targets require a '6' on any firing roll to be hit and destroyed. Players don't roll a second dice to assign 'damages'. Buildings and facilities should have a number of damage/defense points assigned to each. It requires a '6' to remove each damage/defense point. Once a target has lost all its defense points it is destroyed. In general I recommend that facilities such as generators should have 6 defense/damage points. Gun batteries, one point per gun. Radar and radio aerials are difficult targets to hit and should be ignored for the purpose of the game. General buildings such as huts and accommodation blocs have only 1 defense/damage point each. Underground facilities and strong points are more difficult to damage and they should range from 4 to 10 defense/damage points, depending on their size and level of protection.

Airfields are large complexes and can absorb significant damage before they become un-operational. I would suggest 12 points for small, 16 for medium and 24 for large. Once an airfield has sustained 50% damage, it becomes un-usable. Land targets are not repaired in the same manner as ships. Land targets are repaired once they cease to be attacked. Repairs are completed in the same manner as ships in that 1D6 is rolled and the number indicated is the number of damages repaired. Only one repair attempt is made in a 24- hour cycle.

Aircraft – (bombers only) attack land targets in the same manner as they attack shipping. 4D6 for bombs, requiring a '6' to achieve a hit and cause one D6 points of damage. Fighters may be used to suppress AA fire. Each fighter marker will suppress 4 AA guns in a battery, thus preventing the AA battery from engaging the bombers. AA fire against fighters will be assessed in the same way as AA fire against any other aircraft.

Part 1.

The Attack on Pearl Harbour

The following special rules cover the attack on Pearl Harbour on 7th December 1941. The number of AA weapons available to the defenders is unknown. To further complicate matters the US forces were in a peace time state and many batteries would not have had an ammunition allocation or been completely outfitted for war time conditions. Therefore we must make an educated guess as to the readiness of the shore based defenses. The principle AA shore batteries were of the 3 inch caliber, backed up by 40mm (2pdr) Bofors guns and .50Cal heavy machineguns. The 3-inch batteries were hand loaded therefore suffered a reduced rate of fire to that of their navy counterparts that were mechanically loaded. Most of the early ship and shore based heavy AA guns were hand loaded. Accordingly I have allocated an AA factor of 6D6 per target location.

AA fire dice rolls against aircraft targets will be as per the AA rules but a '5' on any dice roll will result in the aircraft counter being removed as 'driven off' taking no further part in the action.

Air attack damage.

Airfields subjected to attack require no D6 roll to hit the target, for obvious reasons. Each attacking aircraft counter rolls 1D6 and the number rolled equals the damage points inflicted.

Torpedoes against anchored targets.

The normal torpedo attack rules apply with the following modifications.
1 or 2 rolled and the torpedo misses the target. 3, 4, 5 or 6 and the torpedo hits the target.
Roll for a 'sink test' as per the rules then roll for the number of damages per hit, as per the rules.
The number of damages, even if the target is sunk, represents the number of months the vessel remains under repair after salvage.

Air attacks against airfields.

Airfields have a basic defense value and an additional value for the aircraft based upon them. Attackers roll 4D6 per attacking aircraft counter and any '6' causes the loss of airbase defense points. In addition, the attackers roll for each type of aircraft based at the airfield. 1D6 per type of aircraft. Each '6' rolled, represents the destruction of 1 type of aircraft counter.

In the case of Pearl Harbour the following defense values apply.

Wheeler airfield	3 fighter points
Ewa airfield	3 fighter points
Kaneohe airfield	2 fighter points
Hickham airfield	5 fighter, 2 bomber points

Note: The attacks on airfields took place during the first raid. Any surviving fighters may therefore engage the second wave arriving an hour behind the first.

Japanese Carrier Air Group Composition

Attack on Pearl Harbour – 7th December 1941

	Fighters	Dive Bombers	Torpedo Bombers
<i>Akagi</i>	21 A6M Zero	18 D3A Val	27 B5N Kate
<i>Kaga</i>	21 A6M Zero	27 D3A Val	27 B5N Kate
<i>Hiryu</i>	18 A6M Zero	18 D3A Val	18 B5N Kate
<i>Hosho</i>	11 A5M Claude	-	8 B5N Kate
<i>Zuiho</i>	16 A5M Claude	-	12 B5N Kate
<i>Ryujo</i>	16 A5M Claude	-	18 B5N Kate



Part 2

The Battle of the Coral Sea 4th – 8th May 1942

This was to be the first major encounter between the Allied and Imperial Japanese naval forces. It was important for two reasons.

1. It was only the second time in modern history a Western and Asian fleet had contested a major surface action.
2. It was also the first time in history that two fleets had met in battle and not seen each other. The whole action was fought between competing air fleets as opposed to ships.

The Japanese has occupied the island of Truk in the Caroline Island group and built a formidable naval base sitting astride the Central Pacific. This was a direct counter to the American presence on Hawaii at Pearl Harbour and at Midway Atoll 1500 miles to the north-west of Hawaii. In the push south through Indo-China, The Japanese had occupied Rabaul in the New Ireland Group and constructed a heavily fortified naval garrison and harbour. The Allies were therefore forced to make a circuitous approach via Tahiti and Fiji to Australia and New Zealand. The New Hebrides and New Caledonia were hastily occupied by Allied forces in an effort to prevent further Japanese expansion into the South West Pacific, which threatened the North East coast of Australia and New Zealand.

Prior to the opening of hostilities with Japan, the Australians had embarked on a programme of establishing a greater presence in Papua- New Guinea and on the Malayan Peninsula. Accordingly a large air and naval base was built at Port Moresby on the southern coast of PNG to guard the Australian Northern Territory. This relied on Darwin for re-supply and support. Thus the Coral Sea became an important gateway for both Japanese and Allies in the pursuit of their strategic objectives.



The Japanese had determined they would of Guadalcanal in the Solomon Island Group. The Allies only discovered the existence of this base by accident during March 1942. They also attempted to put a

major seaplane base at Tulagi on Florida Island, which is directly opposite the site they chose for their airfield on Guadalcanal. The Allies were determined to remove the Japanese from these locations and occupy them as part of the Allied strategy to re-conquer the Philippines. A major plank of the MacArthur plan for South West Pacific Theatre of Operations.

The Japanese axis of advance into the Coral Sea can only occur from the northern (via Truk) and western (Rabaul) sides of the map.

The Allies are free to arrive from the south west (via the New Hebrides or New Caledonia), from the west (via Townsville in Australia) or from the west(via Darwin in Australia)

Players must remain constantly aware that the Battle of Midway is one month into the future and resources will need to be husbanded for this event. The Japanese Imperial Fleet had already issued orders for the attack on Midway and the occupation of the Aleutian Islands before the Battle of the Coral Sea had commenced. The carriers in particular were expected to support the

occupation of Guadalcanal and Tulagi and then return to Japan Home Waters for inclusion in the coming attack on Midway and the Aleutian Islands.

Imperial Japanese Navy

Carrier Striking Force (Takagi)

Shokaku	21A6M2 Zero	21 D3A Val	21 B5N Kate
Zuikaku	21 A6M2 Zero	21 D3A Val	21 B5N Kate

C.A. Myoko, Haguro
Destroyer Div. 7 Ushio, Akebono
Destroyer Div. 27 Ariake, Yugure, Shiratsuyu, Shigure
Oiler. Toho Maru

Tulagi Invasion Force (Shima)

Minelayers. Okinoshima, Koei Maru
Transport. Azumasan Maru
Destroyer Escort. Kikuzuki, Yuzuki.

Port Moresby Invasion Force (Kajioka)

CL Yubari
Destroyer Escort. Oite, Asanagi, Uzuki, Mutzuki, Mochitzuki, Yayoi
Transport Unit. Unknown number of ships.

Support Group. (Marumo)

CL Tenryu, Tatsuta
Kamikawa Maru
Gunboats. Keijo Maru, Seikai Maru, Nikkai Maru

Covering Group (Goto)

CVL Shoho	12A6M2 Zero	9 B5N Kate
-----------	-------------	------------

CA. Aoba, Kinugasa, Kako
Destroyer Escort. Sazanami

Submarine Force.

Unknown at this time.

US and Allied Forces

Task Force 17 (Fletcher)

Task Group 17.2 (Attack Group) (Kinkaid)

CA Minneapolis, New Orleans, Astoria, Chester, Portland.
Destroyer Escort. Phelps, Dewey, Farragut, Aylwin, Monaghan

Task Group 17.3 (Support Group) (Crace)

CA Australia, Hobart, Chicago.
Destroyer Escort. Perkins, Walke

Task Group 17.5 (Carrier Group) (Fitch)

CV Yorktown	21 F4F	38 SBD Dauntless	13 TBD Devastator
CV Lexington	23 F4F	36 SBD Dauntless	12 TBD Devastator

Destroyer Escort. Morris, Anderson, Hammann, Russell

Task Group 17.6 (Fuelling Group) (Phillips)

Oilers. Neosho, Tippecanoe
Destroyer Escort. Sims, Worden

Task Group 17.9 (Search Group) (DeBaun)

Seaplane Tender. Tangier (with 12 PBV-5 Catalina)

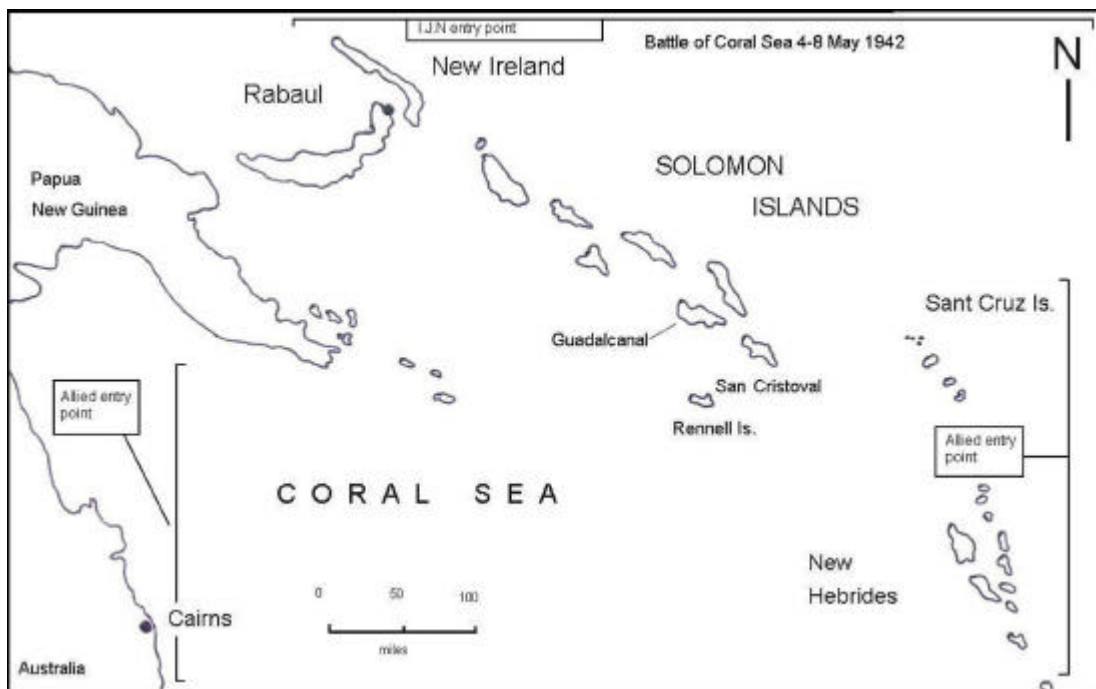
Strategic considerations and victory conditions

1. The object of the battle is to remove the opposing carrier forces. Neither side can assure the safety of their ships, or the success of their land operations in the area of the Solomon Islands without establishing air superiority.
2. The loss of a major aircraft carrier (CV) will constitute a tactical loss for your forces.
3. The loss of all aircraft carriers will constitute a strategic loss for your forces.
4. In the event of both forces suffering equal carrier losses the battle will be considered a strategic draw.

How to use the map.

1. Both players will plot a set of courses for their respective forces on a copy of the map.
2. The Japanese player will plot courses for their respective invasion forces to both Tulagi opposite Guadalcanal Island in the 'slot' and Port Moresby, which is near to the label 'Papua – New Guinea ' on the map.
3. All other Japanese naval units may be deployed from the northern edge of the map along the line marked 'IJN entry point' to any other place on the map.
4. The Allies must deploy Task Group 17.3 (Support Group) from the Cairns entry point. All other groups may be deployed from either Allied entry point.
5. Sailing course tracks should be drawn on the map at a scale of 500 miles representing 24 hours sailing time. The beginning of each 24hour period commences at 24.00 hours (midnight).
6. Once all the sailing tracks have been entered onto the maps they should be compared and at any point the forces come within 300 miles of each other, players should commence rolling for the possibility of sighting each other by air reconnaissance from first light - beginning 0400 hours.
7. For this campaign battle, players should disregard the rule covering the direction of spotting, given the limited approach route options the Japanese historically had at the time. Use only the rule covering 'Reconnaissance and air raid track'.
8. Once contact has been made between opposing forces, the tracks are frozen at that point and time. Time may be approximately calculated by using a scale of 21 miles sailed for 1hour sailing time.
9. Players may re-deploy their forces to meet the tactical situation they may find themselves in, once initial contact has been made. It may be easier if players plot their courses using pencil so that any subsequent changes in course can be made after deletion of the original plots after the first point of contact.
10. Movement will remain constant at 500 miles per 24hours. Ships re-deployed to meet the changing tactical situation will require new courses to be plotted and the old courses erased.
11. Un-repaired damages remaining at the end of the battle will require the ship to be returned to repair facilities in Japan or Pearl Harbour. Each damage point will require 1 week of campaign time to repair. Each aircraft counter lost will require 1 week of campaign time to replace.

Good luck!

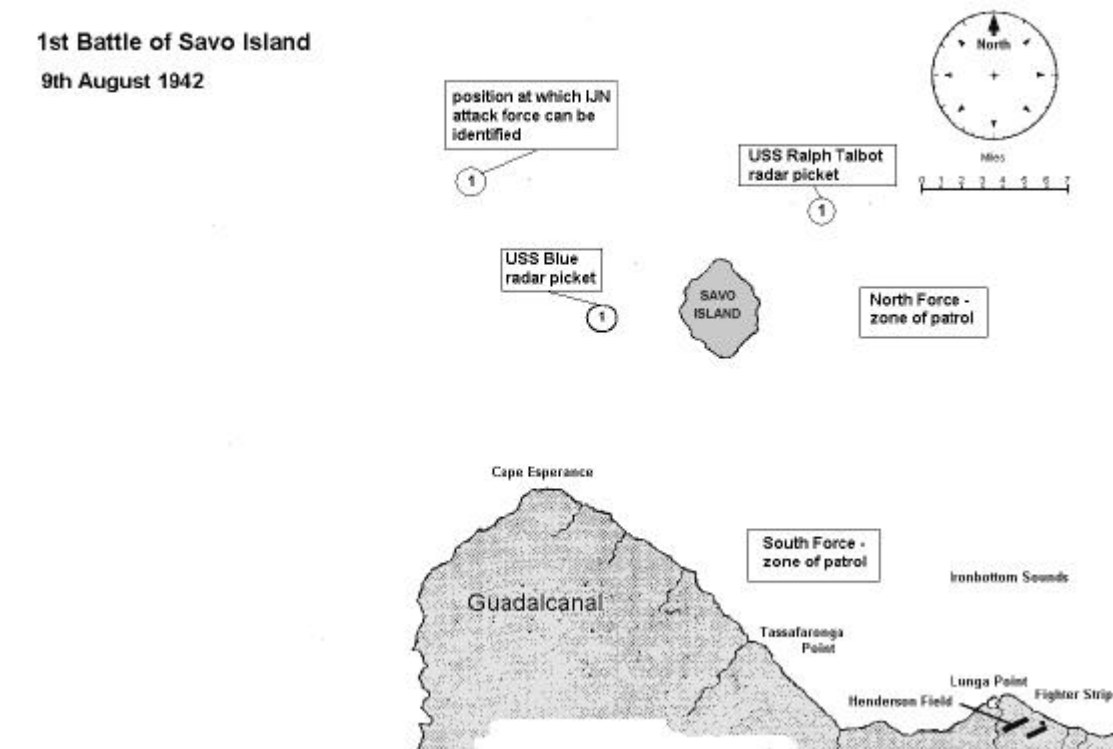


The First Naval battle of Guadalcanal – August 1942



Order of Battle- Operation 'MO'

1st Battle of Savo Island 9th August 1942



2nd Naval Battle of Guadalcanal

Night of 14-15 November 1942

Order of Battle

US Navy Forces

Task Force 64 (Lee)

BB 56 Washington
BB57 South Dakota
DD416 Walke
DD397 Benham
DD379 Preston
DD433 Gwin

Imperial Japanese Forces

Emergency Bombardment Force

Sentai 11 (Kondo)

BC Kirishima

Direct Escort

DD Hatsuyuki
DD Asagumo
DD Teruzuki
DD Shirayuki

Sentai 4 (Kondo)

CA Atago
CA Takao

Direct Escort

CL Nagara
DD Inadzuma
DD Samidare

Ahead Sweeping Group (Hashimoto)

CL Sendai
DD Shikinami
DD Uranami
DD Ayanami

Notes:

The map positions indicate the first radar contact by US forces of the approaching IJN bombardment forces. The IJN player may arrange his forces as he sees fit, within the attacking formations. He may alter the ships in each of the formations but may not use any other ships, except those listed.

The IJN objective was to bombard the Henderson airfield complex and if possible destroy its operational capability. If the IJN player can bring the airfields into gunnery range they have won this particular battle in the campaign.

2nd Battle of Guadalcanal

14 - 15 November 1942

① 2300 Hours

