



Missiles at Sea 2030

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Missiles at Sea 2030
Modern Naval Combat 2020 to 2030
By Scott Elaurant © June 2022

Table of Contents

Rules of Play.....	4
1. Introduction.....	4
2. Design Philosophy and Assumptions	4
2.1 Scale, Basing and Measurement.....	4
2.2 Firing Arcs	5
2.3 Decoys and Deployment.....	5
3. Ships, Submarines, Air and Land Units in Missiles at Sea.....	6
4. Turn Sequence.....	9
4.1 Initiative Phase	9
4.2 Movement Phase	9
4.3 Detection Phase.....	9
4.3 Attack Phase	9
4.4 End Phase	9
5. Movement Phase.....	10
5.1 Moving Ships and Submarines	10
5.1.1 Squadrons	10
5.1.2 Submarines	10
5.1.3 Launching Helicopters.....	10
5.2 Moving Aircraft and Helicopters.....	11
5.2.1 Launching and Landing Aircraft.....	11
5.2.2 Rearming Aircraft.....	12
5.3 Special Movement Actions.....	12
6. Detection Phase	13
6.1 ASW Search.....	13
6.2 Resolving Detection Attempts	13
6.2.1 Visual Detection.....	13
6.2.2 Radar Detection.....	13
6.2.3 Sonar Detection	14
6.2.4 Helicopter Detection	14
6.2.5 Detection Table	14
6.3 Contact Markers	14
7. Attack Phase.....	15
7.1 Order of Attacks	15
7.2 Eligible targets	15
7.3 Scores to Hit and Detect.....	16
7.4 Air Launched Attacks.....	16
Air to Air Combats: Dogfights and Beyond Visual range (BVR)	16
Anti-Ship and Land Attacks:	17

Anti-Submarine Attacks:	17
7.5 Ship Launched Attacks.....	18
Surface Missile Attacks (SSM, SCM):	18
7.5.1 Gun Attacks.....	18
7.5.2 Torpedo Attacks.....	19
7.5.3 Anti-Submarine Attacks (ASW)	19
7.6 Submarine Launched Attacks	20
7.7 Land Combat	20
Shore Batteries:	20
Land Unit Combat:	20
7.8 Nuclear Weapons	20
8. Damage	21
9. End Phase	21
9.1 Damage Control.....	21
9.2 Check Morale.....	22
9.3 Remove Detection Markers	22
10. Fleet Choices	23
10.1 Point System.....	23
Command Ratings and Crew Quality	23
10. Setting Up the Game.....	23
10.1 Setting up the Playing Area	23
10.2 Determine Weather.....	24
10.3 Determine Mission	24
10.4 Rules of Engagement.....	26
11. Missiles at Sea 2030 – Quick Reference Sheet	27
12. Future Naval Scenarios	28
12.1 South China Sea, 2026 – Sea Control or Sea Denial	28
12.2 Taiwan Strait, 2026 – Landing Force	29
12.3 Senkaku Islands, 2030 – Raid	30
12.4 Philippine Sea, 2030 – Fleet Action	31
12.5 Molucca Strait, 2030 – Convoy	32
12.6 Sunda Strait, 2035 – Raid.....	33
12.7 Solomon Islands, 2035 – Sea Control or Raid	34

Rules of Play

1. Introduction

Missiles at Sea V2 (MAS V2) is a set of rules for wargames using naval miniatures of ships of the modern era (2020 onwards). It includes rules and statistics to allow the playing of naval battles in the early 21st Century (2020 to 2030). Scenarios and fleets included are for the Indo-Pacific region.

This edition is updated compared to the previous (2010, 2019 and 2021) editions to incorporate lessons from the Russo-Ukraine War. It includes rules for uncrewed UAVs and UUVs. The rules for these are speculative, and represent a “best guess” on the tactical impact of these systems.

The rules are intended to be as simple as possible, so that players focus on tactics, rather than statistics.

MAS is designed to be played with a range of similar sized fleets and randomly determined missions. Fleet sizes of 50 to 100 points are recommended on a 6” x 4” table.

Players should appreciate that while MAS is meant to be as accurate as practical, it is a game of naval warfare, not a simulation. Ship ratings are best guesses, not known facts. Hopefully it will reward realistic tactics and punish bad ones. Nevertheless, it contains many abstractions that remove it from reality.

Ranges of modern naval weapons are very long and a sliding scale has been used for distance. The visual horizon represents a radius of 6” around a ship. The radar/ESR horizon represents a radius of 12”. Aircraft and missile ranges beyond these have been deliberately shrunk to fit battles on a 6 feet x 4 feet table.

Some abstractions are to make the game simple enough to be playable, while others are to ensure play balance. Still more are simply because I do not have access to the real data and had to make guesses.

2. Design Philosophy and Assumptions

This game is based on previous editions of Missiles at Sea (MAS) and modifies them for 21st Century naval combat, still based on these key principles:

- Differences in crew quality and training are at least as important as the quality of ships and weapons in determining the victor. This game is based more on books like “The Hundred Days”, Admiral Sandy Woodward’s account of the Falklands war, than Jane’s Fighting Ships.
- Similar weapons and ships systems are assumed to operate with equal effectiveness unless there is a documented and quantifiable difference in their performance.
- Evidence from real world naval combat and operations is more reliable than trial claims.
- These rules aim to incorporate the “fog of war” as fleets try to locate and identify the enemy without using an umpire or excessive book-keeping.

The following assumptions are inherent in these rules

- ISR (including satellites) makes approximate ship positions known, but not submarines.
- When units carry out area searches, they are assumed to use all active sensors at their disposal (Radar, Sonar and other media).
- All helicopters, interceptors, patrol and strike aircraft are assumed to operate at low level to avoid detection.
- Reconnaissance and Early Warning aircraft are assumed to operate at high level to gain detection range.
- Once one ship or aircraft of a squadron is detected it is assumed that the detecting ship will focus on that area and soon detect the rest of the group.
- All ships and air units of a naval force have data links with which they can share enemy location information. Submarines operate independently unless at periscope level.

2.1 Scale, Basing and Measurement

The game is designed for use with 1:1800 or 1:3000 or 1:6000 miniatures. 21st Century naval weapons have greater range than their predecessors. Ground scale in this game is larger than previous editions.

Time Scale: One game turn = one hour of real time.

Remember that the real ships would only be a few millimetres long at this sea scale. Therefore note the following playing conventions.

- Measure distance and range from a central point on ships, the conning tower of submarines, and the canopy of aircraft miniatures. Paint a white dot on miniatures to mark this point.
- It does not matter if ship bases are moved in contact or appear to pass through each other in the game; in practice there is plenty of space.
- Lines of fire do matter. You may not trace line of fire between units of the same type across other units of the same type. Anti-ship fire may not cross other ships. Anti-air fire may not cross other aircraft.
- Ship miniatures should be based to clarify their bearing. Fire arcs are defined as angles from the centre.
- Players may measure range to other units during movement and combat.

Recommended Base Sizes for 1:1800 and 1:3000 Miniatures

Unit Type	Base Size (mm)		Unit Type	Base Size (mm)	
	1:1800	1:3000		1:1800	1:3000
Super carrier	200 x 50	100 x 40	Helicopter/Patrol Air	20 x 20	20 x 20
Carrier, LHD	150 x 40	80 x 20	Air Flight (4 x AF, AS)	20 x 20	20 x 20
Cruiser, LPD	120 x 30	60 x 20	SSBN, SSGN	120 x 20	60 x 20
Frigate, Destroyer	80 x 20	40 x 20	SSN	80 x 20	40 x 20
Corvette	60 x 20	40 x 20	SSK	60 x 20	40 x 20
Patrol Boat	40 x 20	20 x 20	Tanker; Container Ship	150 x 30	80 x 20
Land unit, Battery	20 x 20	20 x 20	Freighter	120 x 30	60 x 20

2.2 Firing Arcs

Most modern weapons are guided and can fire in a 360° arc. The following are the only exceptions:

- Submarine torpedoes may only fire into their forward 180° arc (to reflect torpedo guidance limits).
- Ship torpedoes may only fire into their broadside 90° arcs (45° either side of directly abeam).

The line of fire, traced from the firing ship to the target, may not pass over a ship unless the target is a high flying aircraft. It may not pass over land unless a gun, cruise missile (SCM) or air attack at a land target.

2.3 Decoys and Deployment

These rules try to reflect the “Fog of War” and uncertain location of the enemy. It is assumed satellite ISR can identify any ships approximate position, but not submarines.

- Ship units start the game deployed on the table represented by a miniature. Its identity and approximate location are known. However it must be marked with a “Detection” marker before it may be fired at.
- Air units in flight including helicopters are placed on table. Unlaunched units are in their base or ship.
- Submarines may start the game either “Active” or “on Patrol”.
 - Active submarines are deployed as a Contact Marker (4cm x 2cm token) at the start of the game. They move at up to cruising speed (4” per turn) until their identity is revealed. They are then replaced with a miniature. A “Detection marker” is required before any submarine may be fired at.
 - On Patrol submarines are located in a 12” square recorded by the owning player. Their miniature and identity is not revealed until a successful search or they are activated by the owning player.
- Place one extra Contact marker on table for each Active submarine. These are decoys.
- A decoy marker is a contact marker with the word “decoy” written on its face down side. Non-decoy contact markers have the name of the ship/sub unit represented on the face down side.

Optional Rule: Satellites Down!

- All Ships start the game as Contact markers, with their identify unknown till detected. A contact marker is a 2cm x 4cm rectangular token used to mark a location.

At deployment place one Contact marker for each ship deployed on table.

3. Ships, Submarines, Air and Land Units in Missiles at Sea



Ships statistics are contained in a card format that shows all the offensive and defensive capabilities of the ship, its point value, and the number available in 2020 or 2030 scenarios.

Crew Skill

Units are of average skill unless specified otherwise. Some navies may purchase Crack or Green Crews.

- Crack Crews pass a Skill Check on a die roll of 3+
- Average Crews pass a Skill Check on a die roll of 4+
- Green Crews pass a Skill Check on a die roll of 5+

Ship Units

Type 31 (Inspiration) Class Frigates (FFG) 2020 (0) 2030 (5)								
								
Weapons	Range	ROF	Dmg	Notes	Cost: 7 points			
Tomahawk SSM	72"	2	2	VLS	Stealth	Hull	Move	Radar
Sea Ceptor SAM	12"	2	1		1	2	6"	2
ASW UUV	6"	1	1		Sonar	ASW	Gun	AA
Helicopter or UAVs	24"	1	1	ASW	2	2	2	3

5 ships planned. In service from 2027 to 2050+.

Definitions:

SSM = Surface to Surface (Anti-Ship) missile attack

SCM = Surface Cruise Missile – may be fired at ship or ground target without penalty.

LCM = Land Cruise Missile – may be fired at a ground target without penalty or ship with penalty.

SAM = Surface to Air Missile; may fire at enemy air units within 12" and defend friendly units within 6".

VLS = Vertical Launch System - flexible weapon bays able to take multiple weapon types. Types carried must be specified before start of play. The VLS total is the maximum combined ROF of weapons carried.

UAV = Unpiloted Aerial Vehicle (aerial drone)

UUV = Uncrewed Underwater Vessel (underwater drone)

Dock = The Dock # total is the combined total of boats and UUVs that may be carried and launched by it.

Deck = The Deck # total is the combined total of Air units/UAVs that may be carried by it.

Gun = number of Gun attacks able to be made vs ship or ground target within 6" of the firer.

AA = point defence/short range AA system. May fire at any air or missile attacks vs ship in a turn.

Range = maximum range of weapon from centre of firer to centre of target, in inches.

ROF = number of attacks weapon may launch per turn.

Dmg = number of hits inflicted on target if struck


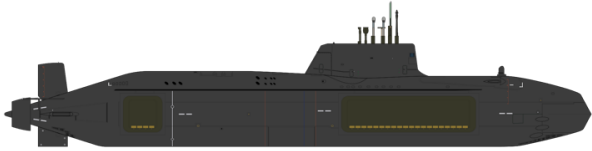
Turn = turn angle moved without penalty to ship's speed. If exceeded, speed is half.

Hull = number of hits required before ship is sunk. Half this total cripples target

Move = Maximum speed per turn in inches.

Submarine units

AUKUS Class Submarine (SSN) 2020 (2) 2030 (2)

								
Weapons	Range	ROF	Dmg	Notes	Cost: 12 points			
Mk 48 Torpedo	12"	4	2	6 TT	Stealth	Hull	Move	Radar
Tomahawk SCM	72+"	2	2		3	3	8"	1
UUV or Decoy	NA	2	NA		Sonar	ASW	Gun	AA
Hammerhead Mine (2)	NA	6	2		3	3	0	0

8 subs planned. Assumed in service from 2030 to 2060. No Crack crews available till 2035.

Terminology used for Submarines is the same as for Ships, but note the following additions:

Decoy = Defensive measure submarine may fire instead of a torpedo. Increases Stealth by +1

Air units

RAAF/RAN	Cost	Speed	Stealth	AA	SAM	SSM	Rng	ASW	Role
F18F Hornet	4	72"	0	3	3	2	18"	0	FB
EF18G Growler	4	72"	All+1	2	2	2	18"	0	EW
MQ4 UAV	3	48"U	2	1	0	2	18"	1	RCN

Terminology used for Air Units is the same as for Ships, but note the following additions:

Role = type of aircraft, which defines mission choices.

FB = Fighter Bomber; may attack air and surface units

RCN = Reconnaissance; may attempt to detect and identify enemy units.

EW = Electronic Warfare; Stealth rating is added to all friendly air units within 12".

AEW = Airborne Early Warning; automatically detects any enemy air unit within 24".

ASW = Anti-Submarine Warfare; may attempt to detect and attack enemy submarines.

UAV = Uncrewed Aerial Vehicle; replacement may be launched if shot down.

Speed "U" = Unlimited; UAV endurance exceeds length of game. UAV need not land.

Land units

Land units may be placed on islands or coasts. They may also be carried by some ships and landed in the game to capture objectives. Each navy has a table of available land units.

China/PLAN	Cost	Speed	Stealth	Hits	Radar	SAM	SSM	Rng	Dmg
Marine Bn	2	4"	1	2	0	0	2	6"	1

YJ12 SSM	3	2"	0	1	1	0	4	36"	1
DF21 IRBM	4	0"	0	1	1	0	2	84"	3

Speed = distance ground unit may be moved per turn while on ground.

Hits = hits required in one turn to destroy ground unit.

Uncrewed Units

Large UAVs (aerial drones) have their own data entry and are moved as air units. For cases where their use is to assist adjacent air units, their statistics might indicate "+1". E.g. Ghost Bat "AA".

Small UAVs (small aerial drones) may be launched to augment the launching vessels searches or attacks. Each UAV launched in a turn may augment any 1 of:

- Increasing Radar Search Range by +6"
- Increasing Radar Search Rating by +1
- Reducing target Stealth by -1
- Increasing the SAM or SSM Attack ROF by +1



Bakytyar TB2 Armed Drone (Ukrainian Navy)

UUVs (underwater drones) may be used to augment the searching vessels searches or attacks. Each UUV launched may augment the launching unit in a search or attack phase by any 1 of:

- Increasing Sonar Search Range by +6"
- Increasing Sonar Search Rating by +1
- Reducing target Stealth by -1
- Increasing the ASW or Torpedo Attack ROF by +1

4. Turn Sequence

Each turn of MAS consists of the following four phases, which must be completed in this order:

4.1 Initiative Phase

Roll to determine which player has the initiative for the current turn. Each player rolls a six-sided die and the higher total gains the initiative. If one side has a higher Command rating it adds one to its score. If the totals are tied the player without the initiative the previous turn gains it. Command ratings reflect both the degree of professional officer training and the satellite and ISR resources available.

- Crack (Command +1) = Australia, France, Japan, UK, and USA
- Veteran (Command 0) = China, Germany, India, Israel, Russia, Singapore, South Korea, Sweden
- Green (Command -1) = Argentina, Indonesia, Iran, North Korea, Pakistan

4.2 Movement Phase

The player with the initiative moves all their ships, submarines and land units. The second player then does the same. Helicopters are launched and moved when their controlling ship moves.

4.3 Detection Phase

At the end of the movement phase players should complete any Searches for submarines and check if enemy units within Visual or Radar of their units are automatically detected. Mark any detected enemy units with Detection markers. Check if enemy contact markers in range are identified.

4.3 Attack Phase

Within each segment of the attack phase the players alternate to make attacks with their units one by one, starting with the player with the initiative. For each unit, first specify all attacks it will attempt. Then conduct the specified attacks against any detected enemy within range. Each unit may only attack once. Squadrons of air units within 6" of each other may attack as a single unit.

4.4 End Phase

Complete damage control and fire fighting for any ships and submarines that have taken damage.

Check Morale (Skill check) for any submarines, squadrons or fleets that have taken more than 50% losses. If an entire fleet retires then the opposing fleet wins the game. Check Victory Conditions.

Remove Tracking/Detection markers from ships with no undamaged enemy within 12" or subs with no undamaged enemy within 6".

5. Movement Phase

The player who won the initiative moves all their units first. The player who lost the initiative moves all their units second. Helicopters are moved when their launching ship is moved. Any unit (ship, sub or aircraft) may only move once in a turn.

5.1 Moving Ships and Submarines

Movement must be straight ahead except for one turn permitted at the start of a move. Each unit may turn up to its Turn Rating without any loss in speed. Turning an angle greater than the Turn Rating drops the units' speed by half for that turn. When turning a ship or submarine turn it about the centre point of the base, so that the bow moves but the centre remains in the same place. After the turn is completed move the ship forward for the remainder of its move. Ships may move through the bases of other ships but must end with their base clear of other ships' bases.

Contact Markers representing unidentified ship, submarines or decoys are moved the same as miniatures. When moved as a Contact Marker a ship or sub may move up to 4" per turn (Cruising Speed).

5.1.1 Squadrons

Ships may be specified as a squadron before the start of play. Ships in a squadron must remain within 6 inches of their flagship during the game. Ships in a squadron use the flagship's command score for movement and morale as long as they are within 6" of the flagship. Ships may only leave their squadron if they have been crippled. Their move must then be to leave the table by the shortest route, away from enemy if possible.

5.1.2 Submarines

During deployment, players may deploy Active submarines as contact markers, or may opt to secretly record which 1 foot x 1 foot square a Patrolling submarine is located in. Diesel submarines (SSKs) must Patrol in a square in their deployment zone. Nuclear submarines (SSN, SSBN, SSGN) may Patrol in any square.

If a Patrolling submarine's deployment location is recorded, the player may only activate and move the submarine if there are enemy ships or subs in the same square, or if the square was subject to an enemy ASW Search in the previous turn. To Activate the submarine roll a Crew Skill Roll. If successful the owning player places the submarine miniature on the table in the pre-recorded square at least six inches from an enemy ship or submarine if possible.

All submarines are assumed to operate underwater at Periscope, Shallow (normal) or Deep depth. A submarine at Periscope or Deep depth should be marked. A surfaced submarine is detectable and may be fired at in the same way as a ship in addition to ASW weapons.

5.1.3 Launching Helicopters

Ships with helicopters may launch and move them when the ship moves. In Storms this requires a command roll of 8 (Carriers add 2). If the Command Roll die is a score of 1 the Helicopter is lost. Ships with more than one helicopter still only place a single helicopter marker. It is assumed that the increased number of

helicopters will improve the effectiveness of searches and attacks.

Helicopters are treated as aircraft for movement except for being moved when their ship moves. Helicopters are moved as a single air unit with a strength equal to the number of helicopters launched by the ship. Helicopters may land at the end of their movement phase if they are in contact with their launching ship.

5.2 Moving Aircraft and Helicopters

Aircraft move in initiative order up to their movement distance, measured from the centre of the miniature. Aircraft turning is unlimited. There is no minimum distance for aircraft, as it is assumed they can circle to remain in place. Fighters and other aircraft (including helicopters) are normally moved separately. However players may move air flights together at launch (within 1”) and then move and attack with them as a single group subsequently.

Aircraft movement is restricted depending on the type of aircraft. Some aircraft and helicopters may undertake multiple roles (eg FB). Their role must be specified when they are launched or deployed. Drones are unmanned helicopters. They launch, move and land like helicopters.

Only fighter flights (FB or INT) may be moved into contact with enemy aircraft. This represents initiating a dogfight. Once a dogfight is formed neither side may remove contacted aircraft until the next turn. Fighters within two inches of friendly air units are assumed to be acting in an escort role. If enemy fighters contact an air unit any escorting fighters within two inches of the contacted air unit may intercept and dogfight the enemy fighter in place of the contacted aircraft. Fighters may be designated as Combat Air Patrol (CAP) if not moved. They may then be moved to contact any enemy aircraft within detection range of the CAP or a friendly AEW aircraft after other aircraft movement is completed. This creates a dogfight. Aircraft may undertake two turns of dogfighting after which they must return to base to land to refuel and rearm.

To prevent players taking unfair advantage of their knowledge of what units are on the table, only Helicopters, Patrol (RCN) or ASW aircraft may be moved into detection range with enemy contact markers or units that have not been detected (see section 5.4). Strike aircraft may be moved within weapon range of detected ships. If successfully launched, a Helicopter marker may be placed within detection range (6”) of an enemy contact marker or within weapons range of a detected ship or submarine. Helicopters may not be moved beyond its speed/distance from the launching ship.

Strike (Bmb), Patrol (RCN) and ASW aircraft must return to their base or launching ship to land to refuel and rearm after they complete any ship or submarine attack.

Large UAVs launch and move as Air units. If their speed is marked “U” they need not land in a game.

5.2.1 Launching and Landing Aircraft

It takes a turn to launch and land aircraft, during which they can only move up to six inches. Aircraft carriers must move at least half speed and straight (no change of direction) during the turn of launching. Aircraft carriers can normally launch or land a number of air units up to half their Flight Deck (Deck) rating. For example the HMS Prince of Wales (Deck 10) can launch or land up to 5 air units per turn. Carriers with a

Ski-Jump can launch air units equal to one third their Flight Deck rating per turn. Laioning (STOVL Deck 10) may launch 3 and land 5 air units/turn.

Bad weather affects the ability to launch and land aircraft. In Rough weather a Skill Roll is required to launch an aircraft. Helicopters may still launch normally. In Storms a Skill Roll is required to launch and land any air unit including helicopters. Air units are damaged if they fail the Skill roll landing in Storm.

5.2.2 Rearming Aircraft

Once aircraft have flown a mission and launched weapons they need to be landed (one turn) and refuelled (one turn) before they can be launched again. There is no limit to the number of aircraft flights that may be rearmed and refuelled per turn. Multi-role aircraft (e.g. Fighter or Strike; Patrol or ASW) must specify their next role and weapon load at time of rearming.

5.3 Special Movement Actions

These may be nominated by a player when a ship or submarine is moved. Many require a Skill check to be made before they take effect. A Skill Check means rolling 1D6 equal to the skill rating or higher. A unit may only attempt one special action per turn.

All Hands on Deck (Automatic) – The crew may attempt repair in the End Phase (See 9.1). The ship may not fire except in self-defence (i.e. AA or SAM). Deep submarines may not repair.

Come About (Skill Test) – The ship may double its delay-free turn rating this turn.

Evasive (Skill Test) – The ship or submarine turns hard in a zig-zag fashion to throw off an attacker. It may not launch torpedoes or launch or recover air units this turn. If successful all attacks hitting the ship or submarine this turn must be rerolled. An Evasive ship may not fire except in self-defence (i.e. AA or SAM).

Deep Depth (Skill Test) – A submarine may dive to Deep depth, unless in shallow water. All detection attempts to and from the submarine have a -1 modifier. Nuclear submarines may travel at full speed without any penalty to being detected.

Periscope Depth (Automatic) – A submarine may operate at Periscope Depth. All detection attempts to submarines at Periscope Depth have a +1 modifier. Subs at Periscope depth may use Visual search on Ships within 6" or Radar/ESM Search on ships within 12". Submarines must be at Periscope Depth to fire SSMs.

Silent Running (Skill Test) – Diesel Subs (SSK) add +1 to Command roll. The submarine moves at 1/4 speed (round up) while Silent Running. If successful subtract one from rolls to be detected and add +1 to detection rolls by the submarine. A Silent Running sub may not fire.

ASW Search – Any ship or Submarine with a Sonar rating or Air unit with an ASW rating may perform an ASW Search of the 1" foot square (12" x 12") it is in. This action represents use of sonobuoys, towed array sonar or VDS systems that are able to detect hidden submarines in a sector. If successful the Searching player places any submarines that have been deployed in the searched square on the table, at least six inches

from enemy ships. This includes both enemy and friendly submarines.

6. Detection Phase

At the end of movement players should check if contact markers are detected or submarines revealed. Visual detection is automatic. Other search types may be undertaken by revealed units, not decoy markers. Any ship decoy marker that ends movement within visual detection range of enemy is removed.

6.1 ASW Search

Air units, ships and submarines may attempt to reveal any Patrolling submarines in the 12" x 12" sector they are currently in. ASW Searches also reveal the identity of any submarine Contact Markers in the sector.

Each allocated sub, ship or air unit may test for recorded submarines in one 12" x 12" square per turn. Each square may be searched once per turn. Searching units must already be revealed to perform ASW search.

When conducting an ASW Search Special Action roll a die for each allocated ship, sub or air unit with a Sonar rating of at least +1 in the area. If any die is a "Six" all other submarines recorded as deployed in that square must be revealed. They are placed by the Searching player at least 6" from enemy. ASW searchers may not do any other Special Action that turn.

6.2 Resolving Detection Attempts

Detection attempts are required to determine whether an enemy contact marker is a unit or decoy, and to allow attacks on identified enemy units within weapon range. Many different types of search technology are employed in modern naval warfare. The search procedure simplifies these based on their range and type.

An important concept in detection is the Horizon Range (6" for Visual horizon or Sonar, 12" for Radar horizon). Visual and radar searches only work to the Horizon. Detection over 12" is only possible for AEW.

Visual Detection – automatically identifies ships & aircraft – Range = 6"

Radar/ESM Detection – Detection Roll to detect air & ships – Range = 12" (AEW 36")

Sonar Detection – Detection Roll to detect ship & sub – Range = 6"

Helicopter Detection – May choose any one of Visual, Radar or Sonar – Range = Helicopter move

6.2.1 Visual Detection

Any enemy Ship or Air unit within visual detection range (6") is automatically identified by any ship or air unit. Place a detected marker next to any ship if detected by visual search.

Submarines may use Visual or Radar search if they are at Periscope depth. They are then subject to visual and radar detection searches by ships and air units with a Skill Roll. Place a detected marker next to any periscope level submarine if detected by a visual or radar search.

6.2.2 Radar Detection

Any enemy Ship or Air unit within radar detection range (12") is identified by any ship or air unit with a Detection Roll. Place a detected marker next to any ship or air unit if detected by radar search.

6.2.3 Sonar Detection

A ship, submarine or ASW rated air unit may attempt to detect one enemy Ship or Sub unit that is within Sonar range (6"). It is detected by any ship or air unit on a Skill roll. Air units cannot be detected by Sonar. If the targets Stealth rating is higher than the searchers Sonar rating add +1 to the die; If the targets Stealth rating is lower than the Sonar rating subtract -1 from the die. Place a detected marker next to the submarine if detected. -1 to detect Nuclear Submarines in Deep water, and Diesel Submarines in Shallow Water.

6.2.4 Helicopter Detection

A helicopter may attempt to detect any one enemy Ship or Sub unit that is within detection range of the helicopter (6"). It may use (one of) Visual, Radar or Sonar Detection. Place a detected marker next to the enemy ship or submarine if detected.

Designer's Note: Many helicopters have a much longer range than stated. The detection radius specified for helicopters represents the area of ocean near their ship they can practically scan in a single turn.

6.2.5 Detection Table

For all Radar and Sonar searches, the die roll required is based on comparing the searching units Radar or Sonar rating and the target units' Stealth rating.

Ship/Submarine/Aircraft Hit and Detection Table

Sonar/Radar vs Stealth	-3	-2	-1	Even	+1	+2
Die Roll to hit	NA	6	5+	4+	3+	2+

Weapon Hit Number Example

A Collins Class submarine (Sonar 2) tries to Detect a Type 39G (SSK) submarine (Stealth 2) in Shallow Water. The Collins Sonar +2 and Type 39G Stealth +1 gives a difference of 0, for a required score of 4+. However the SSK in Shallow Water gains a -1 die roll modifier and so the Collins needs to roll a 5 or 6.

6.3 Contact Markers

When a ship or submarine Contact marker is detected or otherwise identified the "Contact" counter is replaced by the miniature that represents the unit. Players should put the name of the corresponding ship or submarine on the reverse side of the corresponding counter. Other counters should have "Decoy" written on their reverse side. Even if not revealed by enemy searches, contacts are revealed and replaced by the corresponding miniature if they fire, launch or recover air units, or attempt to perform any Special Action.

7. Attack Phase

7.1 Order of Attacks

Attacks are carried out one unit at a time alternating between each player, with the initiative player attacking first. A player may “Pass” by specifying a unit that does not perform an attack.

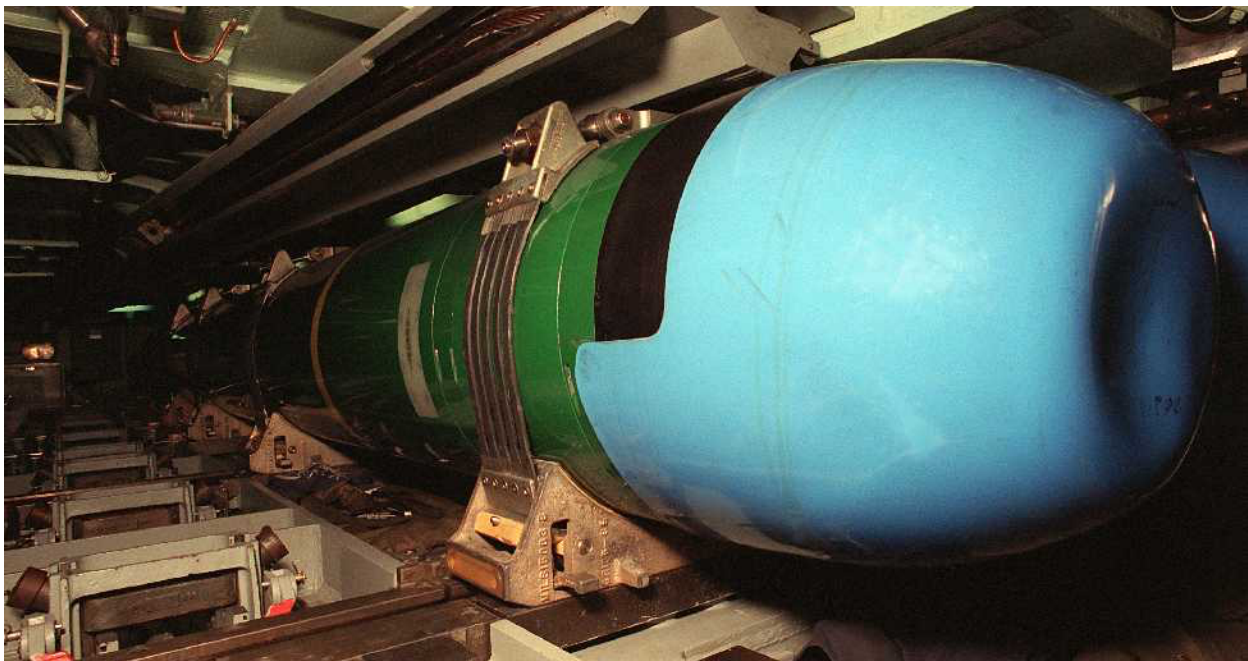
Each ship, squadron, sub or air unit may only launch one attack per turn. Once “Passed” a unit may not attack later in the same turn. AA and Guns may be used to defend or return fire each time a ship is attacked. Ships and subs may attack more than one Detected target if they have multiple weapons or multiple ROF.

7.2 Eligible targets

For any attack to be carried out, the unit (ship, sub air or ground battery) launching the attack must have an eligible target. To be eligible a target must be (1) within the weapon range from the firer, (2) within the firing arc of the weapons to be used, (3) the firer must have clear line of fire (i.e. not blocked by friendly units or land), (4) the target must be identified (not a contact marker) and (5) must be detected by the firer or another friendly unit or have a Detection marker already placed next to them.

For a ship or aircraft the friendly spotting unit must be either a ship or aircraft if firing at a ship or air unit, or an ASW air unit if firing at a submarine. For a submarine indirect spotting is not permitted unless the Submarine is at Periscope depth. For air units a patrol or AEW aircraft may spot. Spotting units within visual range (6”) detect the target automatically and enable fire. If the spotting unit is within the radar horizon (6” to 12”) or is using sonar (6” range), then it needs to roll to detect.

Weapons are able to be used against specific target types. Aircraft can attack aircraft (AA), ships and land (SSM) and submarines (ASW). Ship Missiles can attack aircraft (SAM, AA), or ships (SSM). Ship or land Guns can attack ships or land. Torpedoes can attack ships (TT) or submarines (TT/ASW).



Mark 48 ADCAP Torpedo (United States Navy)

7.3 Scores to Hit and Detect

There are many different types of naval weapons. Most rely on some form of guidance, either from the firing unit or internal.. For all attacks, the same procedure is used. Work out the “base” to hit number that must be rolled equal or higher for each attack dice (ROF).

- For attacks versus Land, Ships and Air units, roll a hit number based on difference between the firer’s Radar rating and the Target Stealth rating.
- For attacks versus Ships and Air units, roll a hit number based on difference between the firer’s Sonar rating and the Target Stealth rating.
- For detection of previously unspotted ships, submarines or aircraft, roll on the same table.

Ship/Submarine/Aircraft Hit and Detection Table

Sonar/Radar vs Stealth	-3	-2	-1	Even	+1	+2
Die Roll to hit	NA	6	5+	4+	3+	2+

Weapon Hit Number Example

A Collins Class submarine (Sonar 2) fires torpedoes at a Type 54A class frigate (Stealth 1). The Collins has ROF 3 and so rolls 3 to hit dice. The target Stealth is 1, and the firer Sonar is 2, for a difference of +1. Therefore a die roll of 3 or higher is required to score a hit on each dice. For each hit, 2 Damage (Dmg 2) are inflicted.

7.4 Air Launched Attacks

Air to Air Combats: Dogfights and Beyond Visual range (BVR)

Aircraft attacking other aircraft within visual range (6”) fight using their Air to Air (AA) ratings. The AA rating is the number of attack dice (ROF) rolled. The score to hit dogfighting is a Skill Roll for the Air unit. NB: all fighting drone UAVs are treated as Green:

Crack Air Unit = 3+ to hit; Average Air Unit = 4+ to hit; Green Air Unit = 5+ to hit;

Dogfights are confusing melees and no other weapons may shoot into them. For each Air unit involved, in initiative order, the attacker rolls attack dice with each success scoring a hit.

One hit = destroyed single helicopter/UAV; Air Unit damaged and must retreat

Two hits = destroyed Air unit.

Aircraft attacking other aircraft beyond visual range (BVR = 6” to 12”) fight using their Surface to Air (SAM) ratings. The SAM rating is the number of attack dice (ROF) rolled. The “to hit” score for BVR combat with SAMs is determined by the firing Radar and target Stealth ratings of each plane. (Stealth ratings are increased by 1 for any aircraft within 12” of an EW aircraft with a jammer (Stealth = “All+1”).

Roll for each SAM attack on the Ship/Sub Air Unit Hit and Detection table. Each die roll of the required number or more is a hit.

Damage from BVR/SAM combat has the same effect as Dogfight/AA combat. Retreated air units retreat to their launching carrier or airfield the next turn, and do not fire if they have not done so already. Surviving non-fighter aircraft complete their mission.

Air to Air Combat Example

A Nimitz Class Carrier has two defending F35 C (AA 4, Radar 2 Stealth 2) units launched and acting as CAP. It receives an incoming air attack from a group of 4 Chinese air units – two J15 FB flights (AA 3, Radar 1 Stealth 0) escorting two JH7 flights (AA 0, Stealth 0). At the end of movement the US player moves the CAP units within 12” of the Chinese to initiate BVR Air to Air (SAM) Combat.

In initiative order first the J15 FBs attack one F35 each. The F35s defend with their Stealth rating (2). Each J15 needs a 5+ to hit. The first rolls 1, 2, 4 for no hits. The other J15 rolls 2, 3, 6 for one hit. This cripples (damages) one F35 which now must retire. The US player now fires the other F35 (SAM 4) at the JD7 flight which uses its Stealth rating (0) to defend. It needs a 2+ to hit. It rolls 1, 4, 4, 5 for three hits. One JD7 is destroyed. The remaining JD7 is damaged and must turn back without attacking the Nimitz. After performing air to air combat the F35s and J15s must land next turn.

Anti-Ship and Land Attacks:

Aircraft in range of detected ship or land targets may fire any weapons carried with sufficient range. The attacker first specifies which attacking aircraft are launching what weapons at which defenders. The targeted ship or land units next roll to detect the incoming attack if it is from missiles launched beyond visual range. Make a Detection Roll to detect for each friendly ship within six inches of the target ship or the firer to detect the attack. If successful the target ship and others in its squadron may then fire AA and SAM defences at any attacking aircraft or missiles in range. Remove any shot down aircraft or missiles and damaged aircraft after AA fire is complete.

After AA fire surviving missiles attack the ship or surviving aircraft may bomb their target. Roll one attack dice to hit for each surviving missile, or dice equal to the SSM rating for each surviving aircraft. Roll the weapon’s number of to hit (ROF) dice for each attack. Any DD roll equal or greater than the target’s armour rating causes a point of damage.

The capability of air defence systems varies. SAMs may fire at any detected aircraft or missiles attacking any friendly ship within 6”. AA may fire at any aircraft or missiles attacking that ship. AA may fire at any enemy aircraft or missiles that attack the carrying unit in a single turn. SAMs may only be fired against one enemy attack in a single turn.

Anti-Submarine Attacks:

If a Patrol or ASW aircraft armed with an ASW weapon detects a submarine it may attack it immediately in the Attack Phase. The attack cannot be stopped by the sub. Roll a number of “to hit” dice equal to the ROF for the aircraft in an ASW role. Use the ship/submarine “To Hit” table and the firing unit’s Sonar rating to determine the To-Hit number for each dice. Each hit inflicts the indicated number of hits as damage (Dmg).

7.5 Ship Launched Attacks

Ship attacks include ship missiles versus aircraft (SAMs, AA) other ships (SSMs, SCMs) or land targets (SCM); guns versus ships or land targets; torpedoes (TT) versus ships or submarines, and ASW versus submarines. All targets must be within range and detected before firing. This is automatic for Visual land, ship and air targets within the visual horizon.

Surface Missile Attacks (SSM, SCM):

Ships, submarines, land and air units may fire Surface to Surface Missiles (SSMs) at any detected enemy ship within range of the missile provided. The target must have a Detection Marker to be fired at. If the target is not currently within detection range of the firing unit, its helicopter or UAV/UUV, the firer must make a Skill Roll (Trained 4+) to acquire the target tracking data and fire SSMs. After launching, place markers for the SSM attacks next to each target ship, with each SSM rate of fire (ROF) representing a missile. Surface Cruise Missiles (SCM) are treated the same as SSMs except that SCMs may also cross land and fire at land targets.

Target ships and any eligible supports in range must detect incoming SSMs to fire in defence. Make a Skill Roll to detect missiles in time to react. AA may be fired at SSMs by the target ship. SAMs may be fired at SSMs by a friendly ship within 6" of the SSM target ship. AA may be fired at any attack each turn. SAMs may only be fired once per turn. Remember to allocate all permissible defensive weapons before starting to roll for hits. In real life these decisions are made in seconds. Any weapons not allocated before starting to roll dice are assumed to have been forgotten and may not be fired at that attack.

The "to hit" score for AA and SAMs fire at SSMs is determined by the Radar ratings of the firer. Stealth scores for SSMs are 0 unless they are within 12" of an EW aircraft with a jamming rating (Stealth "All+1").

- All hits from defensive fire by SAMs, and AA destroy one attacking missile.
- After defensive fire all surviving SSMs roll to hit their target.

SSM Hit Table

Firer Radar vs Target Stealth	-3	-2	-1	Even	+1	+2
Die Roll to hit	NA	6	5+	4+	3+	2+

7.5.1 Gun Attacks

Ships in visual range (6") of ship or ground targets may fire gun attacks. Unlike SSMs, friendly ships do not block gun LOS. Naval guns can fire over obstacles in between. Gun attacks may not be intercepted by defensive weapons. Use Gun firer radar and target Stealth ratings to determine "to hit" scores. Modifiers are:

- Crack Crew +1; Green crews -1,
- Bad Weather -1.
- Firing at Aircraft Carrier, Fleet Auxiliary, tanker or Cargo ship: +1

7.5.2 Torpedo Attacks

Torpedoes may be fired at ships or submarines. Some torpedoes are designated as only able to fire at ships (TT ship only) or only able to fire at submarines (ASW). Torpedoes may not be intercepted. Each ROF represents one torpedo fired.

- Roll to hit number based on Target Stealth and firer Sonar as per table below.
- If target at different depth level -1; target uses Decoy -1; firer uses UUV +1.

Torpedo Hit Table

Sonar vs Stealth	-3	-2	-1	Even	+1	+2
Die Roll to hit	NA	6	5+	4+	3+	2+

7.5.3 Anti-Submarine Attacks (ASW)

These attacks represent a variety of different Anti-submarine weapons (ASW) used by ships against subs, such as conventional depth charges, depth charge-throwing mortars (e.g. Limbo), rocket depth charges (RBUs) and ASW torpedos. ASW attacks have a range of 6" and cannot be intercepted.

- Roll to hit number based on Target Stealth and firer Sonar as per table below.
- If target at different depth level -1; target uses Decoy -1; firer uses UUV +1.

ASW Hit Table

Sonar vs Stealth	-3	-2	-1	Even	+1	+2
Die Roll to hit	NA	6	5+	4+	3+	2+

Surface Combat Example

An Arleigh Burke Class Destroyer (Radar 2) has used its SH60 Helicopter to detect four Chinese Houbei Class Patrol Boats at a range of 22 inches. The Houbeis are unable to detect the Arleigh Burke at this range. The Arleigh Burke fires two Harpoon SSMs (ROF 2) at two of the Houbeis. The Houbei's roll a 2, 3, 5 and 6 to spot the incoming SSMs. The target Houbeis fire PDMs at each incoming SSM. They need a 4+ (SSM EW = 2; PDM EW = 2) to hit. They roll a 3 and a 5, shooting down one missile. The remaining SSM needs a 4+ to hit (EW 2 vs 2) and rolls a 4, hitting and sinking one Houbei. The Houbeis cannot fire back as the Arleigh Burke is unspotted

The next turn the Houbeis close to a range of 12 inches. They are now within Radar range and roll 2, 3 and 6 for spotting, detecting the Arleigh Burke. In firing the Houbeis have first initiative. They fire as a squadron 6 (ROF 2 each) CM803 SSMs (Radar 1) at the Arleigh Burke. The Arleigh Burke fires its AA in defense. It has a SAM rating of 6 and an AA rating of 4 and Radar rating of 2. It rolls six dice for SAMs and needs a 3+ to hit the SSMs. It scores 5, 6, 6, 1, 2, 2 for 3 hits, leaving 3 SSMs. The AA now fires with ROF 4, needing a 4+ to hit. It rolls 1, 3, 3 and 5 for another hit. Two remaining SSMs now attack the Arleigh Burke (SSM Radar 1 vs ship Stealth 0). They need a 3+ to hit. They roll 2, 5 for a hit! The Arleigh Burke now takes 1 point of damage.

7.6 Submarine Launched Attacks

Submarines may fire a range of weapons including torpedos (TT), guided torpedos (TT), surface to surface missiles (SSM) and rocket launched anti-submarine torpedos (ASW). Submarine launched missiles may be shot down by defences in the same fashion as for ASMs and ship launched SSMs. Other submarine launched weapons may not be intercepted. Each AD represents one torpedo or missile.

- Roll Target to hit with TT (-1 from target's Bow/Stern arc, +1 if range < 3 inches).
- Roll vs comparative EW ratings to hit for all other attacks. For each hit roll damage dice.

Submarines firing weapons from their torpedo tubes create noise and the risk of detection. After a submarine launches an attack roll 4+ for detection by any one enemy ship within sonar range (Silent submarine -1, Noisy submarine +1, Sub Hunter +1).

7.7 Land Combat

Shore Batteries:

Guns and missiles may be mounted in shore-based batteries. These may include SAMs, PDMs, SSMs and Guns (artillery) typically of 4" or 5" in calibre. They may fire at any Land, sea or Air unit in range.

The Speed, damage (Hits) and weapons attributes of Land Units are listed for each nation in the Fleet list.

Land Unit Combat:

Land units such as Marines automatically capture air bases and destroy land batteries within 3" if unopposed. If both sides have Marines within 3" land combat is resolved in Initiative order. For each Marine unit, select an enemy unit within 3". Roll a die. On a 4+ the unit is destroyed. After land combat is concluded any enemy land batteries within 3" of a surviving marine unit are destroyed.

7.8 Nuclear Weapons

The US, UK, Chinese, Russian, Indian and Pakistani Navies may purchase nuclear weapons for 20 points each. Ships with weapons able to deliver nuclear warheads, are indicated with a *N. Players secretly record which weapon system on which ship, sub or air unit carries a nuclear warhead. Even if purchased, use of nuclear weapons requires political approval. If a player wishes to launch a nuclear warhead during a turn, announce it at the start of the Attack Phase. On a roll of six launch is approved!

Conduct attacks with nuclear armed weapons as normal. If a hit is not achieved the nuke does not explode. If a hit is achieved the target is destroyed automatically. Aircraft and helicopters within six inches are destroyed. Ships, submarines and land units (Batteries or Marines) within six inches roll (six less the range) Damage Dice.

8. Damage

Recent naval combat in the Ukraine War has demonstrated that modern warships have limited ability to survive hits from large scale naval weapons. The damage system has been greatly simplified as a result.

At the end of a units' attacks, total the combined Damage Ratings and compare to the target Hull/Hits rating:

- If the total damage exceed the target's Hull/Hits total it sinks or is destroyed.
- If the total points equals or exceeds 1/2 the target's Hull/Hits the target is crippled.
- If the total points equals or exceeds 1/4 the target's Hull/Hits the target is damaged.
- If an already damaged unit is damaged again, it is crippled.
- If an already crippled unit is crippled again, it is sunk or destroyed.

Damage Effects:

- For any damaged unit, the ratings for Radar, Sonar and Stealth are all -1.
- For any crippled unit, the ROF for all weapons is halved, rounded down.

9. End Phase

Damage control is vital to preventing the total loss of ships that have been damaged and are on fire. Skilled crews have more disciplined and better trained damage control teams. Destroyed aircraft are lost for the game. Damaged aircraft may be repaired while being readied for relaunch. Hull damage points on ships and subs cannot be repaired, but damage to weapons and non-vital systems can be.

9.1 Damage Control

In the end phase, for each damaged ship or sub, make a Skill Roll to repair damage.

- Crippled ships or subs, and damaged subs operating at deep depth may not be repaired.
- Destroyed units cannot be repaired.



RTS Moskva crippled after two SSM hits, Black Sea April 2022 (Russian MoD)

9.2 Check Morale

Check Morale for any submarines, squadrons or fleets that have taken more than 50% losses. For any squadron or fleet that has suffered more than 50% of its units being crippled and/or sunk, make a Fleet Roll (Veteran 3+, Average 4+, Inexperienced 5+) or the squadron or fleet leaves the game. For any submarine that has taken more than 50% damage also make a Skill Roll or the submarine leaves the game. If a squadron retires all remaining ships in it immediately turn towards their entry board edge moving at the maximum speed of the slowest ship in the squadron. If a fleet retires the opposing fleet wins the game.

Crippled ships that have been detached from a squadron and are retiring towards their entry edge do not count as losses for morale purposes if they safely leave the table via their entry edge.

9.3 Remove Detection Markers

Remove Tracking/Detection markers from ships or subs with no undamaged enemy within 12”.



Target ship HMAS Torrens sunk by HMAS Farncombe, 1999 (Royal Australian Navy)

10. Fleet Choices

10.1 Point System

Players select their fleet from the list for a given country to an agreed point total. There may be combined fleets from allied nations. These may not gain initiative bonuses.

Anywhere from 100 to 200 points should give an interesting game. Games larger than 200 points will heavily favour large carrier forces.

Each fleet entry lists the number of each ship in service in a given year in brackets e.g. Constellation 2030(20), means there were twenty ships in the class and they may be purchased in 2030 scenarios only.

Command Ratings and Crew Quality

Crew quality for most ships is Average (Skill Roll = 4+). Veteran navies may select up to 1/3 of their ships, including squadron flagships, as Crack Crews (Skill Roll = 3+). Inexperienced navies must select 1/3 of their ships and subs, including squadron flagships, as Green Crews (Skill Roll = 5+). Note that crew quality in some navies has declined since the end of the Cold War. This is because declining budgets has meant less training or time at sea.

Veteran Navies = UK, Australia, Japan; Cold War USA, Canada, Netherlands and Sweden

Average Navies = Modern USA, Other NATO, Israel, India, Egypt, Cold War Soviet, Korea

Inexperienced Navies = Argentina, China, Pakistan, Russia, Syria, Mid-Eastern, other Asian

10. Setting Up the Game

10.1 Setting up the Playing Area

Some real world sea areas that may see naval conflict are included. Otherwise generate random sea terrain.

First set up the area over which the game will be played. A table area of six feet by four feet is recommended. Players may choose between a coastal sea (island, reefs and shorelines involved) or Deep Ocean (islands only). Add any Islands, or coastlines needed. Define areas of shallow water near islands or shorelines, and in open sea areas. Remember it is possible to get deep water adjacent to islands and shorelines (eg fjords). The total area of islands and shallow water should not exceed one quarter of the table. Coast should be up to six inches wide. All other features should be 6" to 12" across (or long for reef). Leave a gap of at least 3 inches for ships to move between all features. Reefs block any sea movement.

As an option, players may roll a dice. The higher scorer is the first player with the initiative and sets up the battle area. The other player then chooses which table edge to deploy from. The first player deploys from the opposite table edge. Alternatively roll a die for map features:

Random Scenario Sea Terrain Table

Die Roll	Location	Description of terrain on table
1	Deep Ocean	Island in centre of table; water Deep except 1 area of shallow water
2	Deep Ocean	Island in centre of table; water Deep except 3 areas of shallow water
3	Deep Ocean	Island in centre of table; two other islands; water Deep ex. 3" of islands
4	Coastal	Coast on table edge; island in centre, shallow water within 6" of Coast
5	Coastal	Coast on table edge; two islands in centre; two shallows
6	Coastal	Coast on both long table edge; three islands in centre; three shallows

10.2 Determine Weather

Roll for the weather and sea state for the battle. This affects searches, sea and air movement.

Die Roll	Weather	Effect
1	Clear	
2	Clear	
3	Clear	
4	Cloudy	Air Visual range halved (12nm = 6")
5	Rough	Visual & Radar range halved; Air roll to launch and land
6	Storm	Search range halved, No air movement; Patrol boats in port.

10.3 Determine Mission

Naval forces are expensive to operate and do not go to sea without a reason. Roll on the table:

Die Roll	Mission	Parameters
1	Sea Control	Have more ships remaining on table than enemy at game end.
2	Sea Denial/ Patrol	Have no enemy ships or subs in their half of the table after 12 turns
3	Raid	Attacker must destroy enemy battery on central island
4	Convoy	Attacker must exit at least half convoy ships off opposite table edge.
5	Landing Force	Have unopposed land unit on central island after 12 turns
6	Fleet Action	Sink or cripple more enemy ships than you have lost after 12 turns

Standard Mission Descriptions

Sea Control

- Roll for initiative. The player with initiative chooses a table edge, deploys first and moves first.
- Each player deploys all their forces in their own half of the table, but not within 6" of enemy
- Air patrol and CAP units (only) may begin the game airborne
- A player wins if they have more ships on the table than the enemy after 12 turns

Patrol

- Roll for initiative. The player with initiative chooses a table edge, deploys first and moves first.
- Each player deploys in turn half of their ships, submarines and air units in their half of the table
- Air patrol and CAP units (only) may begin the game airborne
- Units on the table must move at cruise (3") and may not change direction until enemy are detected or the controlling player removes the contact marker and reveals the miniature.
- Each turn players roll a die for units off table. One enters on the rear edge on a 5+. Add one extra die each turn. Players may delay ships to enter them later as a task force. Add one decoy per unit.
- A player wins if there are no enemy ships or subs in their half of the table after 12 turns

Raid

- There must be an island or coastline on the defender's rear table edge.
- The defender deploys half of their units and a battery in their half of the table
- The attacker deploys all of their units within 12 inches of their table edge
- Attacking air units and defending CAP deployed at the start may begin the game airborne
- Each turn the defender rolls a die for each unit off table. It enters on the rear edge on a 5+.
- The attacker wins if the battery is destroyed after 12 turns

Convoy

- The Attacker deploys all of their sea units and convoyed ships within 12" of their table edge
- Attacking air units deployed at the start may begin the game airborne
- The defender starts by moving half their forces onto the table from any other table edge.
- Each turn the defender rolls a die for each unit off table. It enters on their rear edge on a 5+.
- The Attacker wins if over half the convoyed ships exit the opposite table edge after 12 turns

Landing Assault

- There must be a large island covering the centre of the table. Add one marine and battery to the defender and an amphibious assault ship (LP, LPD or LPH) and marine to the attacker.
- The defender deploys all their sea units in their half of the table with land units on the island
- The attacker deploys all their units (sea and air) within 12 inches of their table rear edge
- Attacking air units (only) may begin the game airborne. The attacker moves first.
- The winner is the side that has an unopposed marine (land) unit on the central island after 12 turns

Fleet Action

- Each player deploys all their forces within 12" of their entry edge
- Air units may begin the game airborne
- A player wins by sinking or destroying more enemy ships or subs than they have lost after 12 turns
- For loss purposes each carrier or nuclear submarine counts double. Each nuclear carrier counts triple.

For all missions roll a die to determine who is the attacker. The defender chooses a long table edge as their entry edge if a coastal battle, or a short table edge as their entry edge if an ocean battle. Unless stated otherwise the attacker deploys first and moves first.

10.4 Rules of Engagement

The degree of force commanders are permitted to use is determined by political constraints beyond their control. Roll a die and apply the following rules.

1, 2 = Limited War – may only fire at identified enemy in visual range; lose game if fire at neutrals

3, 4, 5 = Open War – may fire at contacts or identified enemy;

6 = Total War - may fire first; may use nuclear weapons on identified enemy; lose game if nuke used and enemy fleet not defeated.



HMAS Astute SSN (UK Mod)

11. Missiles at Sea 2030 – Quick Reference Sheet

Turn Sequence

1. Initiative – Dice on which side has initiative. Highest score gains it. Navy Crack +1; Green -1
2. Movement Phase
 - a. Initiative player moves all units (ships, subs, land and air) (squadron move = all within 6 inch of flagship).
 - b. Second side moves all units (ships, subs, land and air) (squadron move = all within 6 inch of flagship).
3. Detection Phase
 - a. ASW Search for submarines in 1" square Sector. Roll "6" for each searcher
 - b. Visual Detection – automatically identify ship, land, air units within 6" range.
 - c. Radar Detection – Detection Roll to identify Ship or Aircraft within 12" (36" for AEW; +6" for UAV)
 - d. Sonar Detection – Detection Roll to identify Ship or Submarine within 6" (SSK in Shallow -1; SSN Deep in Deep -1)
 - e. Place Detection markers on Detected units.
4. Attack Phase
 - a. Initiative player carries out first attack (nominate first land, ship, sub or air unit; air units may attack as squadron.
 - b. Second player carries out first attack (nominate first land, ship, sub or air unit; air units may attack as squadron.
 - c. A player may Pass by nominating a unit that does not attack
 - d. Continue until all attacks are completed; Only AA and Guns may fire more than once in a Turn.
5. End phase
 - a. Damage Control
 - b. Check Morale if 50% losses or more. Fleet roll passed = continue; failed = Squadron retires. All retired = loss of game
 - c. Remove Detection Markers

Movement Phase

1. Ship/Sub moves may turn up to turn rating at no cost at start of move. Turning more than Turn rating halves move distance.
 - a. Units (ships and air) may move as a squadron if within 6" of Flagship/leader. Use leaders Skill level for Skill rolls
 - b. Contact markers move at Cruising Speed (4"/turn)
 - c. Submarines specify if at Periscope Level, Standard or Deep Level when moving
 - d. Movement actions require Skill Rolls: Crack 3+; Average 4+; Green 5+

Detection Phase:

1. ASW Search: Roll a die for each ship/sub/air unit in Sector with Sonar 1+, "6" to detect all hidden subs or identify Contact Markers
2. Visual Detection – Automatic within 6"
3. Sonar and Radar Detection – compare Searcher Radar or Sonar Rating with contact Stealth rating and roll on Table.

4. Unit Hit and Detection Table

Sonar/Radar vs Stealth	-3	-2	-1	Even	+1	+2
Die Roll to hit	NA	6	5+	4+	3+	2+

Attack Phase:

1. Resolve attack one unit at a time. Specify all attacks by a unit before commencing rolling for their success.
2. Targets must be within visual range of the firer (or Radar range for aircraft), or have a Detection marker
3. If no Detection marker on target, the firer must first roll to Detect target, then roll for attack if successful.
4. Air to Air Combat
 - a. Visual Range (Dogfighting) ROF = AA; Skill test to hit.
 - b. Beyond Visual Range (BVR) (6" to 12") ROF = AA; Roll to Hits based on Detection table
 - c. Each hit does one damage; damage destroys Helicopter or forces return of Aircraft unit. Two hits destroys aircraft.
5. Anti-Ship and Land Combat
 - a. SSMS – Skill Roll to acquire Tracking data if firer not within Detection range.
 - i. Fire Defending AA and SAMs to intersect SSMS within 6" of target (Use Hit Table)
 - ii. Roll for surviving SSMS to hit target (Use Hit Table)
 - b. Guns – Roll on Unit Hit and Detection table for each Gun ROF. Crack +1; Green firer -1; Bad Weather -1, CV target +1
6. Torpedo Attacks
 - a. Roll for TT Weapons to hit ship or submarine on Unit Hit and Detection Table. Use target Stealth and firer Sonar;
 - b. Modifiers: Target at different depth level -1; target Decoy -1; firer UUV +1
 - c. Target may roll to detect Firing Submarine after torpedo attack.
7. ASW Attacks
 - a. Roll for ASW Weapons to hit submarine on Unit Hit and Detection Table. Use target Stealth and firer Sonar;
 - b. Modifiers: Target at different depth level -1; target Decoy -1; firer UUV +1
8. Damage
 - a. If Damage > Hull/Hit points target is sunk
 - b. If Damage > ½ Hull/Hit points target is Crippled; If already crippled and crippled again target is sunk.
 - c. If Damage > ¼ Hull/Hit points target is Damaged; If already damaged and damaged again target is crippled.
 - d. Damaged = Radar, Sonar, Stealth -1; Crippled = Damaged effects + ROF of all weapons halved (round down).

End Phase:

1. Damage Control: Make a Skill Roll to remove damage; crippled units and Deep submarines may not repair damage.
2. Check Morale if >1/2 crippled or sunk. Fleet roll passed = continue; failed = Squadron retires. All retired = loss of game.
3. Remove Detection Markers if no enemy within 12" of ship or 6" of submarine or land unit.

12. Future Naval Scenarios

12.1 South China Sea, 2026 – Sea Control or Sea Denial

The Chinese Navy (PLAN) has seized and fortified reefs and islands in the South China Sea. War breaks out as they attempt to exclude rival naval forces from the area. Select forces then roll a die: 1-3 play Sea Control Scenario. 4-6 play Sea Denial Scenario.

PLAN Fleet

Any Chinese force

Quad fleet

Any USN Force

Any Japanese force

Any Australian force (up to 25%)

May add RN Allies (up to 25%)

Deployment

PLAN: Submarines are placed hidden before start of game.

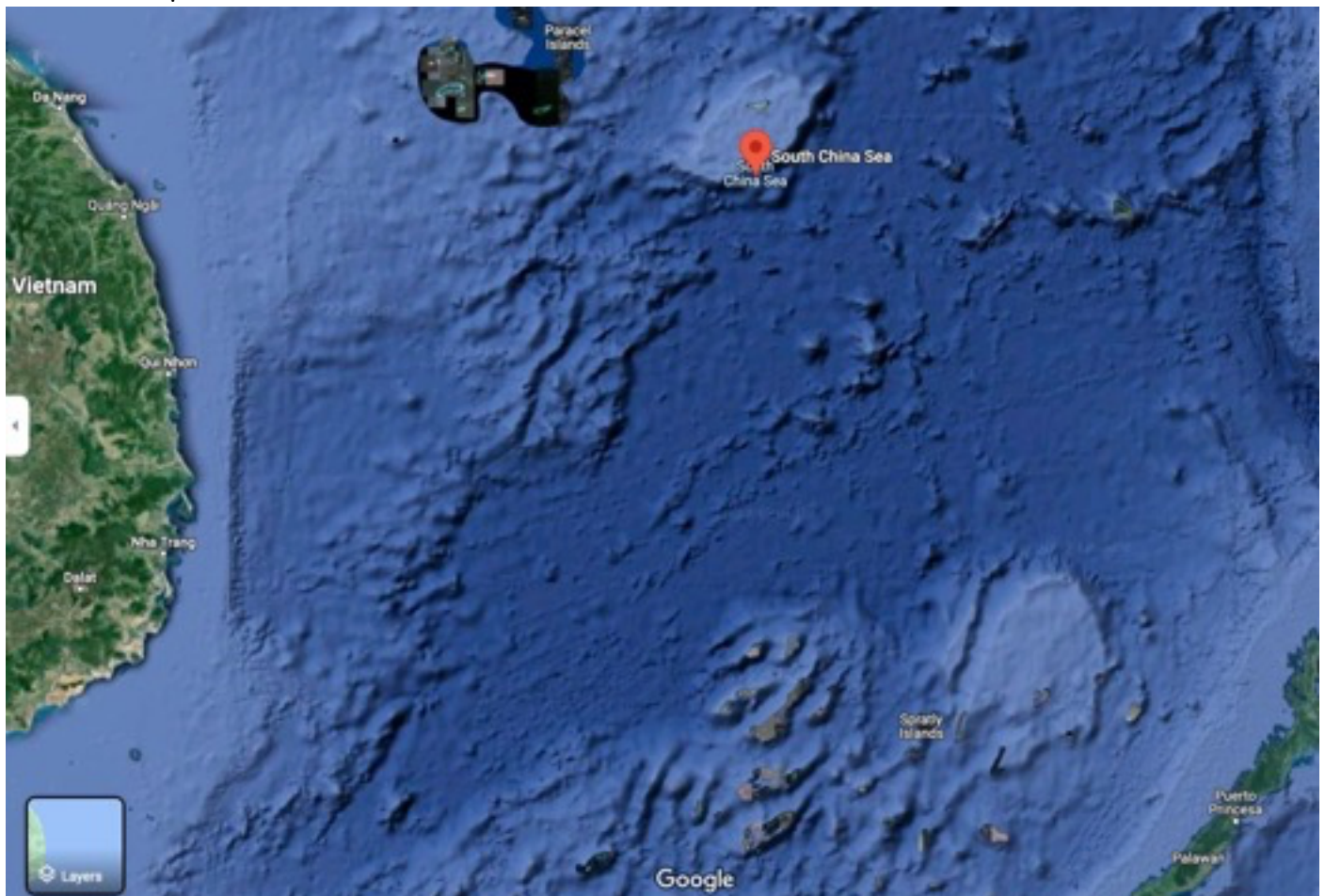
PLAN ships enter from within 12" of NW corner

May place air units and missile batteries on any island.

QUAD: Any Japanese forces enter from within 12" of NE corner

Any USN forces enter from eastern table edge

Any Australian forces enter from within 12" of SE Corner



Terrain

Pale Blue: Very Shallow water allows Periscope Level only for Submarines.

Medium Blue: Shallow water allows Periscope Or Shallow Level for Submarines.

Dark Blue: Deep water allows Periscope, Shallow or Deep Level for Submarines.

Reefs Dark Aqua: Very shallow; ships and surfaced subs only; blocks submerged submarine and land units.

Green (land) Vietnam is neutral; no SSM or air unit overflight permitted.

12.2 Taiwan Strait, 2026 – Landing Force

Xi Jinping has decided the time has come. China will reunify Taiwan with the motherland. The Chinese Central Fleet based in Fuzhou and Nangbo (off map to left) sets out to overwhelm Taiwan's defences and return. The PLAN fleet seeks to land units at the key ports of Taipei, Tainan City or Kaohsiung City.

PLAN Fleet

Any Chinese force

Quad fleet

Any USN Force

Any Japanese force

Taiwanese forces (up to 25%) count as US equivalent Ground and Air units based on Taiwan

Deployment

PLAN: May place air units in Fuzhou and missile batteries anywhere on Chinese Coast.
PLAN ships enter from within 12" of NW corner

QUAD: Any Japanese forces enter from east edge north of Taipei
Any USN forces enter from eastern table edge south of Taipei

Terrain

Pale Blue: Very Shallow water allows Periscope Level only for Submarines.

Medium Blue: Shallow water allows Periscope Or Shallow Level for Submarines.

Dark Blue: Deep water allows Periscope, Shallow or Deep Level for Submarines.

Taiwan Dark Green: High mountainous terrain (>4000m) blocks SSM, ship radar, Helicopter overflight.



12.3 Senkaku Islands, 2030 – Raid

Xi Jinping has decided the time has come. China will reunify Taiwan with the motherland. The Chinese Central Fleet based in Fuzhou and Nangbo (off map to left) sets out to overwhelm Taiwan's defences and return. The PLAN fleet seeks to land units at the key ports of Taipei, Tainan City or Kaohsiung City.

PLAN Fleet

Any Chinese force

Quad fleet

Any USN Force

Any Japanese force

Deployment

PLAN: Submarines are placed hidden before start of game.
PLAN ships enter from within 12" of NW corner
May place air units and missile batteries on any island.
QUAD
Any Japanese forces enter from within 12" of NE corner
Any USN forces enter from eastern table edge

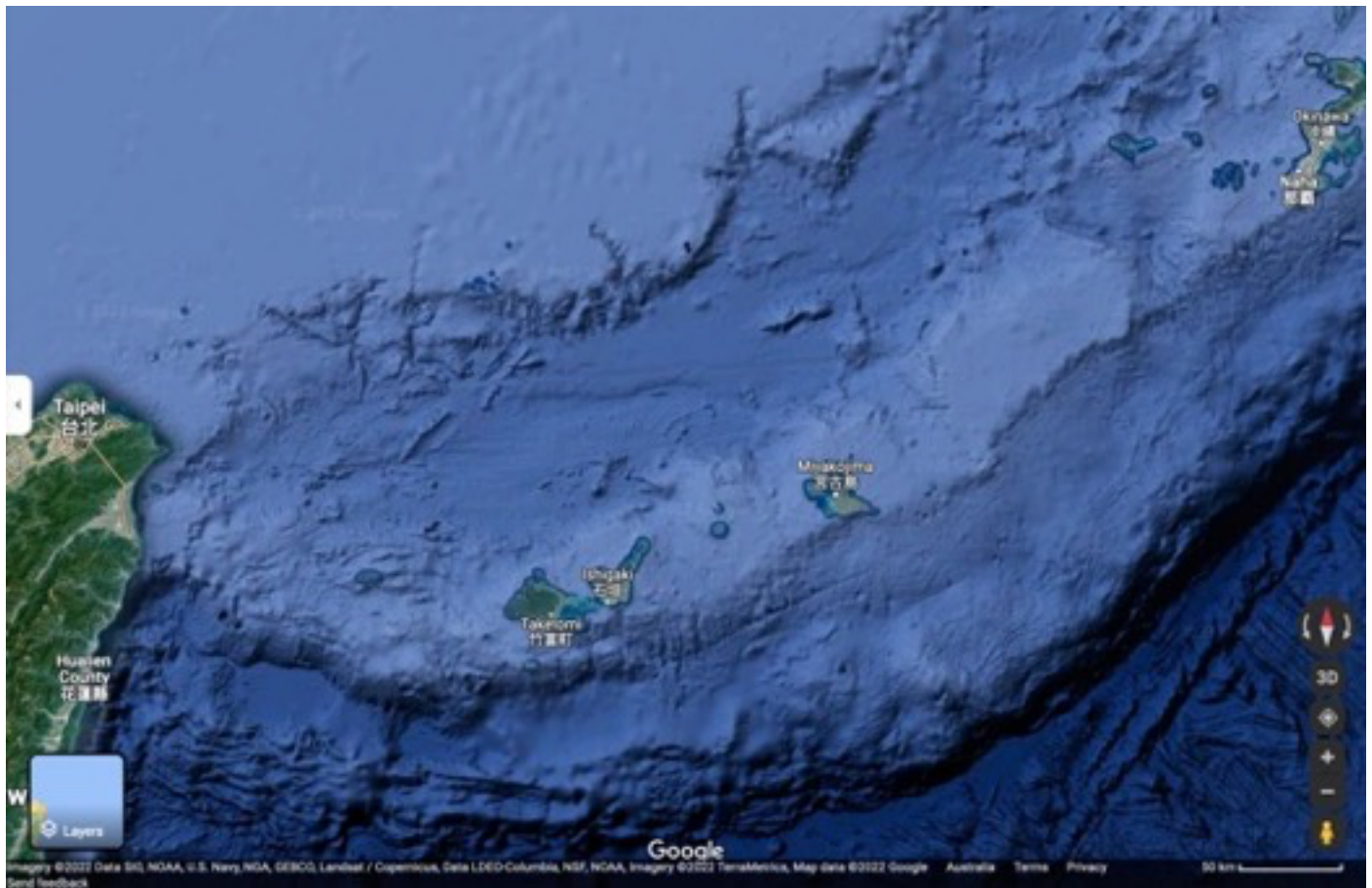
Terrain

Pale Blue: Very Shallow water allows Periscope Level only for Submarines.

Medium Blue: Shallow water allows Periscope Or Shallow Level for Submarines.

Dark Blue: Deep water allows Periscope, Shallow or Deep Level for Submarines.

Taiwan Dark Green: High mountainous terrain (>4000m) blocks SSM, ship radar, Helicopter overflight.



12.4 Philippine Sea, 2030 – Fleet Action

The first Chinese attempt to invade Taiwan in 2026 was unsuccessful. Xi Jinping is disappointed but not deterred. Four years later he tries again. A naval blockade is enforced by Chinese seizure of islands to the north and south. Taiwan is not self-sufficient in food. Continuation of convoys from the east to Hualien on the Taiwanese coast is essential. The US 7th Fleet must stand and fight in the Philippine Sea to protect them. A fleet showdown occurs, but within range of missiles on the Chinese coast.

PLAN Fleet

Any Chinese force

Quad fleet

Any USN Force

Any Japanese force (Up to 50%)

Deployment

PLAN: Submarines are placed hidden before start of game.

PLAN ships enter from within 12" of NW corner

May place air units and missile batteries on any island.

QUAD: Any Japanese forces enter from within 12" of NE corner

Any USN forces enter from eastern table edge

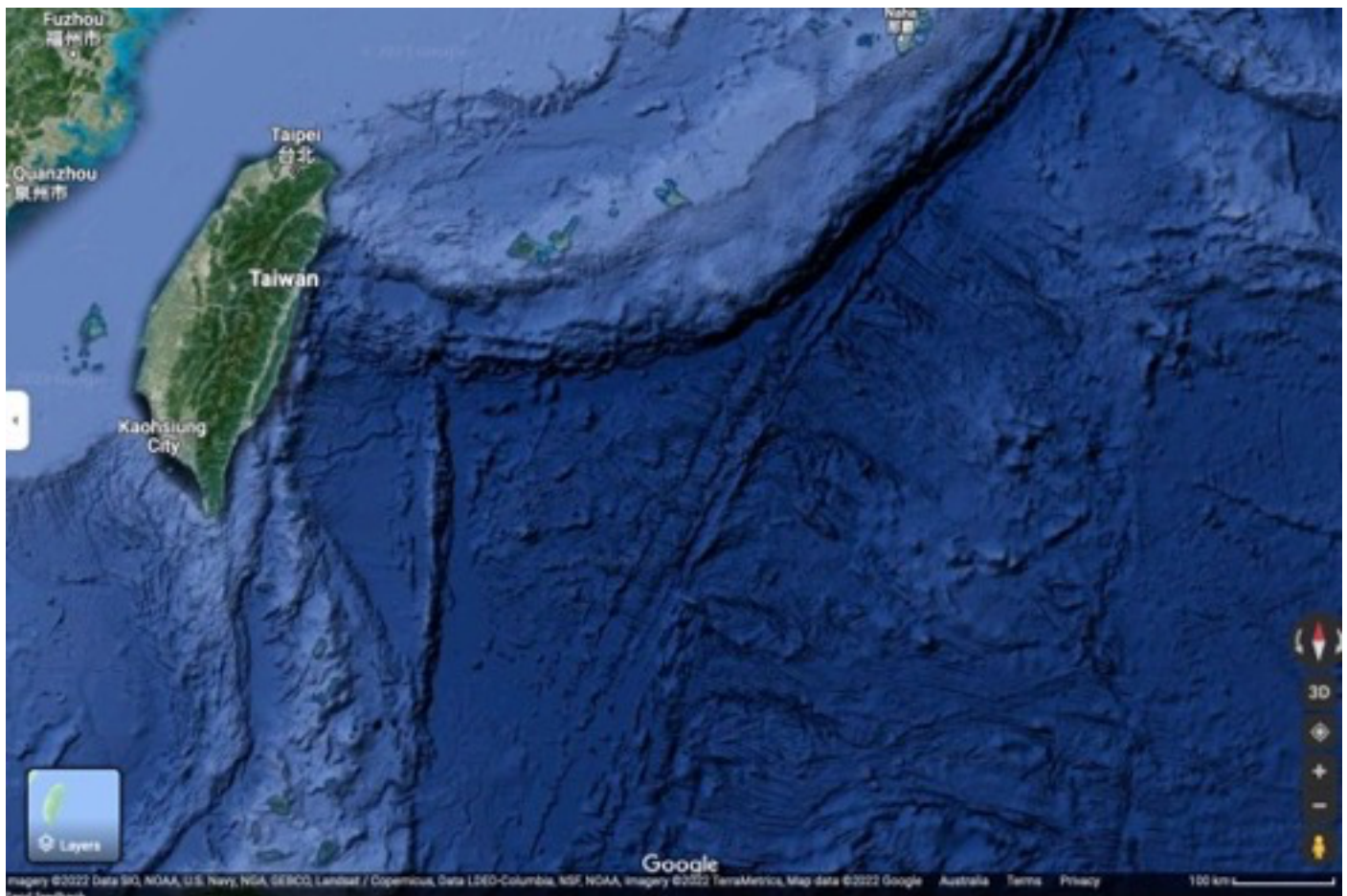
Terrain

Pale Blue: Very Shallow water allows Periscope Level only for Submarines.

Medium Blue: Shallow water allows Periscope Or Shallow Level for Submarines.

Dark Blue: Deep water allows Periscope, Shallow or Deep Level for Submarines.

Taiwan Dark Green: High mountainous terrain (>4000m) blocks SSM, ship radar, Helicopter overflight.



12.5 Molucca Strait, 2030 – Convoy

The Chinese blockade of Taiwan continues with US and Japanese naval forces unable to break it. A counter blockade is mounted to prevent vital oil imports reaching China. Within the QUAD, Indian and Australian naval forces try to blockade Chinese convoys with oil tankers approaching from the Middle East. The convoy must travel through the Malacca Strait and safely exit off the north edge of the table, east of the Riau Archipelago. Singapore, Indonesia and Malaysia are remaining neutral.

PLAN Fleet

Any Chinese naval force with an oil tanker convoy. Possible air and missile support off table to the north.

Quad fleet

Any Indian Navy Force

Any Australian Navy force

Deployment

PLAN: PLAN supporting ships, subs and air support enter along north edge of map

PLAN convoy and escort enters from Malacca Strait on west edge of map west of Singapore

May use air support and long range SSMs from off board islands 12" north of Riau Archipelago (range -12").

QUAD Any Indian forces enter from Malacca Strait on west edge of map west of Singapore

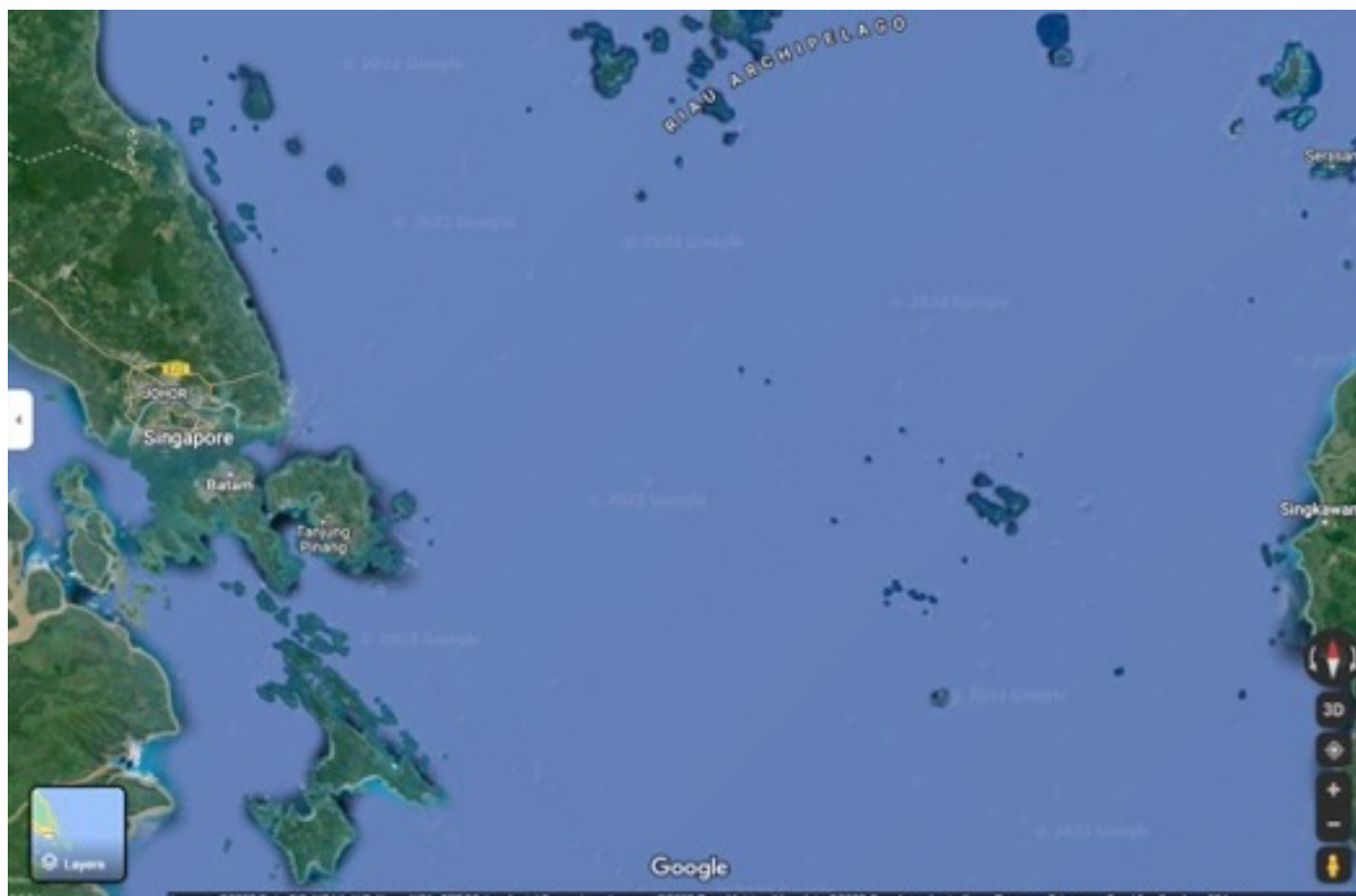
Any Australian forces enter from Java Sea on south edge of map

Terrain

Pale Blue: Shallow water allows Periscope Level only for Submarines.

Reefs Dark Aqua: Very shallow; surface ships and subs only; blocks submerged submarine and land units.

Green (land) Indonesia, Malaysia are neutral; no SSM or air unit overflight permitted.



12.6 Sunda Strait, 2035 – Raid

After their successful conquest of Taiwan, the Chinese navy expands to occupy key bases in the western Pacific. To bottle up Australian forces, China sends an expeditionary force to occupy Cocos and Christmas Islands on Australia's north west coast. Indonesia has declared neutrality in the face of Chinese power and diplomacy. India is busy defending its own sea approaches.

PLAN Fleet

Any Chinese force

Quad fleet

Any Australian Navy force

Deployment

PLAN: Submarines are placed hidden before start of game.

PLAN ships enter from within 12" of NW corner

May place air units and missile batteries on any island.

QUAD: Australian air and land units may be deployed on Cocos and Christmas Islands.

Australian naval units enter from south table edge

Australian submarines may be deployed on table at start in the southern half of the table.

Jindalee Radar: At start all PLAN ships and flying air units are detected and only PLAN subs may be hidden.

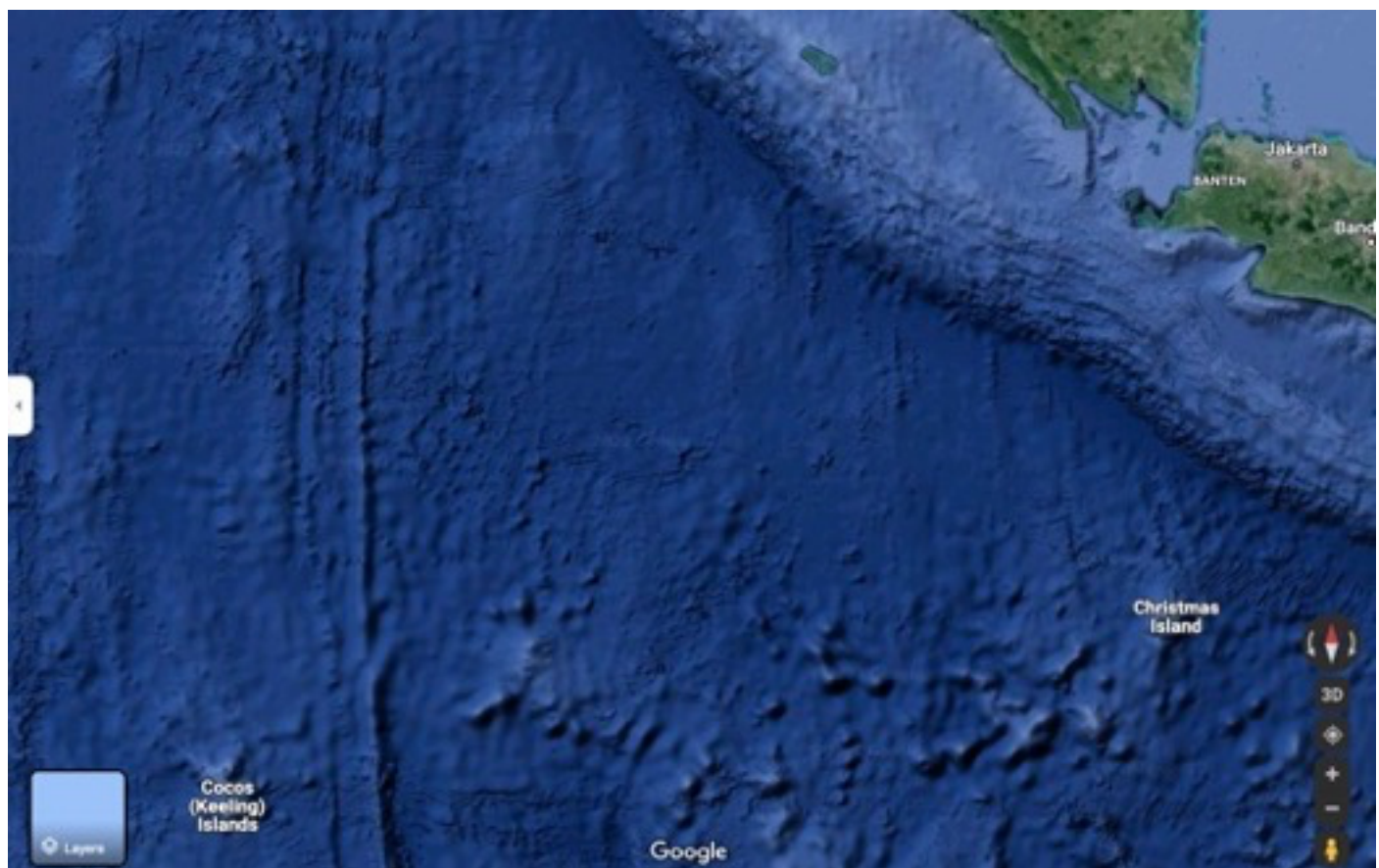
Terrain

Pale Blue: Very Shallow water allows Periscope Level only for Submarines.

Medium Blue: Shallow water allows Periscope Or Shallow Level for Submarines.

Dark Blue: Deep water allows Periscope, Shallow or Deep Level for Submarines.

Java Dark Green: High mountainous terrain (>4000m) blocks SSM, ship radar, no air unit overflight.



12.7 Solomon Islands, 2035 – Sea Control or Raid

As the Chinese navy expands to secure control of the western Pacific it exercises treaty rights to build a naval base in the Solomon Islands. From this base PLAN aircraft will be able to interdict shipping routes from Australia to Japan, Korea and the United States. This will deprive Australia of manufactured goods and advanced weapons, and Korea and Japan of energy and mineral resources. Roll a die. 1-3 play Sea Control scenario. 4-6 play Raid scenario, with Australia trying to raid the Solomons air base.

PLAN Fleet

Any Chinese force

Quad fleet

Any Australian Navy force

Any US Navy allies (up to 50%)

Deployment

PLAN: Submarines are placed hidden before start of game in northern half of table..

PLAN ships start in Solomon Islands

May place air units and land units batteries on Solomon islands.

QUAD Australian air and land units may be deployed on Australian coast in Cairns.

Australian naval units enter from south table edge

Australian submarines may be deployed on table at start in the southern half of the table.

Jindalee Radar: At start all PLAN ships and flying air units are detected and only PLAN subs may be hidden.

Terrain

Medium Blue: Shallow water allows Periscope Or Shallow Level for Submarines.

Dark Blue: Deep water allows Periscope, Shallow or Deep Level for Submarines.

Reefs Dark Aqua: Very shallow; ships and surfaced subs only; blocks submerged submarine and land units.

New Guinea Dark Green: High mountainous terrain (>3000m) blocks SSM, ship radar, no air unit overflight.

