



RULES FROM THE GAME (for PDF Print)

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#1 - AIR UNITS

Air Units

Each counter stands for 4 planes

Air to air factor: ability to attack other planes

Fighters



Air to Ground attack factor: ability to hit ground targets

In Blue:
Can operate on carriers

Level Bombers



Search radius in hexes
Means this unit is currently searching up to this radius around its airbase

Ruggedness: ability to sustain damage

Dive Bombers



Torpedo Bombers



Air to Sea factor: ability to hit naval targets

In Green:
Strategic Bomber



In White/Orange:
Large/Small seaplanes. Managed by the program



Remaining endurance
Number of HEXES it can fly or number of PHASES it can stay aloft before running out of fuel
1 pt is spent per PHASE aloft or 2 pts if moved by 2 HEXES this phase

Payload

TORPEDO

Carried by certain plane models, can only hit ships, lower chances to hit but more lethal

BOMBS

Carried by almost all plane models, attacks both ships and bases, very effective against flight decks but less against ship structures
A fighter equipped with bomb is called a fighter-bomber

DROP TANKS

Usually the default payload
They increase the endurance at the expense of the offensive payload

CAP

Fighters in CAP do not carry drop tanks and thus have a reduced endurance

TRANSFER



























































No armament at all
The best way to rebase from one friendly airbase to another

When you assign a mission to air units, the game selects for you the best payload fitting the mission depending on the distance and the target
You may still have the option to send your fighters as bombers or escort



Air units inventory

	CAP	Drop Tank	Bombs	Torpedo	Transfer	Scout
Boston			<div>1 3 1 2 8 A20</div>		<div>22 A20</div>	<div>1 2 8 A20</div>
Hudson			<div>1 1 1 2 36 A29</div>		<div>54 A29</div>	
Claude	<div>1 1 2 11 A5M</div>		<div>1 1 2 16 A5M</div>		<div>20 A5M</div>	
Zero	<div>3 1 1 29 A6M</div>	<div>3 1 1 42 A6M</div>	<div>2 1 1 21 A6M</div>		<div>52 A6M</div>	
Hamp	<div>3 1 1 24 A6M3</div>	<div>3 1 1 34 A6M3</div>	<div>2 1 1 17 A6M3</div>		<div>42 A6M3</div>	
Rufe	<div>2 1 1 24 A6MN</div>		<div>2 1 1 24 A6MN</div>			
Anson			<div>1 1 1 1 16 Anson</div>		<div>24 Anson</div>	
Flying Fortress		<div>3 1 3 48 B17</div>	<div>3 2 1 3 24 B17</div>		<div>72 B17</div>	<div>3 3 48 B17</div>
Liberator		<div>2 2 2 52 B24</div>	<div>2 3 1 2 26 B24</div>		<div>78 B24</div>	<div>2 2 52 B24</div>
Mitchell			<div>2 2 1 3 20 B25</div>		<div>60 B25</div>	<div>2 3 20 B25</div>
Marauder		<div>2 2 2 36 B26</div>	<div>2 4 1 2 18 B26</div>		<div>54 B26</div>	<div>2 2 36 B26</div>
Jean			<div>1 1 1 15 B4Y</div>	<div>1 1 15 B4Y</div>	<div>22 B4Y</div>	<div>1 15 B4Y</div>

Kate			 1 20 B5N	 2 20 B5N	 30 B5N	 1 S 20 B5N
Jill			 1 1 30 B6N	 1 2 30 B6N	 45 B6N	 1 S 30 B6N
Beaufighter	 2 1 1 21 Beau	 2 1 1 26 Beau	 1 2 2 13 Beau		 32 Beau	
Beaufort			 1 2 1 24 Beau	 1 2 24 Beau	 36 Beau	 1 S 24 Beau
Boomerang	 1 1 8 CA12		 1 1 15 CA12		 20 CA12	
Val			 1 1 2 20 D3A		 30 D3A	
Judy	 3 18 D4Y		 3 30 D4Y		 45 D4Y	
Jake						 1 S 20 E13A
Wildcat	 2 1 13 F4F		 2 1 13 F4F		 20 F4F	
Corsair	 5 1 15 F4U	 5 1 22 F4U	 4 1 1 11 F4U		 28 F4U	
Hellcat	 5 1 14 F6F		 5 1 22 F6F		 28 F6F	
Nell			 1 1 1 50 G3M	 2 50 G3M	 75 G3M	 1 S 50 G3M
Betty		 1 52 G4M	 1 2 1 26 G4M	 2 52 G4M	 78 G4M	 1 S 52 G4M
Mavis						 2 S 54 H6K
Emily						 2 S 64 H8K
Sally		 1 1 1 26 Ki21	 1 2 1 13 Ki21		 39 Ki21	 1 26 Ki21
Oscar	 3 1 17 Ki43	 3 1 22 Ki43	 2 1 11 Ki43		 28 Ki43	
Nick	 2 1 11 Ki45	 2 1 22 Ki45	 1 2 11 Ki45		 28 Ki45	



Lily	 1 1 1 22 KI48	 1 2 2 11 KI48	 33 KI48	 1 2 22 KI48
Helen	 1 1 1 22 KI49	 1 2 1 11 KI49	 33 KI49	 1 2 22 KI49
Sonia		 1 1 11 KI51	 20 KI51	
Tony	 3 1 7 KI61	 3 1 13 KI61	 2 1 7 KI61	 20 KI61
Lightning	 4 1 18 P38	 4 1 26 P38	 3 2 1 13 P38	 32 P38
Airacobra	 1 1 8 P39	 1 1 14 P39	 2 1 7 P39	 20 P39
Kittyhawk	 2 1 17 P40	 2 1 22 P40	 1 1 1 11 P40	 28 P40
Thunderbolt	 4 1 11 P47	 4 1 18 P47	 3 1 9 P47	 22 P47
Black Cat				 2 S 43 PBV
Helldiver	 2 1 3 13 SB2C	 2 2 5 9 SB2C	 27 SB2C	 2 S 13 SB2C
Vindicator	 1 1 20 SB2U	 1 1 2 10 SB2U	 30 SB2U	 1 SB2U
Dauntless	 2 (2) 8 SBD	 2 1 2 16 SBD	 2 2 3 12 SBD	 24 SBD
Seagull				 1 2 13 SOC
Spitfire	 5 1 6 Spit	 5 1 11 Spit	 4 1 6 Spit	 20 Spit
Devastator			 1 1 14 TBD	 1 1 12 TBD
Avenger	 1 1 18 TBF	 1 2 1 9 TBF	 1 1 18 TBF	 27 TBF

Endurance and Ammunition

When the remaining endurance reaches zero, air units may still fly on their fuel reserve, up to 4 hexes. The effects are the following



No effect



10% probability of crash at landing



30% probability of crash at landing



50% probability of crash at landing



70% probability of crash at landing



Eliminated below -4

Because of ammunition depletion, each battle fought reduces all combat factors to zero

Exception: a CAP fighter has a 50% chance to keep its ammunition

Depleted units need to land on a friendly airbase in order to be able to fly more missions at full potential

Airfields

OPERATIVE RUNWAYS

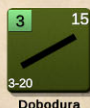
AA value (Heavy - Light)



Life points (5 per RUNWAY)

Coastal defense

They are 3 types of airfields:



Operates ONLY Fighters



Operates any plane
BUT Strategic Bombers



Operates ANY planes

Airfield availability, runways and type depends on the scenario



#2 - SHIPS AND FORCES

Ships

Class: BB, CA, CL, DD
are Surface ships
In white:
the ship has bombarded



Tone



Saratoga

Life points

Hangar capacity
Number of air units (of the same color) the ship may embark

Damage control



Kongo



South Dakota

Surface search radar

Surface combat factors

In white: the ship has Fire Control

Anti-aircraft value
Heavy - Light



Nagara



Akizuki

Loaded cargo

Available torpedo ammunition:
each bar represents a salvo of 4

CV Carrier
CVL Light Carrier
CVE Escort Carrier
TRS Transport
BB Battleship
CA Heavy Cruiser
CL Light Cruiser
DD Destroyer



Atlanta



Mackinac



Seaplane tender



Zuiho



Long Island



Air search radar

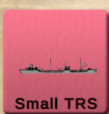
Task Forces and Intelligence

Ships move and fight together in Task Forces (TF)

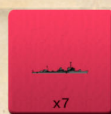
The more Intelligence you gain on a Japanese TF, the more details you get on its composition



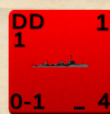
Small



Small TRS



x7



DD 1



Medium



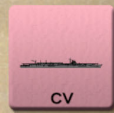
Large Surface



x6



BB 4



CV



1-2 CV



x3



CV 2



Task Forces and Intelligence

Undetected TF are not visible on map and can't be the target of any airstrike

TF are usually detected by air search. Each time a TF is detected, it appears on map and its intelligence may increase by 1 level



Indicates the last observed direction taken by the detected TF

If an enemy task force has not been detected after 3 TURNS (1 at night), it disappears from the map

Enemy TF are displayed in their last observed hex

They may move undetected and hence may not exactly be where you see them on map

If an airstrike or TF arrives at a hex where an enemy Task Force was spotted but the enemy Task Force is no longer there. The marker will be removed from the map

Detach a Task Force

A task group may be detached in any hex if:



There are fewer than 20 friendly Task Forces in play (20 being the TF limit at all times)



There are at least 4 ships in the current TF

When you detach a carrier from a TF containing several carriers, any airborne airstrike of this TF may be split



Merge Task Forces

You may freely merge TF



which are not retiring



which are in the same hex



without disorder point

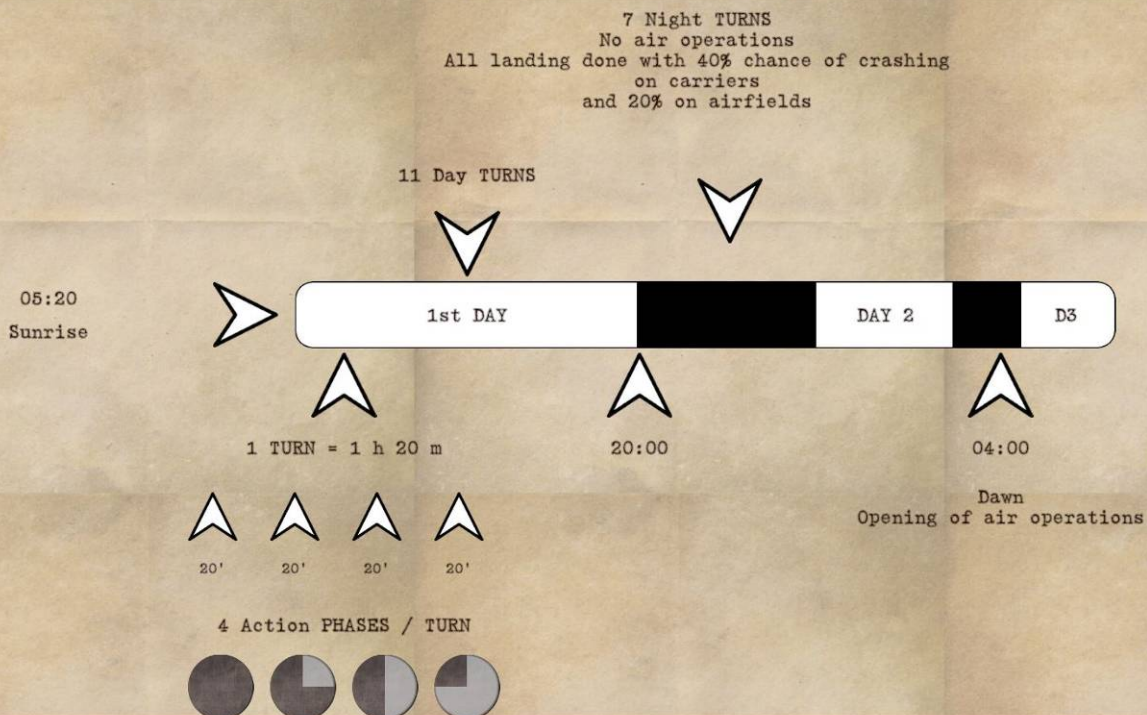


as long as a TF does not contain more than 12 ships

IMPORTANT: A merged TF is not allowed to move this TURN

#3 - SEQUENCE OF PLAY

Sequence of a SCENARIO



Moving faster

You can move the game along faster with a LONG PRESS on



Play a few HOURS without any interaction from your side



The leap forward will stop if the following actions occur: battle, at dawn when air operations open, detected enemy airstrikes or carriers, unload or bombardment

Planned air operations will be performed and airborne units will safely land

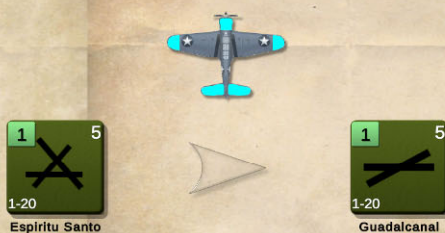


#4 - AIR OPERATIONS

VIDEO TUTORIAL ON YOUTUBE : <https://www.youtube.com/watch?v=pJBbHqAlNso>

Transfer

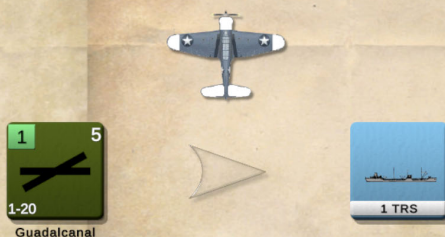
You may rebase air units between 2 allied bases
Select the destination base from the STRIKE box of the start base



Transfer missions work like airstrikes and the destination base is always found
Transfer missions are moving only 1 hex per PHASE

Long-range CAP

CAP units may temporarily protect another airfield or TF
Select the target to protect and the number of fighters to allocate to this mission from the CAP box of the start base



Long-range CAP units will move towards the target and act as CAP as long as it remains above it

Fighters will return to base if out of ammunition or if forced by remaining endurance or daylight

After completing their mission, air units will be automatically reallocated to CAP, except for fuel-limited airfields



Repetitive Missions

Select a stack of CAP/searching air units to make their mission repetitive



CAP mission are repetitive by default, except on airfields with limited fuel supply

The repetition stops:

- By a new selection of the air units
- When cancelling the mission by moving the air units to the hangar or to another kind of mission
- At night

Limitations

The following factors limit air operations

- A carrier cannot land and launch air units within the same PHASE
- With several missions at the same time or with a large number of units, the resulting traffic on deck/runway, elevators or in the hangar will slow down operations
- A single-wave air strike will take more time to mount
- A carrier or an airfield may take damage slowing down or hindering operations
- Air units may not land or launch from a carrier on fire, crippled or with a damaged flight deck
- An airfield without any operational runway may not launch aircraft but may still land them with a risk of crash

On average, each carrier or runway may operate 8 air units per PHASE
Lexington, Saratoga, CVL and CVE have fewer elevators and usually manage 6 units per PHASE



Some airfields have a limited fuel supply
Each launched unit burns 1 fuel point

Traffic

The flags above the deck/runway are reflecting the state of the traffic on air operations



Operations proceed optimally



Traffic-jam, units are somehow hindering each other. The number indicates the cumulated delay in multiple of 20 minutes. Ex: 2 may mean that a unit has been delayed by 40 min. or 2 units may be delayed by 20 min. Play with priority or reduce the number of aircraft trying to launch



No operation is allowed

Ready on deck/runway

OPTIONAL. You might want to prepare and keep as reserve on the deck a few air units for a quick reaction or opportunity
Just move them on DECK/RUNWAY box and select a payload
Such air units will be very quick to take off



Maintaining air units on the deck/runway may reduce the pace of the air operations especially for carriers.
Choose well the payload because changing it once on the deck, will take a lot of time



Automation

Now the game will manage automatically without any action from your side



The preparation and the launch of missions
The fighters will show up in the CAP box once aloft



The relentless cycle landing-refuel-launch of CAP fighters
This will ensure a constant cover over the airbase
Emphasized by the blue circular arrow on air units



If you want a mission to have precedence over others, set it as top priority
Select on the flag in the Air op screen to do so

To cancel all or part of a mission, drag the units to the HANGAR
You may also reallocate them to a different mission

Carrier-based air units will always attempt to land on their original carrier first



#5 - AIR SEARCH

VIDEO TUTORIAL ON YOUTUBE : <https://www.youtube.com/watch?v=PiGg4qyPJAg>

Search for enemy Task Forces

There are several ways to search for enemy TF



You may send search units from airfields or carriers



US surface TF and all Japanese TF will send seaplanes from capable cruisers. Managed by the program



Seaplanes are also launched from seaplane bases which are not visible to the player and again managed by the program



Airstrikes will attempt to detect enemy TF when arriving at the target area but also while en-route



Each TF adjacent to enemy Task Force or airbase may be detected



Coastwatchers may detect TF and airstrikes in their hex. They are not visible on map. Pro-US are located in all large Solomon islands and in New Guinea. Pro-Japanese are in New Britain



Unloading transport TF are immediately detected during daylight. A TF performing naval bombardment is automatically detected

Air Search formula

The chance is determined by this formula

$$4 \times N \times 40 \times (M + 1) \times W / (30 \times (a + D \times A / 60))$$



D = distance from the searching airbase to the searched TF



N = number of searching units able to reach the TF. Non-scouts units count for half



A = arc of the search pattern



W = weather effect in the TF hex (0.2 Storm, 0.35 Rain, 0.5 Overcast, 0.8 Clear before July 42, Otherwise 1)



a = 1 or 0 if 360° arc



M = Sum of modifiers:



+0.01 per ship above the first



+0.10 if the TF contains at least one BB/CV



+0.50 if the TF has an oil leak



Detection of scouts

When an air unit detects a Task Force, it may be detected itself

A D10 is rolled. The scout is detected on a 6 or more



- +1 if CAP above the TF
- +2 if at least a US carrier with radar
- +1 if at least a ship with air radar
- ☁ -2 overcast
- ☔ -3 rain
- ⚡ -4 light storm
- +1 if the scout was already shadowing this TF
- A natural 1 is always a failure

Without detection or CAP, the scout stays in the surroundings to shadow the TF
This TF will be automatically detected on the next PHASE

The plane symbol reminds the presence of a shadowing scout around the TF



Interception of scouts

Scouts may be intercepted by CAP provided they have been detected

A D10 is rolled



- +1/4 per fighter in CAP. Random rounding and maximum +2
- + air-to-air rating of the best fighter
- - air-to-air rating of the scout
- - scout ruggedness
- +1 US CAP (+2 against Japanese human player)
- ☁ -2 overcast
- ☔ -3 rain
- ⚡ -4 light storm

Results

- < 6 Chased away
The air unit resumes its patrol but may not shadow the Task Force
10% chance to transmit partial information on the TF, 20% no info transmitted at all
- 6-8 Abort
The scout returns to base and may not search until it lands
20% partial info, 30% no info
- 9-12 Damaged
Aborted mission and the air unit gets damaged
30% partial info, 40% no info
- 13+ Destroyed
The air unit gets immediately destroyed
40% partial info, 50% no info



Partial information: the TF position will be approximative

- up to 1 hex around if the TF has already been visible on map
- up to 4 hexes otherwise



Intelligence upgrade

When a Task Force is detected, its intelligence level may increase by 1

One D10 is rolled per current intelligence level
The level increases is the lowest die at least equals 6



- +2 if a scout is shadowing this TF
- +1 if the detection has been achieved by a TF equipped with surface radar
- +1 with clear weather if the detection was performed by an air unit
- ☁ -1 rain
- ⚡ -2 light storm
- -3 if the detection has been done by a coastwatcher
- -2 at night
- Automatic for a TF which was not visible on map (level 0)

A TF vanishes from map and its level becomes zero

- After 4h after last detection at day
- After 1h20 after last detection at night

Detection of Task Forces from the ground

TF may be detected by adjacent enemy forces, airfields or coastwatchers

Distance	0	1
TF or airfield	60 %	30 %
Coastwatcher	30 %	

Modifiers

- -10 US coastwatchers in 1943
- +20 with surface radar
- -20/-10 at night US / Japanese
- +10 TF with seaplane at day or Japanese



Search radius

Each searching air unit covers an arc circle shape centered on its airbase
Its search radius is displayed on top right
Scout planes have a horizon of 1 hex from their search radius depending on their journey



This TBF has just started its mission and may search all hexes at 5 or 6 hexes around its carrier
Planes look on the side and in front of them
The search radius increases by 1 each PHASE



This TBF has reached its turning point and may search all hexes at 8, 9 or 10 hexes around its carrier
Here planes look in all directions



This TBF is returning and may search all hexes at 5 or 4 hexes around its carrier
The search radius decreases by 1 each PHASE



Fighters may not search as they lack required radio equipment and extra crew

The search radius is limited by the remaining endurance, nightfall and the maximum search radius you may define

#6 - AIRSTRIKE

VIDEO TUTORIAL ON YOUTUBE : <https://www.youtube.com/watch?v=mK3upia-8pg>

Allied Airstrike Status



The strike has not yet reached its target



The strike has successfully contacted its target



The strike has failed to find its target



The strike has contacted the wrong target



Long-range CAP



Transfer mission toward a friendly airbase



Landing air units

Radio efficiency

Radio transmission has an impact on:



The probability for an airstrike to be informed of the last position of its target



The probability to change the target of an airstrike



The probability to recall an airstrike

The efficiency is equal to 100% minus 10% (15% for the Japanese) for each hex to the closest radio source
A source is a friendly Task Force, airfield



Recall and Target change



Air units will abort and return to start base
The chance of success is equal to the radio efficiency
Automatic for transfers, airstrikes returning to base or long-range CAP
One attempt allowed per PHASE



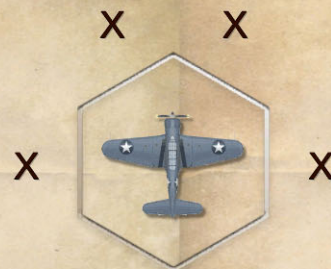
Air units will change target or return base
One attempt allowed per PHASE

Detection of enemy Task Forces

An airstrike may detect enemy TF

➤ En-route
Only in forward hexes (marked with a X)

➤ When reaching its target
In all adjacent hexes



The detection chance is 200% in the airstrike hex, 100% in adjacent hexes
Modifiers:

- x Weather in TF hex (0.2 storm, 0.35 rain, 0.5 overcast, 1 clear)
- +1% per ship in the TF above the first
- +10% if the TF contains at least a BB/CV
- +50% if the TF has an oil leak

Contacting the target



Each phase, each airstrike moves 2 hexes closer to the last known position of its target. Each time the target is successfully searched, if the radio is efficient, then this position is updated.



Air units will abort the airstrike if they have just enough endurance to return home. A little risk of 2 pts of endurance is granted against a target CV or when the target is detected in an adjacent hex.



If the airstrike manages to reach its target, it attacks it. Airfields are automatically found because they don't move.



If unsuccessful, the airstrike attacks an enemy detected Task Force in adjacent hexes.



Otherwise, it will attempt to follow the last known direction taken by the TF to a maximum of 2 hexes.



If nothing is found, then the airstrike returns to base without attacking.



On its way back, it will attack any enemy TF detected and in the same hex.

Warning

Radar gives a tremendous advantage to the Allies.

Each time an air strike moves within 4 hexes of an enemy airbase, it may be detected. Detected air strikes are visible on map and leave time for the defense to react.

Distance	0	1	2	3	4
US Airfield with radar	90 %	70 %	50 %	30 %	10 %
US carriers with radar or Japanese airfield with radar	80 %	60 %	40 %	20 %	
US surface with radar, US airfield or Japanese carrier with radar	70 %	50 %	20 %		
Japanese surface ship with radar or Japanese airfield	60 %	30 %			
Ship without radar and coastwatcher	30 %				



+10 for the US in 43



-20 against an air strike containing less than 3 air units



+10 against an air strike containing more than 9 air units



A coastwatcher in an enemy airfield hex use the row above

Contact

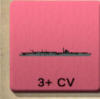
When target is successfully contacted by an air strike



Then a Naval Air battle starts



Target immediately becomes detected and visible on map



Target Intelligence increases to level 3

Contact chances are good if



The airstrike contains a lot of units



The last known position of the target is frequently updated through an efficient search

#7 - NAVAL MOVEMENT

Naval Move

1. Activate Map View in the menu



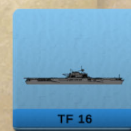
Each ACTION PHASE, you may move a fraction of your Task Forces
Allowed number is shown on the naval move icon in the menu
(If you don't have at least 4 TF, you won't see a number every Phase)

The number of allowed moves this PHASE is shown in the blue badge. On the last PHASE of the TURN, this number is displayed in a yellow badge for TF on autopilot, or in a red badge for other TF

2. Select a TF to move



4. DRAG & DROP



5. The TF is marked as moved
It will be able to move again NEXT TURN

3. Valid destination hexes are highlighted

Naval Move Restrictions



No move into or through ground hexes



No move through reef hexsides



Carriers may never move into coastal hexes



Speed

A Task Force speed is equal to the slowest speed among its ships



Crippled

The ship can only move one hex every 6 TURNS (towed)



Very Slow

May move only 1 hex every 3 TURNS

It moves only in the 06:40 to 07:40 TURN, in the 10:40 to 11:40 TURN, etc...



Slow

May move only 2 hexes over 3 TURNS

It cannot move in the 06:40 to 07:40 TURN, in the 10:40 to 11:40 TURN, etc...



Normal

May move one hex every TURN



Fast

May move up to 4 hexes over 3 TURNS

It moves 2 hexes in the 06:40 to 07:40 TURN, in the 10:40 to 11:40 TURN, etc...



Very Fast

May move up to 5 hexes over 3 TURNS

It moves 2 hexes except in the 06:40 to 07:40 TURN, in the 10:40 to 11:40 TURN, etc...

TF movement and status



Ready

The Task Force has not yet moved this TURN



Moved

The TF has already moved this TURN and cannot move again until next TURN



Retiring

The TF retires after complete unload or after heavy damage
It will automatically move at the beginning of the TURN



Autopilot
is ON

A TF with autopilot will automatically move toward its programmed destination at the end of the TURN



Engagement

When moving into an enemy-occupied hex, your Task Forces WILL attempt to engage the opponent

Enemy reaction may vary:



Fight



Evade combat after a fight at longer range which means less damage



Avoid combat and retreat

If there are other enemy TF in the hex, another attempt is made against one of them



Vanish from the map because its last known location was wrong

Undo naval move

You may take back the naval move of any owned Task Force, except:



If the TF has just entered an enemy-occupied hex



If the TF has just launched an airstrike after moving



If the TF has merged after moving



If the current player action PHASE is over



Autopilot

You may activate autopilot for any of your Task Forces:



Hex
08:20
Autopilot



You may still move it normally



If it has not moved at the end of the TURN, it moves automatically towards its destination hex (emphasized in yellow)



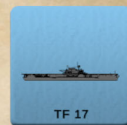
Autopilot is deactivated when the TF reaches its destination



At any time, you may switch the autopilot off

Engagement Ratio

In case of enemy naval attack on this Task Force or when this TF uses autopilot to move in an enemy-occupied hex



1:1



Select a ratio



If the ratio between the surface factors of your TF and the surface factors of the opposing TF is equal to or greater than the chosen ratio, then your TF will accept the combat



Otherwise, it will attempt to escape



This does not apply to the attacks resulting from your regular naval moves

Escape attempt

In order to check that a Task Force succeeds in escaping, a die-roll is made



+3 if the TF sails faster than its opponent



-3 if the TF sails slower than its opponent



-5 if the TF is crippled



+1 if the opposing TF has been detected

Results based on modified die-roll:

5+



Successful escape. The TF retreats to an adjacent hex

1-4



The TF is compelled to fight but at long range

< 1



The TF must fight

Fuel & Ports

In a few scenarios, TF may use full speed and get a limited fuel supply



Each time they move by 2 hexes, they expend 4 fuel points



Each time they move by 1 hex, they expend 1 fuel point



If they run out of fuel points, they must move slowly



The TF may only merge in a friendly port

Each turn spent in a friendly port



Kahili



The TF is supplied with 20 fuel points with a maximum of 60



Torpedoes are fully reloaded



Ships may again perform naval bombardment



#8 - SURFACE BATTLES

Surprise

Before the battle starts, each side rolls a die
Apply the following modifiers

- +2 for the Japanese
(tactics and long-range torpedoes)
- +1 for the Japanese at night
- +1 for the US in 1943
- +1 with surface radar
- +1 if the enemy Task Force was detected prior to the battle

If a side has at least 4 more points (2 only at night) than its opponent, it achieves surprise

Torpedoes

The side with the surprise has the following benefits

- each of its ships equipped with torpedoes launches 1 torpedo salvo
2 salvos may be fired at night with at least 4 surprise points
- each fired salvo expands 1 torpedo ammunition
- damage is assigned to the enemy ships before the gunfire step
- these torpedo-firing ships will still use their regular guns to fire at the enemy ships

Each salvo has a 25% chance to inflict one point of damage to a random target ship

- + 10 against slow ship
- + 20 against a crippled ship
- -5 against a very fast ship
- -5 against a DD
- + 10 at night
- - 10 if either side is evading
- - 20 for US torpedoes (often dud)
- - 5 with at least 1 disorder point



Gunfire

Each surface ship fires with a strength equal to its surface combat factor

Each point of strength has a 25% chance to hit the target

- + 10 with fire control
- + 10 against a crippled ship
- + 10 against a burning ship at night
- - 5 for a DD against a CL, CL vs CA or CA vs BB
- - 10 for a DD against a CA or CL vs BB
- - 15 for a DD against a BB
- - 10 if either side evades
- ☁ - 5 rain
- ⚡ - 10 light storm
- - 5 with at least 1 disorder point

Targeting

When using gunfire, each point of surface factors is assigned to a random target

However, the class of firing and target ships has an influence on the distribution as shown by the below table

		Target class			
		BB	CA	CL/DD	TRS/CV
Firing class	BB	7	7	1	3
	CA	3	3	3	1
	CL/DD	3	3	7	1
		Chance to fire upon			

Example: a BB is seven times as likely to fire at another BB as at a DD



Disorder

Each Task Force can get up to 8 points of disorder



- +1 for fighting at less than 2:1 in number of ships
- +1 per surface battle
- +2 for being surprised by the other side
- +2 for losing the battle without evading
- +1 if the roll of 1d100 is below the % of its ships which have been hit at least once during this battle (2 rolls)
- +1 if the roll of 1d100 is below the % of its ships which are sunk, burning or crippled (2 rolls)
- -1 the whole enemy TF has been sunk
- +4 when performing shore bombardment

A TF with at least 1 point of disorder has the following effects on the TF for a surface battle:

- -1 to the surprise die-roll
- -5 to the torpedo/gunfire of each of its ships

Outcome

The defending Task Force is beaten and must leave the hex if:

- it has opted to evade the battle OR
- it has more sunk, burning, or crippled ships than the attacking TF



Fletcher



Denver



Chicago

Otherwise, the attacking TF must retreat

Note: When a defender opts to evade battle. It is attempting to flee the hex before combat occurs. If successful, defender leaves and avoids combat. However, sometime this attempt is unsuccessful, and the defender is forced into battle. Regardless of outcome the defender must still leave the hex



Disorder

Each Task Force can get up to 8 points of disorder

A TF with at least 1 point of disorder:

- may not voluntarily move into a hex containing enemy TF
- may not merge with another TF
- will fight a surface battle less efficiently
- may not bombard



The disorder is reduced by 1 point at the end of each TURN

#9 - UNLOADING AND BOMBARDMENT

Unloading Transports

A transport Task Force loads/unloads its cargo at end of TURN:



If it has spent the full TURN in its objective hex



With a maximum of 2 cargo points per ship



With a maximum of 6 points per enemy-controlled objective (invasion) and 12 points per friendly-controlled objective (reinforcements)
Halved in a storm hex



Some airfields have a limited fuel supply
Each unloaded cargo point supplies the airbase with 3 fuel points



The US and especially the Japanese also use DD to transport troops
(The famous Tokyo Express)

After complete unloading, a Japanese TF retires to Rabaul or to the north map edge. US transports retire to the south, escorted by at least half an equivalent number of DD (or CL/CA/BB if not enough)

Naval Bombardment

Each BB bombards with a strength equal to 100% of its surface combat factor, CA 80%, CL 60%, and DD 40%



Each point of strength has a 25% chance to hit
-5 rain
-10 light storm
+5 for every 8 grounded air units



Each 2 hits (1 for a BB) inflict one point of damage to an enemy airfield and disable one coastal gun if any



Each hit aborts, damages or destroys one random grounded air unit



Against a beachhead, each hit reduces the number of unloaded cargos by 1 point



Naval Bombardment

A surface Task Force may bombard:



an enemy airfield hex



an enemy beachhead hex
(an objective being invaded by the opposite side during this scenario)

A surface TF will bombard at end of TURN:



If it has spent the full TURN in the target hex



If target hex is clear of any enemy naval TF



Each ship may only bombard once a SCENARIO

Coastal defense

At the end of each TURN, the coastal defense fires on each TF in its hex. Its surface fire like a DD



Hit TF can be forced to withdraw from hex if:



It contains neither BB or CA



The result of 1D10 is lower than twice the number of hits inflicted on the TF



Hence, it is important to reduce the defense by air or sea before invading

#10 - AIR ATTACKS

Anti-Aircraft Fire

Heavy AA fires further and shoots down enemy aircraft BEFORE they release their bombs or torpedoes

➤ Its value is printed on the counter of the airfields

➤ For a US TF, it is equal to the sum of the best 4 heavy AA of the ships and cannot exceed 100. A Japanese TF only sums up its 2 best ships. Double the number of firing ships against an airstrike detected before the battle. When a TF and a friendly base share the same hex, sum their heavy AA

Light AA destroys enemy planes only AFTER they release their bombs or torpedoes

➤ Its value is printed on the attacked airfield or individual ship

➤ Strategic Bombers are not sensitive to light AA because they are flying too high

➤ Doubled against aircraft carrying torpedoes

➤ Halved if both torpedo- and dive-bombers are attacking

➤ The light AA of each US carrier is increased by the light AA of the best operative escort ship (share best escorts between several carriers)

Each AA point has a 4% chance to hit an enemy bomber or fighter-bomber



3% only with rain



2% only with light storm

Air-to-Sea Attack Tables

Planes attack if they have survived the CAP and Heavy AA fire

Sum up the air-to-sea factors of the surviving bombers attacking each ship

Each factor has a 25% chance to hit target ship with a bomb or a torpedo

➤ +5 if defending fleet has no CAP

➤ +5 if the attack is coordinated
(if both Dive and Torpedo bombers are attacking the ship)

➤ +5 against a slow ship

➤ +10 against a crippled ship

➤ -5 against a very fast ship

➤ -5 against a DD

➤ -1 for each 5 pts of AA

➤ Add the fleet Heavy AA to the ship Light AA

➤ -5 strategic bombers by overcast weather



-5 rain



-15 light storm

➤ -5 if the bomber is confused

➤ Halved after all modifiers for strategic bombers

➤ There is always a minimum 5%-chance to hit

See Damage & Repair section for the effects



Air-to-Ground Attack

Each air-to-ground factor of surviving air units has a 20% chance to hit grounded aircraft

- +5 if the airfield has no CAP
- +1 for each grounded unit being prepared for a mission or which has just landed outside
- -1 for each 5 pts of AA
- There is always a minimum 5%-chance to hit
- ☁ -5 strategic bombers by overcast weather
- ☔ -5 rain
- ⛈ -15 light storm
- Each hit destroys 1 grounded air unit
- -5 if the bomber is confused

Each air-to-ground factor of surviving air units has the same chance to hit the runways

- Fighters without bombs (strafing) cannot hit runways

#11 - AIR COMBAT

Air Combat Procedure

The planes are split into stacks

- Attacking bombers and fighter-bombers are placed each in one stack
- Then defending fighters are evenly and randomly placed in these stacks
- Then escorting attacking fighters are aligned evenly and randomly against the defending fighters

A single round of air combat is fought within each stack

Examples

2xB25, 1xA20, 1xP47 as fighter-bomber and escorted by 2xP38 vs. 1xA6M on CAP



2xB25, 1xA20, 1xP47 as fighter-bomber and escorted by 2xP38 vs. 2xA6M, 1xKi43, 1xKi61 on CAP



Air to Air Table

Both sides roll simultaneously using the column determined below:

- Best air-to-air value of its fighters +1 for each extra friendly fighter (or +2 without enemy fighter)
- Or air-to-air value of the unescorted bomber
- Then subtract the air value of the other side using the same rules
- ☁ -1 rain
- ☁ -2 light storm

Example: The Japanese (air value of 3) fire at -2 while the US (air value of 5) fire at +2



<-3	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	7+
5%	5%	10%	15%	20%	20%	20%	20%	20%	20%	20%	25%
5%	10%	10%	10%	20%	20%	25%	25%	25%	30%	35%	40%
						5%	10%	15%	20%	25%	25%
5%	10%	15%	20%	20%	25%	20%	20%	20%	15%	10%	5%
85%	75%	65%	55%	45%	35%	30%	25%	20%	15%	10%	5%

- 1 enemy air unit is hit, if possible, a bomber or fighter-bomber
If rolled by a bomber without escort, then the result is treated as no effect instead
- 1 enemy air unit is hit, if possible, a fighter
- 2 enemy air units are hit
- Enemy bomber gets confused: it attacks a random ship, and with a penalty
- No effect



CAP - Ammunition

A CAP unit has a 50% chance to be ammunition-depleted after combat
This fluctuates with the ratio CAP units against attacking air units



25% for a US unit with a ratio > 2:1

75% for a US unit with a ratio < 1:2



25% for a Japanese unit with a ratio > 3:1

75% for a Japanese unit with a ratio < 1:1

Japanese fighters embed less ammo than their Allied counterparts

Improvised CAP

Bombers SBD and D4Y may be allocated to CAP missions, although they are less efficient than pure fighters

When firing at opposing air units, its air-to-air factor is reduced by 2
This is emphasized by the parenthesis around the air-to-air rating



Ex: the SBD fires on the 0 column and the G4M fires back on the -2 column

When defending with a friendly fighter, they provided a +1 only against an unescorted bomber



#12 - DAMAGE AND REPAIR

Air Unit Damage

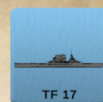
When an air unit is hit, it may be destroyed, damaged or aborted depending on its ruggedness

	Fragile		Standard		Rugged
	20 %		30 %		40 %
	30 %		35 %		40 %
	50 %		35 %		20 %

- A damaged or aborted air unit has to immediately abort its mission and jettison its payload
- A damaged unit in a hangar has a 6% chance each phase to be repaired (3% if Japanese)
- A damaged unit may not be allocated any mission until repaired
- An aborted unit must just spend an extra PHASE in the hangar in order to be operative again

See ships damage

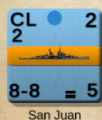
See the damage report for the ships of the Task Force



Major fire



The flight deck is not usable



Crippled



Sunk when all life points have been lost



Heavy Damage

A surface ship is heavily damaged when:



she has lost half of her life points



OR she has lost her propulsion



OR she has lost half of her main turrets



OR she is facing a major fire

Such a ship must retire with a small escort to Rabaul or the north map edge (Japanese) or to the south (US)



A carrier TF left without escort will be forced to withdraw

Getting damaged



By a torpedo

Loss of 1 life point

On a failed Damage Control Test (DCT) (1D10 > damage control), the carrier lists

On a failed DCT, the propulsion gets damaged

1 potential critical hit



By a bomb

Up to 30% of AA guns destroyed

75% chance to damage the flight deck, 10% to destroy a Japanese flight deck, 1% if US

1 potential critical hit



By a shell

Up to 30% of AA guns destroyed

1 potential critical hit



Extra effects on carriers

A hit destroys 2 air units

BUT if 2 armed units (in the middle of their preparation for their mission) are hit, then more planes are

destroyed,

a major fire breaks out and there is 1 potential critical hit for each 2 bombers destroyed this way



Airfields

Each hit on an airfield reduces its life points by 1

For each 5 life points lost, one runway is made inoperative

Life points may go below zero



Damage to propulsion:

Each time the propulsion gets hit, compare the cumulative number of hits to the ship's current life points

If greater, then the propulsion is destroyed

If tied, then a failed DCT cripples the ship



Critical hits



For each potential critical hit, if the result of a die-roll is greater than the damage control value of the ship, then the ship receives one critical hit from the list below
Carriers attacked by a detected airstrike have +1 to their damage control value

Damaged flight deck

There are holes in the flight deck preventing any landing and launch

Destroyed flight deck

The flight deck has been wrecked. No aircraft can land on or take off from the carrier for the rest of the game

Major fire

If not under control at the end of turn, then the fire will cause more critical damage. No air or repair operations allowed on a burning ship except firefighting

Minor fire

Extinguished automatically during next phase. 2 minor fires in the same phase trigger a major fire

Scuttled due to uncontrolled fires

The crew had to abandon the ship and to scuttle it in order to prevent its capture

Damaged propulsion

The ship will move slower

Propulsion destroyed

The ship is dead in the water for the remainder of the game and cannot land or launch air units

1 elevator destroyed

Air operations are now slower

Reduced damage control capability

The ship damage control value is halved, hampering damage prevention and repair operations

1 main turret destroyed

The surface battle value of the ship is reduced

Disabled torpedo launchers

The ship will not launch any torpedo in a surface combat

Ammunition explosion

Loss of 1 life point and a major fire breaks out. Carrier airplanes may not be equipped with a full load of bombs anymore

Avgas explosion

Loss of 1 life point and a major fire breaks out

Torpedoes explosion

Loss of 1 life point and a major fire breaks out. The ship may not use her torpedoes anymore for surface battles or on her planes

Oil leak

Enemy scout planes have more chance to find this TF

Structural damage

The ship loses 1 life point

List due to flooding

No air operations allowed on a carrier which lists

Flooding not controlled

No measures could stop the water to enter the ship en masse which then sank inexorably

Air radar destroyed

It cannot detect incoming enemy air strikes anymore. Enemy airstrike detection should rely on other ships of the Task Force

Fire control destroyed

The radar-assisted gunfire system is down. The ship loses its bonus in surface battle

Surface radar destroyed

No effect if the TF contains other ships equipped with surface radar. Otherwise, this will increase the chance to be surprised by the enemy

Seaplanes capability lost

The search capability of the task force decreases

Service capacity on the deck destroyed

Arming and fueling CAP units can not be done on the deck anymore but may be still performed in the hangar, which means using elevators and thus losing time

1 pt of cargo destroyed

1 pt of cargo has been lost

Reduce unloading capacity

This ship may only unload 1 pt of cargo a TURN



Repair



Saratoga

Damaged flight deck

One repair attempt at the end of each PHASE. Repaired if a die roll is less than or equal to the ship damage control value



San Juan

Damaged propulsion

One repair attempt at the end of each TURN

Under control if a die roll is less than or equal to the ship damage control value



Princeton

List due to flooding

One repair attempt at the end of each TURN

Under control if a die roll is less than or equal to the ship damage control value



San Diego

Major fire

One repair attempt at the end of each TURN. Under control if 2 die rolls are each less than or equal to the ship damage control value. If one fails, the ship gets 1 potential critical hit. If both fail, the ship is abandoned by its crew and scuttled



Midway

Airfields

One repair attempt at the end of each PHASE. Heal 1 life point if a die roll is less than or equal to the airfield damage control value (2)



#13 - WEATHER

Weather

The weather comes an as an option in each scenario



Overcast



Rain



Light Storm

Clouds are moving 1 hexes every 2 TURNS
75% in the wind direction shown on the cloud
25% at random

The wind is changing direction every 12 HOURS

When clouds stack with each other, rain and storm appear
Clouds leaving the map are randomly replaced

Detection

Chance of detection of Task Forces or approaching airstrikes are reduced when covered by weather. Radar is not affected by weather



- 50 %



- 65 %



- 80 %



Air Attacks

They are impacted by the weather in their hex



Strategic bombers suffer a -5 modifier to hit naval or ground targets
(Cumulative with other modifiers, see Air Attacks section)



Heavy AA hit chance is reduced to 3% per point
Bombers (except torpedo-bombers at sea) suffer a -5 modifier to hit naval or ground targets
Air units fire one column to the left on the Air Combat Table



Heavy AA hit chance is reduced to 2%, Light AA hit chance is reduced to 3%
Bombers suffer a -15 modifier to hit naval or ground targets
Air units fire two columns to the left on the Air Combat Table

Ships

Ships are impacted by the weather in their hex



No effect



Ships suffer a -5 modifier for gunfire and naval bombardment
(cumulative with other modifiers)



Ships suffer a -10 modifier for gunfire and naval bombardment
The unloading capacity is halved
Speed is reduced by one level (ex: slow -> very slow)



Air Units

Airborne air units are impacted by the weather in their hex



No effect



Landing on carriers is slightly slower
Radio -10



Airstrikes attempt to avoid storm hexes
If they enter a storm, they cannot move a second hex this impulse
At the beginning of each PHASE, each airborne unit loses 1 point of endurance
Radio -20
Launch and landing on carriers are slightly slower



#14 - PLAY BY EMAIL

Get Started



Populate your email address in the settings



Agree with your opponent about the scenario, side and options to play



Create a new game, activate the 2-player mode and create/pick an opponent



Start the game with the side you want to play

Sequence

Each PHASE, the Japanese player makes its moves and then hands over to his US opponent



When it is to you opponent to play, send him/her the saved game by email (the PBEM folder path is displayed in the settings)

When you receive a saved game, copy it to the PBEM folder and it will appear in the list of multi-players games

If one player opts to skip one or more hours, then other player will play several PHASES in a row



If both players do so, this is good way to go faster into action
See the Sequence of Play section of the help



#17 - SEAPLANES - DLC

Manageable Seaplanes

By default, seaplanes are managed by the program. You can't see and interact with them

Getting the seaplanes extra feature will open more options:



See all owned seaplane bases on map



Assign search, CAP and transfer missions to your seaplane air units



Establish temporary seaplane bases with seaplane tenders



When playing against AI, or against a player who purchased this feature too:



You are also allowed to observe and attack enemy seaplane bases by air and by sea

SeaPlane Base

Maintenance Capacity (MC)



AA value (Heavy - Light)



May operate any kind of seaplanes

Coastal defense

The MC limits the number of seaplanes which could be operated per PHASE



It increases by 1 for each friendly seaplane tender present in the hex



It may be reduced by ground strike or shore bombardment, although it cannot go below zero



20% chance to repair by 1 point at end of each PHASE



SeaPlane Air Units

In White,
Large Seaplane



May operate only on shore seaplane bases

In Orange,
Small Seaplane



May operate on shore seaplane bases, and onboard ships with ORANGE hangar capacity



Atago

Select ship to enter Air Op

Temporary Seaplane Base



You may establish a temporary seaplane base with a TF if all below conditions are met:



the TF has spent the full last TURN in a seaplane spot hex, orange & White (Also a coastal hex)



The hex is free of enemy TF or base



The TF contains at least one operative seaplane tender. Its carrierd air units are immediately moved to the base's hangar



The new base has zero maintenance capacity, and relies solely on tenders

It remains concealed to the enemy until the tender TF gets detected



#16 - WARNING

Please Read Before Using This Game Or Allowing Your Children To Use It.

Some people are susceptible to epileptic seizures or loss of consciousness when exposed to certain flashing lights or light patterns in everyday life.

Such people may have a seizure while watching television images or playing certain video games. This may happen even if the person has no medical history of epilepsy or has never had any epileptic seizures.

If you or anyone in your family has ever had symptoms related to epilepsy (seizures or loss of consciousness) when exposed to flashing lights, consult your doctor prior to playing. We advise that parents should monitor the use of video games by their children. If you or your child experience any of the following symptoms: dizziness, blurred vision, eye or muscle twitches, loss of consciousness, disorientation, any involuntary movement or convulsion, while playing a video game, IMMEDIATELY discontinue use and consult your doctor.

- Do not stand too close to the screen. Sit a good distance away from the screen, as far away as the length of the cable allows.
- Preferably play the game on a small screen.
- Avoid playing if you are tired or have not had much sleep.
- Make sure that the room in which you are playing is well lit.
- Rest for at least 10 to 15 minutes per hour while playing a video game.

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#18 - SUPPORT

All questions related to technical issues with the game CARRIER BATTLES 4 GUADALCANAL can be sent by email to the support of SAS AVALON DIGITAL at the following email address:

support@avalon-digital.com

