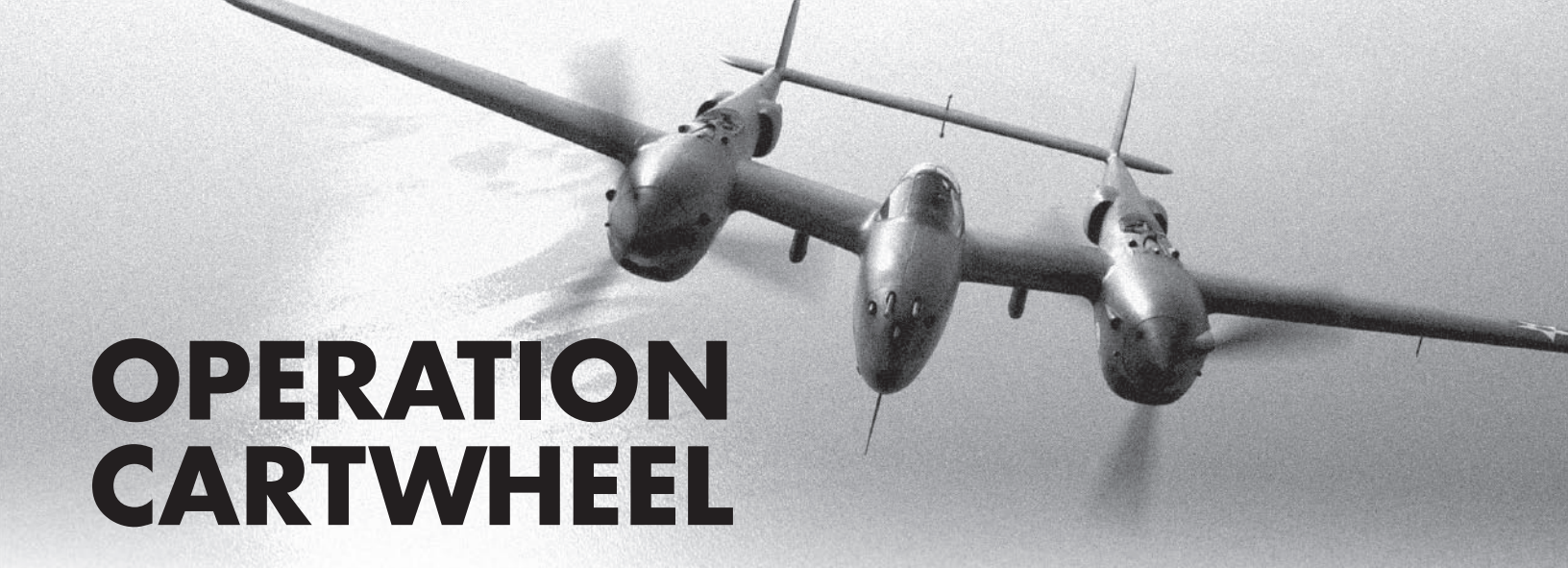

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READ THIS FIRST

We've organized the overall structure of the rules of this LPS simulation game to follow this game's sequence of play in introducing concepts. The rules themselves are written in a format known as the Case System. This approach divides the rules into Modules (each of which deals with a major important aspect of play). Modules are numbered sequentially as well as possessing a title. Each Module is divided into Sections (that deal with a major sub-topic inside the Module) which are also numbered sequentially. Modules and Sections are introduced by some text that briefly describes the subject covered by that particular Module or Section. Finally, the majority of each Section consists of Cases. These are the specific, detailed rules that govern play. Each Case is also numbered sequentially. The numbering follows a logical progression based upon the number of the Module of which the Cases are a part. A Case with the number 7.51, for example, is the first Case of the fifth Section of the seventh Module of the rules. Each Module can have as many as ninety-nine Sections and each Section can have as many as ninety-nine Cases. The numbering system is designed as an organizational aid. Use it to determine where a Case is located in the rules.

3.1.4

The example above is the number of the fourth Case of the first Section of the third Module of the rules.

Learning to Play the Game

Begin by familiarizing yourself with all of the components listed for this game. Then skim through the charts and rules, reading all the titles of the Modules and Sections. Set up a game scenario or portion of a scenario (after reading the applicable Module) and play a trial game against yourself. During this trial game, try referring to the rules only when you have a question and remember the numbering system we employ makes it easy to look up rules when you do. While a trial game may take you an hour or two, it is the quickest and most pleasant way to learn (short of having an experienced friend teach you). We also don't recommend attempting to learn the rules word-for-word. Memorizing all the details is an effort that few can do. We've written these rules to be as comprehensive as possible – but they are not designed to be memorized. Taking in the rules in this way (as you play along) is the best approach to mastering this game. We're always open to suggestions on how to improve the comprehension of our rules. Write to us (see addresses below) if you have an idea on how we can communicate better with you.

1.0 INTRODUCTION

When they said Wewak is a rough place, they were not kidding a bit… I saw Joe Casale go down. He started his bomb run right in front of me and they received a direct hit. He went down in flames.

Captain Dusty Swan, 321st Bomber Group, August 16, 1943

Wewak was heavily bombed. Our fighters were too late.

Sergeant Major Motohisa, 68th Sentai, August 16, 1943

Operation Cartwheel is a wargame simulation of the campaign fought for control of New Guinea in 1943. The Japanese attack the previous year was turned back in the Battle of Coral Sea, and over land in bloody fighting along the Kokoda Trail, Buna and Sanananda. Shocked at the butcher's bill run-up in these battles, General MacArthur initiated a series of offensives, dubbed Operation Cartwheel, that would combine Allied air, naval and ground forces in a daring series of "leapfrogs" to bypass and isolate the Japanese defenses. Crucial to the offensive was neutralizing and countering the Japanese defensive positions at Rabaul.

To succeed the Allied player must plan and execute his offensives, oftentimes with scattered forces at the end of a lengthy and at times problematic logistics chain, to rapidly seize and then hold positions that will result in the capture of New Guinea. The Japanese player must counter the Allied attacks while looking for opportunities for striking telling blows that will punish the Allied risk-taking.

Game Scale Each hex on the map is approximately 100 miles (160 km) across. An aerial unit is comprised of approximately 12 aircraft. A naval unit represents 1-8 ships of the main ship type with its escorts. A game turn spans about two weeks of time.

2.0 GAME COMPONENTS

Your copy of *Operation Cartwheel* should contain the following components:

One 22" x 32" map

284 die-cut counters

Two airbase display charts

This rules booklet

Four page pullout Player's Aid Charts

Not supplied with this game but needed for play is a ten-sided die. If any of these parts are missing or damaged, write to:

Against the Odds Magazine
PO Box 165
Southeastern, PA 19399-0165 USA
Attn: *Operation Cartwheel*

Or e-mail us at: admin@atomagazine.com

We hope you enjoy this game. Should you have any difficulty interpreting the rules, please write to us at the above postal address, or send an e-mail to: gamesupport@atomagazine.com, phrasing your questions so that a simple sentence, word, or number can answer them. If you send a letter by mail, you must enclose a stamped, self-addressed envelope to receive a reply. We recommend e-mail as the best way to resolve a query. Although we welcome comments and suggestions about the game's interpretation of events, we cannot promise to respond to questions on theory or design intent. Additionally, check out the *Against the Odds* and *Operation Cartwheel* discussion folders at www.consimworld.com.

2.1 The Game Map

The game is played on a stylized map divided into hexagons (hexes). The Operational map portrays the area of New Guinea and the Bismarck and Solomon Islands over which a large hexagonal grid has been superimposed. The hexes facilitate positioning and movement of the playing pieces. Each hex contains a terrain type that is referenced on the Terrain Key. A hex is also individually designated with a four-digit number, which is used in set-up. Fractional hexes without numbers are unplayable and may not be entered.

The game map also includes a "Tactical Battle Board" (TBB), used for resolving the aerial combats in the game. This part of the map includes an Air Battle Round Track, as well as spaces for recording the air units' altitude, status (Normal or Disrupted) and whether an ace is flying a particular fighter.

2.1.1 Map Features Various types of terrain and certain features are denoted on the Operational map, and are defined with their effects explained on the Terrain Effects Chart. Some of these terrain types are Mountains, Jungle and Sea.

Note *The volcano graphic in the hex with Rabaul indicates the presence of its active volcano. The volcano's possible eruption weighed heavily on the defenders. It is there for reference with a possible Random Event but otherwise has no other effect on play of the game.*

2.1.2 Map Charts and Tables Also printed on the map board is a Turn Record Track to assist in recording the game turn, the Terrain Key, each player's Victory Points Track and the Random Events Table.

2.2 The Playing Pieces

The cardboard playing pieces (or counters) in the game should be carefully separated before trying to play. The pieces are of different types depending on the information that appears on each. In general the pieces represent one of four types of counters: air units, ground combat units, naval units and informational markers. Combat units represent the actual historical units that fought, or could have fought, in this operation. The front side of each combat unit shows the combat unit at Full strength, while the back of the counter (usually) represents the same combat unit in its "Reduced" state. If there is no reverse side, the unit cannot be reduced; instead, it is eliminated. Each face of a combat unit presents information that determines its capabilities in the game.

2.2.1 Nationality Unit counters, referred to as units in the rules, are printed with various background color patterns for national identification:

Allies

USAAF, US Army and naval transports: light sand with yellow side or bottom bar.

US TF-36: light sand with orange side or bottom bar.

Marines: light sand with light blue side or bottom bar.

Austrailian forces: light sand with light brown side or bottom bar.

Japanese

Japanese Army and 6th Hikoshidan: white with light sand side or bottom bar.

Japanese Naval: white with pink side or bottom bar.

11th Hikoshidan: white with light blue side bar.

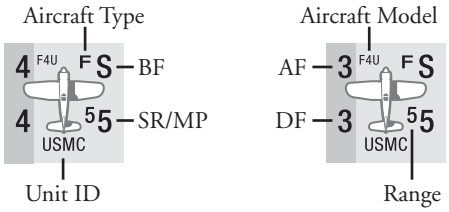
Designer's Note *The counter mix for* Operation Cartwheel *does not include every type or number of aircraft deployed in the area. Both sides had other tasks and operations that had to be carried out and are not the focus of the game. For example, the Allied bombing campaign against Japanese positions in western New Guinea, as well as ASW efforts by both sides, are not detailed here. Additionally, a fourth to a third of both sides' aircraft would be down at any one time for maintenance and repair. The game does not task players with keeping track of such mundane matters, and the counter mix reflects these design decisions.*

2.2.2 Aerial Unit Type Symbol There are several different types of air combat units with a top-down aircraft symbol on them.

Note *Allied C-47 Air units do not have a reduced strength side. These units are eliminated if reduced. These units do not have a BF but rather a "C" indicating these units can carry one 1 Parachute unit (Allied player only).*

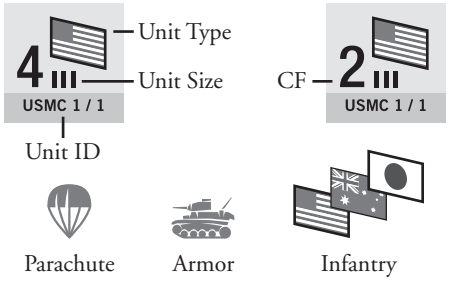
SAMPLE AIR UNIT

Front — *Full Strength* | Back — *Reduced Strength*



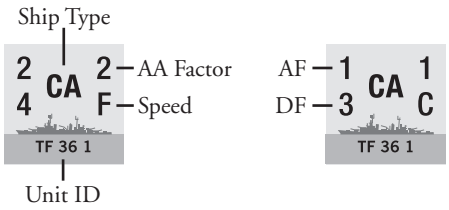
SAMPLE GROUND UNIT

Front — *Full Strength* | Back — *Reduced Strength*



SAMPLE NAVAL UNIT

Front — *Full Strength* | Back — *Reduced Strength*



MARKERS

Aerial Unit-Recon The two Japanese and two Allied (one through random event only) aerial reconnaissance units each have an aircraft icon, but the only number appearing in the counter is their range. These types are the Japanese Ki-46 (code name "Dinah") and Allied P-38 Lightning or "Magic" PBY (which represents the Allied code-breaking successes).

AF The Attack Factor value in the upper-left corner of the counter represents a unit's capability of damaging an enemy aerial unit by firing at it during aerial combat (Section 9.7). Red text color indicates this is for defensive use only.

DF The Defense Factor value in the lower-left corner of the counter represents a unit's capability of defending against hostile fire.

BF The Bombing Factor value in the upper-right corner of the counter represents a unit's capability of inflicting damage against targets on the ground or sea (Section 9.10). Some bombers have designations indicating the unit can engage in Torpedo (T), Skip (S), Dive (D), or Precision (P) bombing attacks.

Range This value in the middle lower-right side of the counter represents the range limit to a unit's movement on the Operational map (Section 9.2).

Note *a value of "U" means the unit can reach any hex on the map.*

SR/MP The Speed Rating/Movement Points value in the lower right corner of the counter represents the speed and acceleration of an aircraft. This is also an air unit's Movement Point (MP) allowance when moving on the TBB. The printed MP value for Bomber units is used when they are loaded with bombs. Their MP value is increased by one when they have dropped their bombs (for whatever reason).

Strafing A fighter unit with an "S" instead of a "BF" may make low-level strafing attacks against ground targets. This is a subset of bombing combat.

Aircraft Type This information is useful when cross-referencing the aircraft behavior on the Aerial Combat Movement Table. The types of aircraft portrayed in the game are as follows:

F Fighter

B Regular Bomber

FB Fighter Bomber

D Dive Bomber

P Precision Bomber

S Skip Bomber

T Torpedo Bomber

C Cargo Transport

R Reconnaissance

Notes *All D, P, S and T units can perform regular bombing attacks, instead of their individual specialized bomb attack. The RAAF Beaufighter FB air unit is the only type that can perform as either an F or B type air unit. When performing as a B type it can only conduct regular bombing attacks and may not maneuver as a fighter if optional rule 9.7.10a is in play.*

2.2.3 Ground Combat Unit Type Symbol There are four types of ground combat units: Infantry, Marine, Parachute, and Armored. Except for armor, all are considered Infantry. The Unit Type Symbol (nationality flag for infantry, parachute for the 503rd Parachute Regiment and tank for 97th Armored Battalion) is printed in the center of the counter and identifies both the kind of unit the piece represents and its principal role as follows:

CF The Combat Factor of a ground combat unit serves as both its attack and defense factor. It determines its ability to inflict damage on an enemy ground unit, as well as its resilience in enduring attacks from other ground combat units and aerial bombing. Red text color indicates that the unit can only defend (Garrisons).

Ground Unit Size In this game the unit size is decorative, especially since a single formation may have several counters. The sizes are Regiment (III), Brigade (X), and Division (XX).

2.2.4 Naval Units These represent squadrons of ships and are of three types: Surface Warship (BB, CA, CLT), Carrier (CV, CVL), and Transport (T). The Japanese player does have one Submarine unit (SS) that is made available via Random Event.

Cargo Capacity The number of supply and/or combat steps the naval unit can transport.

Ground and Naval Unit Abbreviations

ANF Allied Naval Force

BB Battleship Task Force

CA Armored Cruiser Task Force

CL Light Cruiser Transport Task Force

CV Aircraft Carrier Task Force

CVL Light Aircraft Carrier Task Force

IJN Imperial Japanese Navy

LST Landing Ship Transport Task Force

RAAF Royal Australian Air Force

RCT Regimental Combat Team

SNLF Special Naval Landing Force

T Transport Task Force ***Note*** *Japanese Maru units (T4) represent large ships. Daihatsu units (T2) are powered barges, built by Daihatsu for amphibious operations.*

USAAF United States Army Air Force

USMC United States Marine Corp

USN United States Navy

2.3 Markers

Markers are counters used to record various game functions, such as who is an ace, who is disrupted, or the current turn. Markers generally contain only a symbol or notation for their use.

2.4 The Die

The game uses a ten-sided die to resolve combat and other factors for which performance will vary. A 0 is a "ten", not a "zero", unless otherwise noted. Throughout these rules, the abbreviations DR and DRM are used to stand for Die Roll and Die Roll Modifier, the latter being a plus or minus number used to modify the DR result.

2.5 Game Charts and Tables

Various charts and tables simplify and illustrate the game and furnish results for certain game actions. These include the Turn Record Track and Terrain Key (on the map) and the Combat Results Tables, along with other charts and tables printed on the Player's Aid Charts (PAC) pull-out.

3.0 IMPORTANT CONCEPTS

Before getting on with the main body of the rules, there are several important concepts with which players should familiarize themselves. These are presented here.

Aerial Unit A counter with an aircraft symbol on it is an Aerial Unit. Excluding the C-47 transports and both player's aerial reconnaissance units, all other aerial units are aerial combat units; they have factors that allow then to perform bombing, strafing and aerial combat. Aerial combat units are subdivided into fighters (F) and bombers (B, D, P, S, T). Bombers are also classed as single engine (D3A Val, D4Y Judy, B5N Kate, TBF Avenger, SBD Dauntless) or multi-engine (all other bombers).

Airbases Function as static combat units during air operations. Their anti-aircraft factors may attack enemy aerial units conducting attacks against them.

AMC Air Combat Movement Chart located on the PAC

Bombing An aerial combat unit may participate in one bombing mission per turn if it has a bombing or strafing ("S") factor of 1 or more (printed in the counter's upper right corner).

Control Control of a hex is determined by the last player to have a ground combat unit moving through via ground movement or occupying the hex. Control for VP conditions is by occupation only.

Ground Combat Units Although the air/naval campaign plays the decisive role in this game, the ground combat units that participated are also represented.

DR, DRM Die Roll, Die Roll Modifier

Hikoshidan Imperial Japanese air fleet

Missions Aerial and naval units are activated for missions against a targeted enemy unit or installation or for naval units to reposition themselves. Aerial units that are regrouping (Module 14.0) or perform a stage move (Section 9.3) cannot participate in an air attack mission.

Naval Unit A counter with a ship symbol on it is a naval unit. Excluding the transports (T), all other naval units are naval combat units; they have factors that allow then to perform gunnery fire (anti-ship and shore) and AA combat. Naval combat units repre-

sent the main class of ship (CV, CVL, BB, CA, and CLT) and their escorts. ***Note*** *The CLT is both a combat unit and can transport.*

PAC Player's Aid Charts. The 4 page pull-out section with the majority of the charts and tables for the game.

Regroup Aerial units attempting to recover from disruption or replace losses must be marked with a Regroup marker. Aerial units that regroup may not conduct air missions and have an adverse DRM if scrambling. Both players also receive victory points for replacement steps received by their opponent's regrouping aerial units. Ground, naval and airbases regroup (remove or attempt to remove disruption) during the Regroup Phase of the turn.

Scramble Fighter aerial units that are based at an airbase targeted for attack, or within range of a hex targeted by an enemy attack mission, may attempt to scramble (activate) for aerial combat (interception). Aerial units based at an airbase targeted for attack may attempt to scramble to avoid being caught as targets on the ground.

Victory Points (VPs) are awarded for various game events to determine the winner of the game. Victory Points are recorded on the Victory Points Track using the appropriate markers.

4.0 SEQUENCE OF PLAY

Operation Cartwheel is played in game turns. Each game turn uses the following sequence of play:

4.1 Random Event Phase

First, one player rolls the die and determines which Random Event occurs (Section 5.1). Next, the Japanese player has to decide if he will be committing the 11th Hikoshidan (Section 5.2). Then, the Allied player must declare if the USN units will be entering the board (Section 5.3 and Case 15.1.1).

4.2 Mobile Airbase Construction Phase

Both sides may begin construction of mobile air bases in friendly controlled non-mountain hexes during this phase (Section 6.5)

4.3 Initiative Phase

During the Initiative phase, first the Allied player decides if this is a Regroup Turn (Section 7.1). Next, both players will make decisions about regrouping of their individual aerial units (Section 7.2). Then both players will fly their reconnaissance flights (Section 7.3). After reconnaissance flights have been performed, one player rolls the die (which can be modified) to determine which player has initiative (Section 7.4). The player who gains the initiative is called the "Initiative player" for the current turn and will start first with a variable number of initiative missions. His opponent is referred to as the "Reaction player".

4.4 Air/Naval Operations Phase

The Air/Naval Operations Phase is played as a series of missions. The player executing a mission is known as the "Mission player", while his opponent is the "Interceptor player". Players alternate performing missions, with the Initiative player deciding first whether to perform an Air Mission (Section 9.1), Naval Mission (Section 10.1), or pass. Once both players have passed twice consecutively, this phase ends.

4.5 Ground Operations Phase

Players may move eligible ground combat units and attack enemy ground combat units during this phase (Module 11.0).

4.6 Operations Conclusion Phase

Aerial recon units return to base. Players return their naval units still at sea to ports if they choose (Module 12.0).

4.7 Supply Determination Phase

In order to remain fully functional, ground combat units, naval units, and airbases (not aerial combat units) on the map must trace an uninterrupted supply line of any length to a friendly supply source during this phase (Module 13.0).

4.8 Regroup Phase

Both sides may attempt to remove the disruption status of each airbase, aerial unit (which was marked earlier), ground combat unit and naval unit so afflicted. Hits on cities are also removed during this phase (Module 14.0).

4.9 Reinforcement Phase

Reinforcements are placed during this phase on their turn of arrival (Module 15.0).

4.10 Victory Points Phase

If the turn (Initiative) marker is not on the final turn of the scenario being played, move this marker one space along the Turn Track, carrying with it all markers or units currently still with it on the track. If it is the final turn of the scenario, stop play and determine the victor (Modules 16.0 and 17.0).

5.0 RANDOM EVENTS PHASE

5.1 Random Event Determination

One player rolls a die and consults the Random Events Chart on the map by referencing the DR result down the left column to see which random event occurs. Apply the stated text.

5.2 Commitment of the 11th Hikoshidan

All of the aerial units of the 11th Hikoshidan are available to the Japanese player from the start of the game. The decision whether or not to commit the 11th Hikoshidan has to be made at the beginning of each turn, before the Allied player decides on the TF-36 naval commitment. The Allied player is awarded one victory point each turn in which the Japanese player states his intent to commit the 11th Hikoshidan. Commitment does not entail any obligation to actually fly 11th Hikoshidan aerial units.

If the Japanese player decides to commit the 11th Hikoshidan, its units are immediately placed at either Rabaul (if it is not destroyed) up to its basing capacity, or off-board at Truk. The A6M Rufe fighter unit may be based at any undisrupted Japanese mobile airbase (up to its basing capacity) or port. Immediately award the Allied player one VP.

If the Japanese player does not commit the 11th Hikoshidan, all existing 11th Hikoshidan units are immediately placed in the Flown-Undisrupted quadrant of the Truk off-board airbase, regardless of their current location.

Note *In this case they may have been committed to another theatre of operations or are being held in reserve by the Imperial High Command to counter moves off-board by the US Navy. A practical advantage to this decision is the removal of any disruptions to 11th Hikoshidan units.*

However, during the Airbase Reorganization Phase (Section 14.2), a number of victory points will be awarded to the Allied player for the number of 11th Hikoshidan units that flew and were destroyed this turn.

Example *The Japanese player flies three 11th Hikoshidan units on a mission during turn 2. One unit is destroyed in aerial combat. So, during the 11th Hikoshidan commitment decision section of the Random events phase, the Allied player is awarded 1 VP for the commitment. Then during the Airbase Reorganization Phase, the Allied player will be awarded 1 VP for having two 11th Hikoshidan units in the Flown section(s) of his airbase display (½ point each) and 1 VP for the eliminated unit. The Allied Player will*

have received a total of 3 VPs this turn for the 11th's commitment and actions.
Hint *When committing 11th Hikoshidan units to a mission or an interception, keep those units hidden from the Allied player until the last moment, for he will surely concentrate on them as interception or mission targets.*

5.3 Commitment of USN Naval Forces

The Allied player will announce if the USN 36th Task Force will be committed this turn (see Case 15.1.1)

6.0 AIRBASES

All controlled and controllable airbases are printed on each side's Airbase Display Chart (ADC) and are the holding areas for each side's aerial units. Players will find it difficult to conduct effective aerial operations without them.

6.1 Limited Intelligence

Each player's ADC is kept hidden from his opponent throughout the game. Disclosure to an opponent happens only as a result of aerial reconnaissance (Section 7.3) or Magic Intelligence (Random Event).

6.2 Types of Airbases

There are four types of airbases:

Major on-map Airbases Port Moresby, Guadalcanal, Rabaul and Wewak.

Off-board Airbases Bases that are located in Australia (for use by any Allied non-USN aerial units only), South Pacific (for use by American aerial units only), and Truk (for use by the Japanese player only).

Minor on-map Airbases Located in a town on the Operational map and listed on the player's ADC.

Mobile Airbases (3 Allied and 2 Japanese maximum) These may be constructed in friendly controlled, supplied, non-mountain hexes during the Mobile Airbase Construction Phase of the game. The letter in the upper left identifies which airbase display chart to use.

6.3 Airbase Hosting Capacity

Most aerial units must be based or hosted at a friendly airbase.

6.3.1 Non-Mobile On-Map Airbases The hosting capacities of all of the airbases are shown on the player's ADC.

6.3.2 Mobile Airbases A mobile airbase can host:

Any 3 units as long as they are of the same type (i.e., all bombers or all fighters); or,

Any 2 units of any type (bombers and fighters),

6.3.3 Off-board Airbases These airbases can host any number and type of aerial units. Off-board airbases cannot be disrupted or destroyed (Case 9.10.10).

6.3.4 Over Capacity Penalty If the number of aerial units at an airbase exceeds the hosting capacity, all of the units at the base are placed in the "Flown" half of the airbase, and may only stage-move (Section 9.3) until the hosting capacity is restored.

6.3.5 Allied Airbase Nationality Limitations Only USAAF and RAAF air units can base at the Australian off-map airbase; only USN and USAAF air units can base at the off-map South Pacific airbase. Any Allied air unit may base at any type of airbase on the map. ***Exception*** *Allied heavy bomber (B-17 and B-24 P) air units can only base at Port Moresby (on the map).*

6.3.6 Japanese Floatplanes Japanese Rufe units can only base at a port or a Mobile air base in a coastal hex. When based at a port, the unit is kept on the Operational Map hex of the port and if it has flown, place a "Flown" marker on the unit. If disrupted, keep the Disruption marker on the floatplane unit when based at the port.

6.4 Airbase Layout

Each airbase is graphically represented on a player's ADC. An aerial combat unit that is eligible to perform a mission, during the Air/Naval Operations Phase, resides in the "Ready" half of an airbase's display. An aerial combat unit that has already performed a mission or an interception is placed in the "Flown" half of the airbase. Each airbase is also divided into areas that separate disrupted aerial combat units ("D" with shaded background) from undisrupted ones. Thus, a unit that returns from a mission during which it was disrupted is placed in the "Flown-Disrupted" quadrant of the airbase display where it lands. The Airbase's hex location (if a fixed land airbase), air unit capacity and anti-aircraft factor (if a land airbase) is listed on its title line.

6.5 Mobile Airbase Construction

Both sides can construct mobile airbases in friendly controlled, non-mountain land or coastal hexes. This construction begins during the Mobile Airbase Construction Phase of the game turn and concludes during the Regroup Phase of the same turn.

6.5.1 Restrictions No more than one mobile airbase can be constructed in a particular hex.

6.5.2 Procedure The player constructing the airbase designates the hex where the airbase is to be located, placing the counter's "Under Construction" side up on the Operational map hex during the Mobile Airbase Construction Phase. During the Regroup Phase (Module 14.0) an under-construction airbase is turned over to reveal its functional side. It may start hosting aerial units immediately.

6.5.3 Attacks Against Mobile Airbases An under-construction airbase may be the target of aerial bombing as a regular airbase (it has no AA defense). If an under-construction airbase suffers disruption or destruction as a result of bombing, it is removed from the map. The owning player may attempt to construct it again during any subsequent turn.

An operational mobile airbase may be the target of aerial bombing as a regular airbase. It has an AA factor of 2 (printed on the counter). If bombing destroys a mobile airbase, it is removed from the map. The owning player may attempt to construct it again during any subsequent turn

6.5.4 Dismantling Airbases An un-disrupted mobile airbase, that does not have any aerial units based on it, can be dismantled for use somewhere else by simply removing the unit during the Regroup Phase (Module 14.0). It can be re-constructed in any subsequent turn.

6.6 Airbases as Targets

Airbases can be the targets of enemy aerial missions. Effects are detailed below.

6.6.1 Airbase Defense An airbase may be designated as the target of an air mission, and may be attacked by bombing (Section 9.10). An airbase can defend itself against bombing or strafing aerial units with anti-aircraft (AA) fire (Section 9.9). A minor or mobile airbase has an intrinsic AA factor of 2, while a major airbase has an intrinsic AA factor of 3. This is reduced to 1 if the airbase becomes disrupted. An under-construction mobile air base has no AA factor. An airbase has no intrinsic defense against ground combat units. A ground unit cannot attack an airbase. The ground unit can capture a non-mobile enemy controlled airbase. Off-board airbases cannot be attacked, captured, disrupted or destroyed.

6.6.2 Airbase Disruption The disrupted status of an airbase lowers its AA defense, hinders the ability of its aerial units to scramble (Section 9.5) or evacuate (Case 6.6.5), and prevents the regrouping of aerial units based there (Module 14.0).

6.6.3 Airbase Destruction Place an "Airbase Eliminated" marker on its map location. Destroyed non-mobile airbases cannot be used for basing until repaired. Each Regroup Phase a repair attempt may be made for each destroyed base.

6.6.4 Airbase Capture A player's ground combat units can capture an operational enemy airbase by occupying the hex containing the airbase, thus turning it into a friendly airbase. Upon capture, the airbase is automatically marked disrupted and will become fully functional when the new owner repairs it during a Regroup Phase (Module 14.0). At the instant of capture, all aerial units on the ground there may attempt an airbase evacuation (Case 6.6.5) and escape to another friendly airbase. A mobile airbase is removed from the game permanently if an enemy ground combat unit occupies its current hex location. In this case, it may never be rebuilt.

6.6.5 Airbase Evacuation At the instant that an enemy ground combat unit captures an airbase, each aerial unit on the ground there may attempt to relocate to another friendly airbase. For each aerial unit at the airbase, the owning player rolls a die and modifies it with the DRMs found on the Airbase Evacuation Table on the PAC.

If the DR result is equal to or lower than the printed SR/MP value of the aerial unit, the evacuation attempt succeeds and the unit may stage to any other friendly airbase that is within its printed (not doubled) range. A unit that fails to evacuate is destroyed.

7.0 THE INITIATIVE PHASE

The player who gains the initiative is called the "Initiative player" for the current turn. The Initiative player will be first to activate in the Air/Naval Operations Phase. His opponent is referred to as the "Reaction player".

Note *There is no initiative determination DR (Section 7.4) on turn 1 of the scenarios; it is stated in the scenario special rules. Begin rolling for Initiative on turn 2.*

Each Initiative Phase, perform the following sections sequentially:

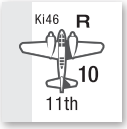
7.1 Allied General Regroup

The Allied player declares whether the current turn is a general regroup turn (Section 14.5). If this is done during the September turns, place a Regroup marker on the Turn 8 (October II) space on the Turn Record Track. The second Regroup Turn can not be declared until after that turn. If the first regroup is done on a December turn, no second regroup turn may be performed. There may be a maximum of two general regroup turns in the game.

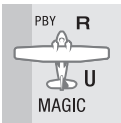
7.2 Individual Unit Regroup Designation

Both players may designate some, none or all of their disrupted aerial combat units at airbases as undergoing regrouping. Place a Regroup marker on the unit, and if there is a shortage of such markers, agree on some other counter or device to indicate that a unit is undergoing regrouping (Section 14.1). This is done in secret, on the airbase display.

7.3 Reconnaissance Flights



The Japanese player has two aerial reconnaissance units (Ki-46, codenamed "Dinah" by the Allies). The unit from the 6th Hikoshidan is normally in play. The other is available only if the 11th Hikoshidan has been committed (Section 5.2) during the current turn.



The Allied player has one P-38 Photo recon air unit available each turn. The PBY Magic Intelligence Recon marker also serves as a reconnaissance mission, and is available on turns in which this Random Event is in effect.

7.3.1 Basing A reconnaissance unit can be hosted at any operating airbase, but counts as either a fighter or bomber against minor or mobile airbases (Case 6.3.2). It does not count against the hosting capacity of a major airbase.

7.3.2 Reconnaissance Procedure Aerial reconnaissance missions are flown in the Initiative Phase. Players alternate placing reconnaissance units with the Initiative player going first followed by the Reaction player. The owning player rolls a die for each reconnaissance unit. A DR result of less than or equal to 7 allows the reconnaissance unit to fly ***(Exception*** *"Magic" always flies).* Add one to the die if the current turn has been declared a general regroup turn by the Allied player. If the DR result is 8 or more, the aerial unit is placed into the flown quadrant of its hosting airbase. If available, the aerial unit can be placed on any Operational map hex within its range from its hosting airbase (Case 7.3.1).

7.3.3 Restrictions Air reconnaissance units cannot be intercepted or engage in aerial or AA combat (and hence can only be disrupted or eliminated if caught on the ground). If destroyed on the ground while at an airbase, a reconnaissance unit cannot be replaced or rebuilt.

7.3.4 Aerial Recon Effects/Outcomes When an aerial reconnaissance unit is placed in a hex, the owning player may designate an airbase in the hex for examination. The opposing player must disclose the numbers and types (fighters or bombers) of aerial units at the base.

If a recon air unit or Magic PBY marker is on a hex which is a target for a friendly mission, a +1 DRM will apply to the opposing player's scramble DR for any fighters that attempt to intercept in that hex. Also, if the Japanese player places his recon unit on Port Moresby and/or the Allied player places his recon unit on Rabaul, a DRM applies during the following Initiative Determination (see Section 7.4).

7.3.4 Duration Aerial Reconnaissance units remain in the hex they were placed until the Operations Conclusion Phase (Module 12.0), at which point they are returned to a friendly airbase within their Range factor.

Designers Note *The Ki-46 Dinah was one of the fastest and highest flying aircraft of the day. The P-38 photo recon aircraft was stripped of its armament and had its already formidable engines tweaked for even higher performance. These were virtually untouchable at this point in the war.*

7.4 Initiative Determination

The Allied player rolls a die, altering it with the modifiers listed in the Initiative DRM table on the PAC.

If the DR result is 6 or higher the Allied player is the Initiative player. If the die-roll result is 5 or lower the Japanese player is the Initiative player. Indicate who has Initiative by flipping the Initiative marker to the appropriate background color side.

7.5 Initiative Missions Determination

The Initiative player rolls a die and consults the Initiative Player's Missions table on the PAC. The number in the right column is the number of missions that the Initiative player may perform before the opposing player can perform one.

8.0 AIR/NAVAL OPERATIONS PHASE

The Operation Cartwheel campaign was dominated by the air war raging overhead and the naval movement of troops. The key actions by the players in the game involve their aerial and (to a lesser extent) naval units.

The Air/Naval Operations Phase is played as a series of missions. The player executing a mission is known as the "Mission player", while his opponent is the "Interceptor player". The purpose of a mission is to move friendly troops and supplies or disrupt/reduce opposing units, bases, cities, ports and other assets via combat. The Interceptor player may want to prevent or reduce the success of the mission by engaging the mission units in aerial or naval combat.

8.1 Initiative Missions

The Initiative player gets to conduct a number of air or naval missions as determined in the Initiative Phase (Section 7.5) before the Reaction player gets a chance to conduct a mission.

8.2 Alternating Missions

Once the Initiative player has completed all of his initiative missions, or no longer wishes to perform further initiative missions, play switches to alternating missions, starting with a Reaction player's mission and followed by an Initiative player mission. Players then continue alternating, performing missions.

8.3 Passing

A player eligible to perform a mission may elect to pass (not perform) the mission, whereby the eligibility switches to his opponent.

8.4 Closure

When both players in succession elect to pass their mission eligibility twice, or neither player has units capable of performing a mission, the Air/Naval Operations Phase is over for the current turn. Proceed to the Ground Operations Phase (Module 11.0).

9.0 Air Missions

Conducting Air Missions is the focus of this game. Air Missions will be performed as a player's regular Mission or as a "Reaction Mission" (Case 9.1.5) which targets spotted naval units during an opposing player's Naval Mission.

9.1 Air Mission Restrictions

9.1.1 Air Mission Composition The number of aerial units that can participate in an air mission is limited as follows:

Allied Player

Up to 4 aerial units, if all are RAAF and USAAF.
Up to 4 aerial units, if all are USN and USMC.
Up to 2 aerial units, if one is RAAF/USAAF and the other is USN/USMC.
Only 2 units during a General Regroup turn (Case 14.5.1).

Japanese Player

Up to 4 aerial units if all are from the 6th and/or 11th Hikoshidans.
Up to 4 aerial units if all are from the IJN.
Up to 2 units if one aerial unit is from either the 6th or 11th Hikoshidan and the other is from the IJN.
If flying carrier aerial units, only carrier aerial units may participate in the air mission.

Designer's Note *These limits, admittedly artificial, are necessary to keep the air battles at a manageable level.*

9.1.2 Air Mission Eligibility Each aerial unit may perform only one air mission per Air/Naval Operations Phase. There is no limit to the number of times a particular target can be attacked by air missions during a turn.

Even though Interception (Section 9.4) is not an Air Mission, a fighter unit that performs a successful interception before it has performed an air mission is no longer eligible to perform an air mission during this Air/Naval Operations Phase. A fighter unit attempting an interception from the Flown half of an airbase does so with a reduced chance of success.

An individual unit marked with a Regroup marker cannot perform an air mission. A fighter with a Regroup marker may attempt an interception, but in doing so will lose its regroup status. USN carrier aerial units cannot perform a mission during a Regroup turn.

An aerial combat unit that is eligible to perform a mission has to be in the Ready half of its airbase display. An aerial combat unit that has already performed a mission or a successful interception is placed in the Flown half of the airbase display.

Within the eligibility limits, disrupted aerial combat units may participate in missions, but with lower odds of success and with greater risk. When an eligible disrupted aerial unit is assigned to a mission, place a Disrupted marker with the unit.

Note *It is recommended that players not reveal the constituent aerial units of an air mission until air-to-air, AA, or bombing combat occurs, whichever comes first.*

9.1.3 Air Mission Target Hex Designation The Mission Player indicates the air mission's "Target" hex to the non-mission player and places the Mission Target marker on the hex. If there is more that one type of target in the hex, he does not have to reveal which target type is being attacked until later in the mission (Section 9.6). If the mission player decides to perform a staging mission (Section 9.3), no target hex designation is made.

9.1.4 Reaction Mission This is a mission performed by the Interceptor player during a Mission player's Naval Mission. At any point, after the Mission player's naval units have been spotted (Case 10.3.2), the Interceptor player can interrupt the movement of those naval units and perform an aerial "Reaction Mission". This mission is resolved the same as a regular Air Mission (i.e. the Mission player can attempt to Intercept this Reaction Mission with eligible fighters). Once this Reaction Mission is completed, the Mission player may continue with his naval units' movement. Only one "Reaction Mission" can be performed per Operational map hex entered by the Mission player's unit(s).

9.2 Air Mission Movement

Aerial units move from one or more airbase(s) to the target hex on the Operational map. The maximum number of hexes an aerial unit can move away from its airbase is indicated by the unit's range factor (see air unit diagram). Each hex entered normally costs 1 range point. Do not count an aerial unit's airbase hex against its range movement limit, but count the target hex.

Units may only move into and/or through numbered hexes on the map. Un-numbered half hexes are considered a part of the map edge, and hence ignored.

It costs one additional range point to enter the first hex adjacent to the entry triangles (found on the map's north side for the Japanese, on the east side for the US, and on the south side for Australia) from an off-board airbase of the Operational map. It costs 2 range points to exit the map to these off-board Airbases. An aerial unit flying from an off-board airbase can enter any hex for which the colored triangle is part of the hexside. Thus, it will cost a unit flying from the off-board Japanese Truk airbase to Buka via hex 2101 six range points, 5 for the hexes and 1 for entering the map from the red entry triangle. It will spend the same six range points

to return to the same base, 4 for the hexes and 2 to exit via a triangle.

Exception *Carrier-based air units start counting their mission range from the hex, on the Operational map, they are located in.*

9.2.1 Bomber Extended Range Bombers are eligible to fly further by sacrificing some of their combat capability (reduced payloads).

Single engine Ts (TBF Avenger and B5N Kate) plus all Ds can increase their Range by one hex. If the player chooses to extend their range, they suffer a -1 DRM for their bombing combat.

All B, P, S and the G4M Betty T can increase their range up to 2 hexes. If the player chooses to extend their range they suffer a -2 DRM for their bombing combat.

9.3 Staging

Each friendly aerial unit can make a stage move once a turn. The player declares to his opponent a "Stage move" during his mission activation and then moves one or more of his aerial units beginning at the same airbase up to twice their range factor to another friendly airbase. Place these units into the Flown box of the new base they staged to. The airbase the unit leaves from may be disrupted, but the destination airbase cannot be disrupted. This occurs hidden from the opponent on the mission player's ADC.

9.3.1 A unit that has flown a mission or an interception earlier in the turn may stage move. A unit that stages is placed into the appropriate Flown quadrant of the new host base.

9.3.2 A disrupted unit that stages must make an accident risk check (Case 9.11.1).

9.3.3 A unit marked for an individual unit regroup (Section 14.1) this turn may stage, but loses its regroup opportunity (remove the Regroup marker) after it has staged.

9.3.4 Both sides units may still stage during a General Regroup Turn.

9.4 Interceptor Scramble

If the air mission target is within the range of fighters at the Interceptor player's airbases, up to four of those fighter units may attempt an Interceptor Scramble in order to attack the mission player's aerial units. Once per mission, a fighter unit may attempt and, if successful, perform an Interceptor Scramble, even though it may have participated in an Air Mission, Interceptor Scramble, or Target Scramble earlier in the phase. A fighter unit attempting an interception from the Flown half of their airbase display does so with a reduced chance of success. The Interceptor player does not have to declare beforehand what fighters will scramble, but is limited to **4 attempts per mission,** each for a different unit.

Disrupted fighter units may attempt an Interception, but with greater risk to themselves and at a reduced chance of success to make the Interception. Place a disrupted marker on any disrupted fighters which are successful in intercepting to indicate their status while on the TBB.

A fighter with a Regroup marker may attempt an interception, but in doing so will lose its regroup status.

9.4.1 Interception Procedure For each interception attempt, the Interceptor player designates a fighter unit, declares that he is attempting an Interceptor Scramble, rolls a die, and modifies the result by the DRMs listed on the Interceptor Scramble Table on the PAC.

Example of "?" Determination (see Interceptor Scramble Table on PAC) for Interception *A Japanese mission unit begins at Rabaul and moves six hexes to reach the target, Port Moresby. An Allied interceptor in 1609 (a Mobile airbase was built there earlier) uses one range point to reach the mission's target hex. The difference is 5, but that exceeds the maximum, so "?" ends up being 4.*

9.4.2 Interception Success If the modified DR result is equal to or lower than the SR/MP rating of the scrambling fighter unit, the scramble attempt succeeds and the Interceptor player moves the unit to the air mission's target hex. Once all Interception attempts are resolved and if there were successful Interception scrambles, a TBB battle will need to be resolved (Section 9.7).

9.4.3 Interception Failure If there are no successful Interceptor Scramble attempts, there will not be a TBB battle (Section 9.7), and the Mission proceeds directly to AA Combat (Section 9.9) and Bombing Combat (Section 9.10). A Ready fighter which failed to intercept is not considered Flown.

9.5 Target Scramble

After the Interceptor player has completed his Interceptor Scramble attempts, and if there are aerial units (bombers, fighters or reconnaissance units) on the ground of an airbase which is in the target hex of the mission, they may attempt to immediately stage to another friendly base in order avoid being caught on the ground. A fighter unit that failed at its Interceptor Scramble attempt is eligible to attempt Target Scramble.

9.5.1 Scramble Procedure For each such unit the Interceptor player rolls a die, altering it by the modifiers listed on the Target Scramble Table in the PAC.

9.5.2 Scramble Success If the DR result is equal to or lower than the printed SR/MP rating of the scrambling aerial unit, the scramble attempt succeeds and the unit may immediately stage move (Case 9.3) to any other friendly airbase that is within **its printed** (not doubled) range factor. If there is no friendly airbase within this range, no Target Scramble may be attempted.

Note *Both types of scramble, "Interceptor" and "Target", may be made from the same airbase. However, all the units still count towards the number of units at the airbase when such attempts are made.*

Note *An aerial unit may attempt and, if successful, perform any number of Target Scrambles in an Air/Naval Operations Phase, even though it may have participated in an air mission earlier in the phase, but only once per mission.*

9.6 Air Mission Target Designation

After the Interceptor's Target Scrambles are concluded, if there is more than one type of target in a hex, the Mission player must declare which specific target is to be attacked. An air mission can target one specific ground unit, all naval units, the city or town (with its port) or an airbase. The Port Moresby Radar can be affected by bombing its city (Case 9.10.10). Individual naval unit targets for each aerial unit will be decided during the aerial battle if intercepted or designated before AA fire if not intercepted.

Optional Rule If both players agree, the specific target of the mission (except Naval targets) will have to be written down when the mission is declared and revealed after the Target Scramble procedure is concluded.

9.7 Aerial Combat

Designer's Note *This is a game. If you wish to be presented with a detailed simulation of aerial combat, this is not the vehicle for you. The purpose is to have a tactical mechanism whereby one can arrive at an operational conflict decision, yet also one that demonstrates some of the differences between the opposing airplane designs, tactics and training. Here you will have to accept that, like with several other wargames, each unit takes on the characteristics of its primary individual machine (airplane type). Nevertheless, the following should present you with many interesting tactical decisions.*

Aerial Combat occurs when Mission aerial units encounter Interceptor fighter aerial units that have scrambled (Section 9.4) to the Mission target hex. If there was no successful Interceptor Scramble, there is no

Aerial Combat, and the Mission proceeds directly to AA Combat (Section 9.9) and Bombing Combat (Section 9.10).

9.7.1 Mission Group Co-ordination If the Mission aerial units were from different airbases, the Mission player has to designate the units from at least one base as the "late" group.

The Mission player finds the difference in the range flown by "late" group, and the range flown by any other non-"late" unit in the mission, and rolls a die. If the DR result is less than this range difference, then the Mission groups failed to co-ordinate their arrival over the target hex. The designated "late" group (latecomers) may then only enter the TBB on the second (or later) Air Battle Round.

9.7.2 Aerial Combat Components The following components are used in aerial combat:

The Tactical Battle Board (TBB)
8 Low/High Altitude markers
8 Movement Sequence markers (4 per side)
8 Aerial Combat Disruption makers
1 Surprise marker
1 Air Battle Round marker
Aerial Combat and Movement Charts

9.7.3 Aerial Combat Set Up Place the Air Battle Round marker in the first space on the Air Battle Track (printed on the map).

First, if the bombing mission is against naval units, the Interceptor player deploys his naval units, one to a hex, in the Target Zone hexes on the TBB (see Case 9.9.3 for Naval Anti-Aircraft Fire).

Be sure that each aerial unit that left its airbase from the "Disrupted" quadrant has a Disruption marker associated with it.

Each player then secretly places a Movement Sequence marker on each of his aerial units involved, which remains with it for the entire battle. A player also places a "Low Altitude" or "High Altitude" marker on each of his units that he wishes and is eligible to not start at the default medium altitude (no marker). Place an Altitude marker with the Sequence marker on the unit. Bombers (assumed to be loaded), except B-17 or B-24 units, may not set up at high altitude. If a player has fewer than four units involved, he may place any combination of Sequence markers on his unit(s). If, for example, he has only two units in the battle, he could use sequence numbers "2" and "4", while placing "1" and "3" aside. The Mission player is required to assign a higher sequence number to a latecomer (Case 9.7.1) than to a unit that enters the TBB on the first round of the air battle.

This sequencing is important, because it determines the order in which aerial units will move and perform combat during each round of the air battle. (See Case 9.7.5)

After sequencing, the Mission player sets up all his aerial units which are not "latecomers" on the board edge hexes labeled "M". He may place no more than one unit in a hex. Interceptor units and Mission latecomers start off the board.

When a unit starts its first impulse of movement of the air battle, its movement sequence number is revealed, and any markers attached to the unit are placed in the Aerial Combat Tactical Status Box correspondingly numbered with its Sequence marker. The markers placed there pertain to altitude, disruption, and whether or not the unit has an ace. The only marker that follows the unit around on the TBB is its Sequence marker. This is recommended in order to avoid clutter on the TBB.

9.7.4 Bomber Formation Flying When allocating the sequencing number chits, the Mission player can allocate one single chit for 2-4 units of multi-engine bombers which are adjacent to each other and start at the same altitude. This represents the bomber squadrons flying in a large defensive formation to mutually support each other. During their TBB turn, all units of this formation move together and must remain at the same altitude. The TBB positioning of the units of this formation in relation to each other may not change during their move.

9.7.5 Aerial Combat Sequence of Play Each aerial combat battle has up to six rounds. Each round has up to 4 impulses numbered 1-4. On Impulse one, the number 1 sequenced unit of both players will activate. On the second Impulse, the number 2 sequenced air units will activate and so on. If either player has not placed a particular sequence number on one of their air units, or it is not on the TBB yet, they do not activate an air unit in that impulse. The following sequence is followed in each impulse:

1) Placement of mission latecomers with with an available sequence number (not on the first round)

2) Mission unit, with that Impulse's sequence number, movement and:

   a) Anti-aircraft (AA) fire, if possible

   b) Bombing and continued movement, if possible

   c) Fire and continued movement, if possible

3) Interceptor unit with that impulse's sequence number movement and,

   a) possibly, defensive fire by mission bomber units

   b) fire, and continued movement, if possible

4) Begin next impulse if it is not the conclusion of the fourth.

5) Advance the Air Battle Round marker one space on the Air Battle Track once all aircraft on the TBB have completed their impulses.

Repeat this sequence until six rounds have been completed, or there is no Mission aerial unit left on the TBB. If, at the end of six rounds, there are still Mission aerial units on the TBB, they are simply returned to base (Section 9.11). For each Mission bomber that has failed to deliver an attack against a target hex (labeled "T"), or unit therein, award one VP to the opposing player because this is considered an aborted mission for that bomber unit (Section 9.8).

9.7.6 Entering the Tactical Battle Board Units enter onto the TBB at the altitude chosen during set-up (Section 9.7.3) as follows:

Mission Units A Mission aerial unit starts on the TBB from where it was set up on the hexes labeled "M" (the Mission entry area). Latecomers (Case 9.7.1) set up on a Mission entry area hex, starting on round two of the air battle.

Interceptor Units When an off-board Interceptor aerial unit's very first movement impulse occurs, it may:

Remain off the TBB and change its altitude by one level (players choice).
Roll a D10 and if the DR result is 1-9, the unit's first hex of movement onto the board will be a hex with the corresponding number to the DR

***Example**: If a "4" had been rolled, the unit may enter the TBB through any of the hexes numbered A03 to A05.*

The unit faces any of the eligible hex sides that will take it onto the TBB, and pays one movement point to enter the first map edge hex. From then on all of the normal movement costs and gains apply. The Interceptor unit enters the TBB at the last altitude it had attained while off the TBB. The Interceptor player rolls for each Interceptor unit individually.

Surprise! If the result from the DR described above is a 0 (ten), it has attained surprise. Place the "Surprise!" marker on the unit right after the DR. It may enter the TBB from any TBB board edge hex, and receives a firing bonus the first time it fires at a Mission unit. Once an Interceptor unit with the "Surprise!" marker has fired, remove the "Surprise!" marker. Mission aerial units cannot achieve surprise. Only one unit at a time may be assigned the "Surprise!" marker. If another 0 is rolled for another unit before the unit with the "Surprise!" marker has fired, it does not receive the firing bonus that comes with the "Surprise!" marker, but it may enter the TBB from any board edge hex.

9.7.7 Variable Aerial Combat Sequence of Play (Optional Rule) Beginning with Round 2, at the very beginning of each round, both players roll a die and modify it as follows (use all that apply):

+1 For each ace
+2 If the Surprise! marker is still with an air unit (unit not fired)
-1 For each disrupted air unit

If the modified DRs are tied, or if both are less than or equal to the current round, nothing happens. The Air Battle Sequence markers remain on the air units as they are. If, however, a player has a higher DR total than his opponent and their total is higher than the current round number, that player may exchange any two Sequence markers between two of his planes, or if there is only one plane, the player can assign it another sequence number.

For example *It is round 4. The Interception player has one ace with the "Surprise!" marker (+1 and +2) and one other disrupted fighter (-1) for a net DR modifier of +2. The Mission player has 2 fighters, one with an ace (+1) and 2 disrupted bombers (-2) for a net DR modifier of -1. The Interception player rolls a 3 that is modified to 5. The Mission player rolls a 5 that is modified to 4. The Interception player may exchange 2 Sequence markers between 2 of his planes. If he had instead rolled a 2 the DR totals would've tied, as well as equaling the current round. In either of those instances neither player would be permitted to rearrange the Air Battle Sequence markers.*

9.7.8 Leaving the Aerial Battle Board Units may exit the TBB only as follows:

Mission Units When a Mission aerial unit leaves the TBB, it is considered to have returned to base (Section 9.11). It may not return to the TBB for the remainder of the mission. It costs a unit one movement point to move off the TBB from a board edge hex.

Interceptor Units When an Interceptor aerial unit leaves the TBB, it is considered to be at the last altitude it had attained while on the board. It costs a unit one movement point to move off the TBB from a board edge hex. It may return to the TBB during one of its following rounds during this battle, remaining off-board for at least two rounds before re-entering, using the same procedure as it originally entered the board as described in Case 9.7.6.

9.7.9 Aerial Combat Movement Aerial units move from hex to hex, and from one altitude level to another, by expending (or gaining, by diving) movement points. A unit's basic (unmodified) number of movement points (MP) is the SR/MP value printed in the lower right on its counter.

The bomber unit's printed SR/MP is for when it is loaded. Once it has dropped its bombs (for whatever reason), this value should be increased by one on the following round and and until the end of the battle.

It costs a unit 1 MP to move into the hex it is facing without changing its altitude.

Each aerial unit must expend **all** of its movement points in each round, including those gained from diving. No unit can spend more than its modified number of movement points in a round.

A unit may perform movement and fire actions in any sequence, as long as it has movement points available to pay for its actions. It may, for example, fire and move, or it may move and fire, or it may move, fire, strafe/bomb, and continue to move.

A unit may not make consecutive turns or roll movements during its round (but depending on the aircraft, it may, as a single turn, turn 2 hexsides for the increased MP cost as shown on AMC on the PAC) . Each turn or roll must be interspersed with another form of movement. A unit may end a round with a turn or a roll, and then start the next round with a turn or a roll.

Recommendation *When moving a unit, leave its Sequence marker in the starting hex, facing the top of the number icon on the marker towards the hex side the unit was facing before it commenced movement. When a unit completes its movement for the round, reunite its Sequence marker with it. Also, 1/700 scale models can be easily adapted for play on the TBB.*

Aerial unit facing All aerial units must be oriented such that the front of the aircraft picture is pointed towards a hexside at all times. Bomber units may only move into the hex to the unit's front. A fighter unit, not performing a roll maneuver, may only move into the hex in front of it. Units change facing by expending MPs to perform a turn or Immelman (see the AMC on the PAC). The cost and ability to change facing will depend on the type of aerial unit and its status.

Altitude Unless otherwise indicated, all aerial units are assumed to be at medium altitude. Use the Altitude markers (placed on the Aerial Combat Tactical Status Box) to indicate those aerial units at low or high altitude. No unit can move above "high" or below "low" altitude levels.

Recommendation *Some ingenious play testers used cube dice instead of the Altitude markers. A unit at low altitude is placed on the playing surface. A unit at medium altitude is placed atop one cube die. One at high altitude is placed atop two cube dice.*

Changing Altitude A unit can change its altitude level by climbing or diving. Climbing costs a unit movement points, while diving will gain a unit movement points. For the numbers, see the AMC on the PAC. No unit can climb more than one level per round unless noted on the AMC. Loaded bombers (except P Bombers) cannot climb above medium altitude. Except for the P-40, F4U, and Ki-61 Tony air units, no other aerial unit can dive more than one level per round (see the AMC). Units that dive down more than one level, during their impulse's movement, may only move in a straight line (no turns or rolls).

Stacking While moving, aerial units may freely pass through hexes occupied by other aerial units and may end their movement, at any altitude, in a hex occupied by another aerial unit. Opposing aerial units in the same hex, regardless of altitude, may not fire on one another.

Roll Movement An aerial unit with enough remaining MPs may perform a special type of movement called a "roll". A roll enables the unit to move into one of the hexes to either the left or right of the front hex. This is the only occasion that an aerial unit may move into a hex through a hex side other than the one it is facing. A unit in hex G09, facing hex G08, for example, may normally only move into hex G08 with its next move, but by doing a roll to its right, it will end up in hex H08, facing hex G07.

Immelmann Roll An aerial unit with enough remaining MPs may perform an extreme loop-turn called an "Immelmann". This effectively enables the unit to move into the hex it is facing, and then change its facing 180 degrees. Bomber type air units

(B, D, P, S, T) may not perform Immelmann Rolls.

Example *A unit in hex G09, facing hex G08 moves into hex G08, and then changes its facing towards the hex it had just left (G09). It remains at the same altitude.*

Bombing Each type of bombing attack has particular procedures for execution. See Section 9.10 for an explanation of each type of attack.

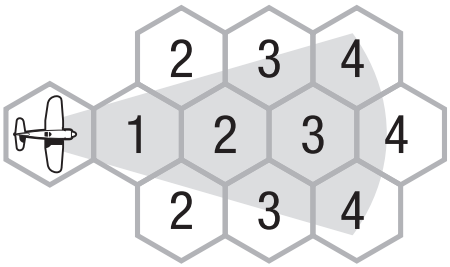
Firing Fighters, Beaufighters and optionally, empty single-engine "D" type bombers (Case 9.7.10a), which fire their guns, lose momentum – expend movement points – in the process. These units may perform one fire action during their impulse and expend 1 MP to do so. Multi-engine and full single-engine Bombers only fire while an opponent's fighters are moving. After firing, the unit must continue moving, if it has movement points remaining.

Strafing A fighter unit can make a strafing attack. It is, however, preceded by anti-aircraft fire, and it is resolved as a form of bombing attack with a bombing strength of 1 (Case 9.10.2).

9.7.10 Aerial Combat Combat is conducted on the TBB as follows:

Aerial Combat Fire An aerial unit may attempt to inflict damage by firing its guns at an enemy unit. A unit's aerial attack capability is rated by the Attack Factor (AF) printed on top-left of its counter. If this value is red, it is used for defensive fire only (bombers). The ability of the targeted unit to absorb such punishment without dire consequences is its Defensive Factor (DF), printed on bottom-left of its counter. A unit with no AF rating may not fire, though a unit with a modified AF rating of 0 or less may fire. Each moving fighter unit may fire only once during its impulse and it costs 1 MP to do so.

Range of Fire A fighter unit may fire at an aerial target up to four hexes distant at the same altitude as itself (with a maximum of three hexes between the fighter and its target). A bomber unit may fire at an aerial target up to two hexes distant at the same altitude as itself (with a maximum of one hex between the bomber and its target).



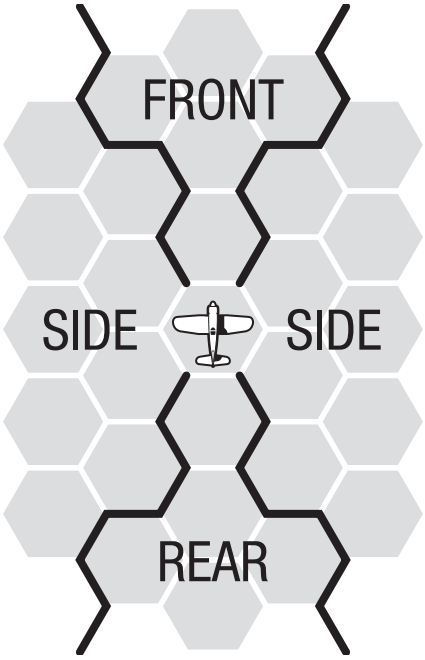
Aerial Target at a Different Altitude A unit may never fire at an aerial target at an altitude different from its own. ***Note*** *Altitude level differences represent about 5000 feet (1500m). Tactical altitude differences are factored into the numbers.*

Aerial Target in the Same Hex A unit may never fire at an aerial target in the same hex as itself, regardless of the target's altitude.

Blocking A unit may not fire through a hex (including its hexside) with a third aerial unit (friend or foe) that is at the same altitude and located between a straight line from the center of the firing unit's hex to the center of the hex its target is in.

Field of Fire A multi-engine bomber unit may fire at an aerial target in any direction within its range. A singe-engine bomber may fire at targets not in its front arc. A fighter (or "D" bomber acting as a fighter (9.7.10a)) may only fire at a target in its front arc (see diagram below Range of Fire).

Aerial Target Orientation: It is easier to hit an aerial target moving along the same or even opposite direction as the firing unit than it is to hit a target moving across the firing unit's field of fire. This makes the target's orientation to the firing unit very important. The following graphic depicts a target and its orientation, depending on the location of the firing unit.



Bomber Defensive Fire A non-moving bomber unit may fire at a moving Interceptor at the same altitude. The moving unit may not be fired on in the hex that it occupies before it commences its movement. Thereafter it may take fire once from each in-range bomber each time that it enters a hex within an enemy bomber's field of fire and range. Bombers may only use defensive fire at the moving fighter after first making a successful DR of 1-5. If the DR is 6+ the bomber may not fire upon the fighter (although it can try again if the fighter moves to another hex that is within range).

Every bomber may use defensive fire as many times as a moving interceptor is willing to present itself as a target by entering a new hex in range.

The defensive fire of a bomber is modified by the difference of the bomber's speed compared to the Interceptor unit's speed. See the Air to Air Combat Chart on the PAC.

9.7.10a Single-engine Bomber Fields of Fire (Optional Rule) Single-engine "D" bombers may not fire out of their front field of fire (Case 9.7.10). The single gunner in those aircraft cannot bring his weapon to bear in that firing arc. However, any of the single-engine bombers listed below that has delivered or jettisoned its bomb load can be used as a fighter. The air unit can then attack out of its frontal field of fire when it moves, as do fighters, but with the following DRM and a range of 2 hexes (not 4):

-1 For SBD, D3A Val and D4Y Judy

Note *the Beaufighter may perform as an F, but only when* ***not*** *loaded with bombs (not performing a mission as a B). See the Aircraft Movement Chart).*

Single-engine bombers that attack as a fighter may not perform Immelman Rolls or Roll maneuvers.

A single-engine bomber that does attack an enemy air unit as a fighter may not fire upon any other enemy air unit for the rest of the round (the rear gunners can't draw a bead due to the violent maneuvers, as well as the break-up of the bomber's defensive formation).

Note *B5N Kate and TBF Torpedo bombers cannot attack as fighters. The B5N aircraft did not have forward-firing guns, and for both, their airframes were designed to provide stable platforms for level and torpedo bombing. Also, the 2 hex range limit in this rule (not 4 hexes as is the case with fighters) is due to the lesser degree of training for the bomber pilots in comparison to their fighter brethren in this manner of aerial combat.*

9.7.11 Aerial Combat Resolution The player controlling the firing unit rolls a die and modifies it by the DRMs listed on the PAC. The modified DR result is then compared with the target unit's modified DF rating for the result. If the modified DR is:

Less than or equal to target's modified DF No Effect.

Greater than target's modified DF The target is disrupted. Place a Disruption marker on its Tactical Status Box.

Greater than or equal to target's modified DF x 2 Target is reduced (loses a step).

A unit is automatically disrupted for the remainder of the game turn when it loses a step. A unit already disrupted is not affected by additional disruption results.

Note *Allied C-47 air units do not have a reduced strength side. These units are eliminated if reduced.*

9.7.12 Aces Each side has two aces available and there is one generic ace. An Allied fighter unit can gain an ace whenever it reduces or eliminates an opposing aerial unit. When this occurs, roll a die. If the result is a 9 or 10, immediately place an ace counter with that fighter unit. Japanese aces start the scenario deployed with an air unit or arrive as per the Random Events procedure (Section 5.1). The ace may not be transferred to another unit and is lost if his unit is eliminated. The number of aces in the game is limited to those in the counter mix: The two white and red aces are only available to the Japanese player and the two sand and blue aces are only available to the Allied player. The one green Ace marker can be used by either of the players. No more than one ace may be assigned per unit. If both of a player's aces are assigned and the green Ace marker is currently un-available, skip this case.

9.7.13 Lucky shots "Straight" (unmodified) aerial combat DRs of 1 or 10, regardless of DR modifiers, result in a possible special case. See the PAC for the effects.

9.7.14 Aerial Combat Training Game This scenario lets players practice the air combat rules presented in Section 9.7. Playing time is 30 minutes or less.

Death of Admiral Yamamoto
18 April 1943

One of the most daring missions conducted by P-38s in WWII was an extreme-range meticulously-planned ambush, in which sixteen Guadalcanal-based Lightnings intercepted and shot down two Betty transports carrying Admiral Yamamoto and members of his staff, who were on an inspection tour of Japanese airfields near Buin. In a short dogfight, both Bettys and one Zero from the Admiral's escort were shot down. In return, one P-38 was lost and several badly damaged, but Japan's most famous and capable admiral had been eliminated.

Mission Aircraft (11th Hikoshidan) Initial Group: one G4M Betty (reduced), one A6M3 Zero. Late group (enters turn 3): one A6M3 Zero.

Interceptor Aircraft (USAAF) Two P-38 Lightnings.

Special Scenario Rules

Initial Japanese planes both set up at low altitude. The reduced Betty must set up facing toward the map edge opposite the Mission player's "M" set up area.

The Betty carries no bombs and moves using its higher SR/MP rating.

On turn 1, the Betty may only fly straight ahead (not expecting enemy attack). Starting turn 2 it may maneuver freely.

The first P-38 to enter the TBB does so at low altitude.

The second P-38 to enter does so at medium altitude.

All planes must remain on the TBB for all six turns.

Victory The Allies win if the Betty is destroyed and both P-38s survive. The Japanese get a draw if one P-38 is shot down, but the Betty is also lost. The Japanese win if the Betty is still alive (disrupted or not) at the end of turn 6.

Historical Result Reduced Betty shot down, one Zero reduced, one P-38 reduced.

9.8 Aborting the Mission

This case applies to individual mission units.

Abort Procedure At any time during a mission, before facing AA fire, a bomber unit may abort its mission. The unit jettisons its bomb load, and, if on the TBB, possibly accelerates, heads for the board edge, and returns to base (Section 9.11). The Interceptor player is awarded 1 VP (Section 16.1). This occurs each time one of the mission bomber units exercises this option.

If a bomber unit fails to deliver its bombs to the target zone on the TBB within the allotted six rounds, it is considered to have aborted its mission.

9.9 Anti-Aircraft Fire (AA)

When a bomber or a strafing fighter unit reaches the desired Target Zone ("T" hexes on the TBB), its altitude is deemed to be the altitude it has on the TBB at the time.

If the mission was not intercepted and there was no aerial combat, the Mission player:

1) Declares target type or exact target in the target hex (Section 9.6).
2) Declares the bombing unit's altitude (strafing fighters are always at low altitude).
3) The bombing or strafing fighter unit (hereafter called the "bomber") then faces anti-aircraft (AA) fire from its intended target and (if a Naval Mission) from naval units which are on the TBB hexes adjacent to the naval unit targeted.

9.9.1 Target AA Fire Target's AA factors are as follows:

Airbase The AA factor is 3 for a major base and 2 for other airbases. These are reduced to 1 if they are disrupted, and ceases to function when the base is eliminated.

Cities Port Moresby and Rabaul each have an AA factor of 2. For each two hits (rounded down) on the city, its AA factor is reduced by 1 (one) point; e.g. if a city has 4 hits on it, its AA defense ceases to function.

Ground Combat Units A ground unit, regardless of its size, has an AA factor of 1, even when disrupted or reduced.

Naval Combat Units A naval combat unit's AA factor is printed on the counter in the upper right corner.

9.9.2 AA Procedure The Interceptor player rolls the die to which he adds the target's AA factor. Find the numbered column in the top header row of the Anti-Aircraft Combat Table which matches the sum (AA + DR). Cross reference the sum with the bomber's DF in the leftmost column to get the result. Use the upper half of the table if the bomber is at a medium or high altitude or the bottom half if the bomber (or strafing fighter) is at a low altitude. A bomber's Defense Factor (DF) is modified by -1 if the bomber is disrupted. Apply the result in the cell to the bomber unit.

Exception *When conducting a dive-bombing attack, the bomber can only be engaged on the medium altitude AA table, even though the attack is being conducted at a low altitude. This is meant to reflect the difficulty of hitting a bomber conducting such an attack.*

9.9.3 Naval Unit AA Naval unit AA attacks can be made against an enemy air unit that is in or adjacent to the naval unit's hex in any order the owning player chooses. Apply any applicable DRMs listed on the Naval AA DRM chart beside the AA Table on the PAC.

Example *A disrupted, unreduced G4M (Betty) bomber unit is attacking Port Moresby (city) at medium altitude. The Interceptor player rolls a 10, taking us to the 12-column along the top header row. Reading down to the modified 3 row (4DF, -1 for disruption), we find a "D" result. As the bomber is already disrupted, the*

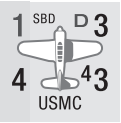
result amounts to "No Effect". If the bomber had attacked at low altitude, it would have been reduced by the corresponding "X" result in the lower half of the table.

9.10 Bombing Combat

Immediately after AA Combat resolution, if there is a bomber or strafing unit over the target, Bombing Combat takes place.

9.10.1 Bombers An aerial combat unit may conduct a bombing attack if it has a bombing factor (BF) printed in the upper-right corner of its counter.

9.10.2 Strafing Mission fighter units, which have not engaged in air-to-air combat during this tactical battle (or there was no successful Intercept), may conduct strafing attacks at a non-aerial target. Strafing must be conducted at low altitude in a Target Zone hex (labeled "T") and costs 1 MP. Fighter units have an "S" printed in place of their BF on the counter. Strafing has a bombing factor of 1.



9.10.3 Dive-Bombing D3A, D4Y, and SBD units must expend 2 MP in a target zone hex if on the TBB, and, in any case, be at low altitude to qualify for a dive-bombing attack. These units are denoted as "D" as their unit type designation. The dive-bombing aerial unit doesn't actually change altitude (it remains at low altitude). AA fire at dive-bombers is always resolved on the Medium Altitude section of AA Chart. A dive-bomber receives a +2 DRM for its bombing attack resolution. These units may also perform normal bombing attacks without the above beneficial modifier.

9.10.4 Precision Bombing B-17 and B-24 aircraft types may increase their bombing accuracy by performing Precision Bombing runs. These units are denoted as "P" for their unit type designation. These air units must be at high altitude and fly in a straight line for 3 hexes, the second or third of which is the target hex, to make a Precision Bombing attack. A unit that performs a Precision Bombing attack has a +1 DRM for its bombing attack resolution. P type units cannot attack naval units.

Designer Note *Actually they did, but not at all effectively. Rather than have player deal with very remote possibilities that these weapons would actually hit a moving ship I've taken it out of the game.*

9.10.5 Skip Bombing An undisrupted A-20 or B-25 air unit can perform a Skip Bombing attack versus a naval target. These units are denoted as "S" for their unit type designation. They must be at low altitude and fly in a straight line for 2 hexes, the last of which is the target hex, to make a Skip Bombing attack. A Skip Bombing attack has a +2 DRM for its bombing attack resolution.

9.10.6 Torpedo Bombing G4M, B5N, Beaufighter, and TBF units may perform this type of attack versus naval targets. These units are denoted as "T" for their unit type designation. These units must be at low altitude and fly in a straight line for 2 hexes, the last of which is the target hex, to make a Torpedo Bombing attack. A Torpedo Bombing attack has a +2 DRM for its bombing attack resolution.

9.10.7 Parafrag Bombing When Parafrag markers are made available through the Random Event, Allied B-25, Beaufort and A-20 Havoc air units can perform these attacks against Japanese airbases, ports, and supply units, including naval transport units flipped to their Supply Source side. The unit is marked with the Parafrag marker to indicate their use of this attack option. The unit must be at low altitude and fly in straight line for 3 hexes, the second or third of which must be the target hex. A Parafrag bombing attack receives a +3 DRM to the attack resolution.

9.10.8 Bombing Resolution Precondition If there is aerial combat (Section 9.7), the bomber must move into one of the six Target Zone (labeled "T") hexes or the hex with the naval target on the TBB. If there is no aerial combat, missions against ground units, airbases or cities proceed as if the bomber is moving through the Target Zone. If the targets are naval units, the Interceptor player will set up the naval units on the TBB and the Mission player will place his bombers on their targets so that AA attacks can be resolved. Note the altitude and status of each participating bomber unit. Declare the target, if it had not already been done during AA combat (Section 9.9).

9.10.9 Bombing Procedure For each bomber unit the mission player rolls a die and adds the result to the bomber's printed bombing factor (BF). This sum is modified by all the DRMs found on the PAC.

Cross-reference the modified DR result with the appropriate defenders row found in the left column on the Bombing Combat Table on the PAC, and apply the result found in the cell to the defender.

9.10.10 Bombing Result Effects The result of the bombing attack is as follows:

#	Is the number of hits inflicted on the target.
D	The target is Disrupted (Place the appropriate Disruption marker on the base or unit).
X	Airbase is destroyed (place an "Airbase Destroyed" marker on the owning player's ADC).
DX	Land unit disrupted. Naval unit flipped and disrupted.

Bombing Effects on Targets

Airbases When an airbase is disrupted, a Disruption marker is placed on the AA space of the airbase display, reducing its AA factor to 1. Each time a disruption result is scored against an airbase, all aerial units on the ground at that airbase must roll a die to see if they are damaged. A DR result of 6 or greater means the aerial unit is disrupted (move it to the disrupted half of the airbase display). If already disrupted, the aerial unit is reduced. If already reduced and disrupted, it is destroyed (remove from the game). Any other result has no effect. When an airbase is destroyed (the "X" result), an Airbase Eliminated marker is placed on its Operational Map hex location. All aerial units on the ground at this base are destroyed if the airbase is eliminated.

Cities/Towns Damage to a city/town target is measured in hits (markers depicting explosions, 1 explosion = 1 hit). The number of hits on cities/towns may affect the victory points during the Victory Points Phase. Additionally, each two hits (rounded down) on a city/town reduce its AA factor 1 point. No city/town hex may be marked with more than 4 hits on it at any given time except Rabaul which can take 8 hits. Hits in excess of 4 (or 8 for Rabaul) are ignored.

The damage to a city/town affects its port's capabilities. Hits have the following effects (parenthetical values are for Rabaul only):

1 (1-2) Hit = No Effect.
2-3 (4-7) Hits = Naval units may only sortie with a DR.
4+ (8+) Hits = Naval units may not sortie unless to leave the map during the Regroup Phase of the current turn.

Designer's Note *The reason why Rabaul can "absorb" more hits than other cities is because the Japanese are on the strategic defensive, so due to supply considerations (Module 13.0) they*

do not have to provide for the logistical needs of an offensive comparable to what the Allies must.

Naval Units The first "D" result on a naval unit results in a Disruption marker placed on the unit. A "DX" result on an undamaged naval unit causes it to be reduced (flipped) and a Disrupted marker placed on it. An already disrupted naval unit that suffers another "D" result is reduced to its "Crippled" side (keep the Disruption marker on the reduced unit). ***Exception*** *A transport unit that has a Supply Source icon on its reverse side is eliminated if reduced.* A "DX" result on an already disrupted naval unit causes it to be reduced and a Bombing Damage Effects Die Roll is made by the owning player. If an already disrupted and reduced naval unit suffers another "D" result, the owning player makes a Bombing Damage Effects Die Roll. If an already reduced and disrupted naval unit suffers a "DX" result, it is eliminated (sunk). Whenever a naval transport unit is reduced, any transported units must be reduced as well. If the transport is eliminated, so are the units that are being transported. Disrupted naval units have a negative DRM for attacks and their AA and DF is reduced by one.

Bombing Damage Effects Die roll Modify the DR by +1 if the affected unit is a transport or Japanese carrier naval unit. If the DR is 0-5 the unit remains disrupted and crippled (nothing happens from the additional hit). If the DR is 6+ the unit is eliminated and immediately removed from play.

Ground Combat Units When a ground combat unit suffers a "D" result, a Disruption marker is placed on the unit counter on the Operational map. See Case 11.4.3 for the effects of disruption on a ground combat unit. Additional disruptions from bombardment cause no further effect on a ground unit. Bombardment cannot reduce or eliminate a ground combat unit.

Supply units Apply the number of hits onto the supply unit. If a supply unit has 4+ hits, it is eliminated and immediately removed. See Case 13.2.4 for additional effects of hits on supply units.

Port Moresby Radar Each time a Japanese bomber (not fighter) unit scores at least one hit on this city, the Allied player rolls a die and applies the following DRMs:

-1 if the Japanese player bombed from low altitude

-1 if the Japanese player employed dive-bombing (Case 9.10.3)

+2 if weather is foul (Random Event #3)

If the DR result is 5 or less the radar station is permanently destroyed (flip Radar marker over as a reminder). The Allied player loses the -2 Scramble DRM (Cases 9.4.1 & 9.5.1) if the radar is destroyed. The Initiative -2 DRM (Section 7.4) in favor of the Japanese player takes effect once the Port Moresby radar is destroyed.

9.10.11 Bomber Acceleration All combat rounds after a bomber unit aborts or resolves its bombing attack will have its SR/MP rating increase by one.

9.11 Return to Base

Following the completion of an air mission, all surviving Mission and Interceptor units are returned to any friendly airbase within their range. As with the movement to the target hex, do not count the target hex against the range allowance. An aerial unit that lands at an airbase after a mission or an interception is always placed in the "Flown" half of the airbase display. More specifically, a unit is placed in either the Flown-Normal quadrant or the Flown-Disrupted quadrant of an airbase, depending on the unit's status.

Note *Pay attention to the airbase hosting limits (Section 6.3).*

USN carrier aerial units returning from a mission only land on the carrier "airbase" at sea or off-board in the South Pacific off-board airbase display, whichever is in range. Japanese carrier units can land either at their carrier "airbase", Rabaul, or off-board at Truk, whatever is in range.

9.11.1 Accidents For each disrupted aerial unit that returns to base roll a die. Modify the DR as follows (use all that apply):

+1 if the destination airbase is disrupted

+1 if Foul Weather is in effect

If the die-roll result is 10 or more the aerial unit is reduced. If already reduced the aerial unit is eliminated.

10.0 NAVAL OPERATIONS

Naval operations figured prominently in this theater of operations. Without air cover, however, both sides were extremely limited in what their ships could do to further their war aims.

10.1 Naval Missions

There are four naval missions which can be performed:

Attack Mission Naval forces sortie from a single base and attack a spotted naval force on the map.

Stage Mission Naval units move from one friendly base to another friendly base.

Support Mission The Mission player may move naval units from one location, which must have at least one carrier (of any type) as part of its force, into a hex on the operational map board which would permit the carrier-based planes to be in range to either assist an Amphibious Invasion or perform an aerial bombing mission in a future mission assignment.

Transport Mission Naval transports carry troops or supplies to another friendly base or to perform an Amphibious Invasion. Naval warships can accompany this mission and perform Bombardment attacks against enemy units in a coastal/island hex.

10.2 Naval Units

Naval units, with the exception of the Japanese submarine, represent squadrons of ships. Naval units are of three types: carrier (capable of basing air units), surface warships that can engage enemy naval units in Naval Combat, and naval transports that can carry ground combat and supply units (see Case 2.2.4). Some naval transport units are capable of Amphibious Invasions and have a Supply Source Icon on the reverse side to indicate their capability of serving as a Supply Source (Case 13.2.2).

Note *The Japanese player has a fourth type of naval unit, a submarine, which is made available via Random Event.*

10.3 Naval Unit Movement

Due to the scale of the game naval units can move anywhere about the map without limit. Naval units are rated as follows:

F = Fast speed

S = Slow speed

C = Crippled speed (damaged side of carrier and surface warships).

Movement ratings are only used for resolving surface combat attacks.

To perform a Naval Mission, the Mission player announces the type of mission it will be, and indicates which units will be part of the mission and their destination hex. Similar to Aerial Missions, a maximum of 4 naval units can be chosen for a Naval Mission.

Naval units are then moved singly or as a stack from their beginning location to the destination. If units for a Transport mission are coming from more than one location, a rendezvous location must be designated as well. The units from each different location will first perform a "component" move

to this rendezvous location. Interceptions or Reaction Aerial Missions (versus spotted units) can be attempted against these component moves if the Interceptor player chooses. Once all units of the mission are at the rendezvous hex, they carry on to the mission destination hex. This mission group can be intercepted and/or have a Reaction Aerial Mission performed against them if the conditions are met and the Interceptor player chooses to perform them.

Each naval unit can participate in one Naval Mission per turn. Once they have completed their mission, rotate them 90 degrees clockwise to indicate this.

Ground or supply units to be transported must begin in the port or coastal/island hex where the naval transport is located, and they embark at the beginning of the Transport Mission. The ground/supply units will disembark during the Ground Movement Phase (See Section 11.2). If the Transport Mission is for an Amphibious Invasion, the naval units move to the invasion hex and the Amphibious Invasion will occur during the Ground Operations Phase (Module 11.0).

10.3.1 Sorties Carrier and warship naval units of a mission may only move if they successfully sortie. Transport units may always move and do not have to check for sortie eligibility. Any carrier or naval unit that enters play from off-board or occupies a port with 1 or no hits automatically sorties. Any carrier or warship naval unit that occupies a port with 2 or 3 hits must each perform a Sortie check. Roll the die and consult the Naval Unit Sortie Table (found on the PAC) applying the listed modifiers. ***(Exception*** *Rabaul Case 9.10.10)*.

If the DR is 10 or more the affected naval unit may not move until the Regroup Phase, when they may only be moved to an off-board port. Any carrier or warship naval units in a port with 4 hits may only perform a Stage mission or move to an off-board port during the Operations Conclusion Phase.

10.3.2 Spotting Anytime a naval unit enters a hex that is within 3 hexes of an un-disrupted enemy airbase or naval unit (carrier or surface warship), enters or leaves a coastal hex or a hex occupied by a reconnaissance unit (only once per hex, when the unit enters or exits), the owning player must perform a Spotting Check DR. Modify the DR by the DRMs listed on the PAC.

If the DR is 6 or more, the naval unit is spotted and marked as such using the Spotted marker. The naval unit(s) carry on their movement but can now be interrupted to have a Reaction Air Mission or naval Interception performed against them.

If a naval unit or stack, which is already spotted, joins another unit or stack, which is not spotted, all units become spotted. Naval units which do not return to a friendly port during the End of Operations phase remain spotted or have a Spotted marker placed on them.

10.3.3 Naval Interception The Interceptor player can attempt to move friendly carrier and warship naval units, which have not performed a mission, into or within carrier-based air range by performing a successful Interception at any point during the movement of a Mission player's Naval Mission. The Interceptor player declares his intention to intercept the Mission player's moving naval unit(s), designates up to 4 of their naval units, and rolls a die. The DR is modified by the Naval Interception DRMs listed on the PAC

If the DR is 7 or more, the Interception is successful and the targeted mission's naval unit(s) are marked as spotted. The Interceptor player then places his designated units either into the Mission units' hex or to a position on the map where their carrier-based aerial units can perform a Reaction Mission against the Mission Player's unit(s). The interception combat or Reaction Mission (with the carrier air units) is then resolved. Once the combat is resolved, the Mission's unit(s) continue moving to the destination hex if they can. Naval units that intercept are marked as spotted and they cannot perform another mission during the rest of this turn. Indicate this by turning them 90 degrees clockwise.

If the DR is 6 or less the Interception attempt has failed. The naval unit(s) that attempted the interception and failed may still perform another Interception attempt against their opponent's later missions or perform a mission themselves during one of their following activations, if they have not already done so.

10.4 Naval Unit Surface Combat

Combat against enemy naval units is only possible if the units are spotted. Surface combat occurs when opposing naval units occupy the same hex.

10.4.1 Naval Combat Resolution Each Naval Surface Combat is resolved in a series of rounds. The number of rounds is determined by a DR that is divided by 3 (round up any fraction). There can be 1 to 4 Naval Surface Combat rounds. For example, a DR of 8 results in 3 rounds of Naval Surface Combat.

Rounds 1 and 2 of Naval Surface Combat are considered at Regular range. Rounds 3 and 4 are considered at "Close" range. To attack with each naval unit, a target enemy unit is indicated and then the owning player rolls a die, modifying it by the DRMs listed Naval Combat Chart on the PAC.

Designer's Note *Remember, each naval unit represents a number of ships, including destroyer escorts and other supporting vessels*

Transport units may not be targeted by opposing naval units until all their friendly warships have been targeted by at least one enemy unit first.

Compare the modified result to the Naval Combat Results Table on the PAC and apply the results.

Note *Allied LSTs and Japanese Daihatsu Landing barges do not have a crippled side. They and any unit being transported by them are eliminated if they have to flip to their crippled side. Also, ground units that become disrupted while being transported remain disrupted until the Regroup Phase.*

Surface Combat is considered to be simultaneous in each round. Combat Result effects are not applied to the affected naval units until both players' eligible units have resolved all combat DRs for the round.

10.4.2 Naval Damage Effects The following effects apply to surface warship and carrier naval units:

Disruption The unit has a -2 DRM for Surface Naval Combat.

Crippled Unit is flipped and will use its reduced Surface Combat and Anti-aircraft factors. Its speed is reduced to Crippled Status (and firing enemy units will have a +2 DRM in future rounds). The crippled unit will have to be moved off-board or to a friendly port with 3 or less hits during the Operations Conclusion Phase.

All disrupted naval units return to Normal status (have their Disrupted markers removed) during the Regroup Phase of the turn.

10.4.3 Naval Surface Combat Training Game This scenario lets players practice the Naval Combat Rules presented in Section 10.4.

Playing time 20 minutes or less.

Iron Bottom Sound!
13/14 November, 1942

This scenario represents two key naval battles that occurred during the fighting for Guadalcanal that helped pave the way for Operation Cartwheel some nine months later by

reducing the strength of the Japanese fleet. Players resolve each action separately for the number of combat rounds indicated, removing any disruption results from Part 1 prior to fighting Part 2, then total the score to see who won.

Iron Bottom Sound Part 1(3 rounds)
13 November 1942

The Japanese send two battleships and a destroyer squadron at night to shell Henderson Airfield on Guadalcanal. A force of American cruisers and destroyers intercepts and severely damages one battleship, which is sunk the next day by aircraft, and sinks one destroyer. However, one USN cruiser and half the American destroyers are lost and all the other USN cruisers are badly damaged.

Allies 1 x USN CA, 1 x USN CA (reduced, representing DDs)

Japanese 1 x BB (AF 3 / DF 4), 1 x CLT

Special Rules

Any damage to the Japanese BB is carried forward to Action 2
Rounds 2 and 3 are fought at "Close" range

Historical Result Full strength USN CA reduced and reduced CA sunk, Japanese BB reduced.

Iron Bottom Sound Part 2 (4 rounds)
14 November 1942

The Japanese return with their surviving battleship and escort. This time, they are met by two American battleships and four destroyers. The Japanese battleship is lost along with one destroyer. The Americans lose all their destroyers and suffer moderate damage to one battleship.

Allies 1 x USN BB, + any survivors of Part 1.

Japanese 1 x CLT + surviving BB, or replacement CA.

Special Rules The Japanese BB is the same as used in Part 1. If sunk in Part 1, replace with 1 x Japanese CA.

Victory Sum VPs earned from both rounds. Each side gets 1 VP per non-BB naval step eliminated and 2 VPs per BB step eliminated. Side with most points wins

Historical Result American BB disrupted, and half strength CA (representing DDs) sunk. Japanese reduced BB eliminated.

10.5 Naval Bombardment

Naval warship units accompanying an amphibious invasion can make bombardment attacks against enemy units in the same coastal/island hex as they are in. This is resolved the same as an aerial bombardment attack (Case 9.10.9) except substituting the naval unit's Attack Factor for the Bombing Factor. Supply units can only be targeted by naval bombardment if they are the sole occupants of the hex or they are a flipped Allied LST or Japanese Daihatsu Landing Barge.

11.0 GROUND OPERATIONS

You'd step from the line, take say ten paces, and turn around to guide your buddy. And nobody was there… I can tell you, it was a very lonely business.

US Marine's account of the ground fighting during the campaign.

Ground operations are conducted in the following order:

1) Initiative Player's Ground Unit Movement
2) Initiative Player's Ground Combat
3) Reaction Player's Ground Unit Movement
4) Reaction Player's Ground Combat

11.1 Ground Unit Initiative

A Japanese ground combat unit located in a hex in New Guinea or any of the Bismarck Islands other than Rabaul may only conduct a ground operation (movement and/or combat) on turns in which the Japanese player has the initiative (Section 7.4).

An Allied ground combat unit may only conduct a ground operation (movement and/or combat) on turns in which the Allied player has the initiative (Section 7.4). The Allied player may only conduct a Commando Raid (Section 11.7) on turns in which he has the initiative.

Otherwise an undisrupted ground combat unit not bound by the above restrictions may conduct a ground operation each turn. Undisrupted ground combat units may always be transported and/or perform an Amphibious Invasion by a Naval Transport Mission (Section 11.5) or perform a parachute drop (Allied player only).

11.2 Ground Unit Movement

Ground units may move from one land hex to an adjacent land hex each turn they are eligible to move. They may not voluntarily move off the game map. Ground and supply units which were transported during the Air/Naval Phase will disembark at a friendly port at the beginning of the movement phase and those ground units are ineligible to move further this turn.

11.2.1 Restrictions The 97th Marine Armor Battalion unit is restricted to hexes with a town, city, or along the coast. It may never enter mountain terrain.

11.3 Stacking

Up to 3 friendly units may voluntarily co-exist (stack) in a regular terrain hex. Only one unit is normally permitted in a mountain terrain hex. Opposing units may never co-exist in the same hex ***(Exceptions** see Sections 11.5 and 11.6).* If called upon to retreat, units may temporarily exceed the stacking limit. Over-stacked units must move to comply within the stacking limits by the end of the owning player's next ground movement phase. If the over-stack situation can not be resolved at this point, units must be eliminated (owning player's choice) to bring the stack back to legal stacking limits. Supply units do not count for stacking purposes.

***Note** Opposing naval units and ground units still embarked on naval transports can stack in a hex with opposing ground units.*

11.4 Ground Combat

Once per turn, an undisrupted ground combat unit may attack one enemy ground combat unit (defending player's choice if there is more than one unit) in an adjacent land hex during its Ground Operations Phase. Ground combat is voluntary. More than one ground combat unit may consecutively (one at a time) attack a particular enemy-occupied hex in the same Ground Operations Phase.

The ground unit may not attack a hex if it would become unsupplied if it were to move into that hex (see Module 13.0). As such, the 97th Marine Armor Battalion cannot attack into a mountain hex. A Japanese unit in hex 1608, for example, cannot attack into hex 1508, unless he could (hypothetically) trace supply from hex 1608 via hex 1609. Units with a red value may only defend.

11.4.1 Procedure The attacking player rolls a die and first modifies it by the type of **Main terrain** in the hex (Jungle or Mountain) whose modifier is listed on the TEC. Then apply any **Secondary terrain** modifiers which apply (found on TEC). Finally, apply either of the following which may apply:

-2 A parachute unit is attacking and the defending unit is in the same hex (Section 11.6)
-4 If the weather is foul

To this modified DR add the attacking unit's Ground Combat Factor (CF) and subtracts the defender's Combat Factor.

11.4.2 Combat Results Once a final result is determined, consult the Ground Combat Results table on the PAC and apply the result.

Note *A parachute unit may not remain in the same hex as an enemy unit following combat. If the enemy unit is not eliminated the parachute unit must retreat to any adjacent hex free of enemy units and that is not all-sea. If unable to do so the parachute unit is eliminated.*

Ground combat units that are eliminated may not be rebuilt. Remove them from the map and the game.

11.4.3 Disruptions When a ground combat unit is disrupted, a Disruption marker is placed on the unit counter on the Operational map. A disrupted ground combat unit may not move, perform an Amphibious Invasion, or attack an enemy ground combat unit, but it may be transported. It retains its full ground combat factor as a defense factor, as well as its AA factor of 1. Additional disruption from bombardment does not affect it. Bombardment cannot reduce or eliminate a ground combat unit.

A disrupted ground combat unit, if disrupted again as a result of ground combat, has to retreat and remains disrupted ***(Exception*** *Fortifications, Section 11.8).*

11.4.4 Retreats The owning player moves his retreating ground combat unit 1 hex away from the attacking enemy unit, preferably towards a supply source (Section 13.1). No unit may retreat into a mountain hex or an enemy-occupied hex. Units on an island which is completely situated in one hex can not retreat. Units may retreat in violation of stacking (Section 11.3). Any units unable to retreat are eliminated. Supply units can not retreat.

While a ground combat unit may not voluntarily move off the game map, it may retreat off the map, but having done so, it may not return to the map.

See Case 6.6.4 for the effects of ground unit capture of an airbase. A ground combat unit cannot voluntarily damage an airbase.

Unlike many other games, there is no advance after combat for attacking ground combat units.

11.5 Amphibious Invasion

Both sides can perform Amphibious Invasions. Naval transport units that carry land units during the Air/Naval Missions Phase can also "land" the ground unit in a coastal hex without a port to perform an Amphibious Invasion. Commando units can also perform Amphibious Invasions, but do not require a naval transport unit to do so (see below).

Amphibious invasions are of two types, contested and uncontested. A contested amphibious invasion is one where a ground unit is placed in the same hex as an enemy unit. Only undisrupted ground units can perform an amphibious invasion. An uncontested amphibious invasion is one that takes place into an unoccupied hex.

11.5.1 Contested Invasion Procedure In the case of a contested invasion, the attacking player rolls a die and modifies it by the modifiers listed on the Contested Landing Table on the PAC.

Any aerial units that are committed to the battle are moved to the "Flown" box of their airbase's or carrier's display after the invasion has been resolved.

11.5.2 Outcome The modified DR result is compared to the Amphibious Invasion Outcome table on the PAC. Apply the results as described.

11.5.3 Post-Invasion Operations A ground combat unit, having successfully participated in an amphibious invasion, is supplied in the hex where it landed. It may not move from that hex during a later turn unless a regular supply line is established (Section 13.2). If forced to retreat without having connected to a regular supply line, the unit is eliminated.

11.6 Parachute Drop

Once per game the Allied player may perform a Parachute Drop with the 503rd Parachute Regiment. The 503rd Parachute Regiment must begin at the airfield where the C-47 transport is located and then is transported to the target hex. It may be intercepted and suffers the same fate as the C-47 in air combat, so if the C-47 is disrupted or eliminated, the same result applies to the 503rd. Fighter units may escort this mission.

11.6.1 Parachute Drop Procedure The C-47 performs the Parachute Drop by moving through the Target Hex on the Battle Board at medium altitude (a Parachute Drop cannot be done at low altitude). To resolve the parachute drop, the Allied player rolls a die, adjusts it by any DRMs on Parachute Drop Table (see PAC) and then checks for the outcome on the results section by referencing the modified DR result to the text to its right. Apply the result immediately.

11.6.2 Parachute Combat Drops If the parachute unit lands in an enemy occupied hex, ground combat is resolved per the rules of Ground Combat (Section 11.4). If the defending enemy unit remains in the hex, the parachute unit must retreat to any adjacent hex, terrain permitting, which is free of enemy units. If unable to retreat the parachute unit is eliminated.

11.7 Commando Raids

Both sides can launch a Commando Raid. Both players have different limitations in doing so.

11.7.1 Allied Commando Raids The Allied player can launch Commando Raids on turns the Magic Intelligence Random Event is in effect, and he has the initiative, but not during a General Regroup Turn. One unit per turn can perform the Commando Raid. Any Marine unit or any Alamo Force unit is capable of performing a Commando Raid.

11.7.2 Japanese Commando Raid The Japanese player can launch one Commando Raid on any turn after "Operation I-Go 2" is initiated (Case 15.2.1) Note that unlike the Allied player, having the initiative is not a prerequisite for a Japanese Commando Raid. Only an in-supply SNLF unit can conduct a Commando Raid.

11.7.3 Commando Raid Procedure To conduct a Commando Raid, the player designates the raiding unit anytime during the Air/Naval Operations Phase and places it on the target hex. No naval transport unit is required to move the unit. The Raid is resolved during the Ground Operations Phase in the same fashion as an Amphibious Invasion (Section 11.5). The Raiding unit, if it survives the landing and subsequent Phases, can either remain in place or be removed to a friendly off-board holding area (Truk for the Japanese, the South Pacific or Australia for the Allied player) during the Operations Conclusion Phase of the turn.

11.8 Japanese Fortifications

The Japanese player has a number of fortification units that are deployed with units at the start of the game or scenarios. Fortifications have the following effects:

Each fortification has 2 "steps". Instead of applying a step loss to a Japanese unit in the hex, this can be applied to the fortification instead. A fortification is removed permanently from the game if forced to take a third hit.

A full-strength fortification applies a -2 DRM to any attack launched into the hex

by the Allied player. A reduced fortification applies a -1 DRM. These DRMs are in addition to the terrain modifiers from the hex or hexside.

Disruption results cannot be applied to a fortification; these must be applied to any Japanese units in the hex as per the rules. Only hits, for any reason, can be applied to fortifications. A defending unit in a fortification can choose to take a hit on the fortification instead of having to retreat, unless the attack is an Amphibious Invasion (see Amphibious Invasion Results on the PAC).

Once placed the fortification unit cannot be relocated, and if the hex is vacated by Japanese units the fortification is permanently removed from the game. Fortification units cannot be replaced or recycled. Allied units may never benefit from Japanese fortifications.

12.0 OPERATIONS CONCLUSION PHASE

Aerial reconnaissance units return to base and naval units still at sea can be returned to a port.

12.1 Aerial Reconnaissance

These units that were placed during the Initiative Phase land at any undisrupted, friendly airbase.

12.2 Naval Units Return to Port

Players may return any naval units still at sea to a an off-board port area, Truk for Japanese naval units, either Australia or the South Pacific for Allied Naval units, or to a friendly non-blockaded on-map port that has 3 or fewer hits. The Reaction player performs this first and then the Initiative player. Just pick up the units and relocate them to the desired port. The units are not subject to air attack or enemy interceptions. Naval units do not have to return to port, but any that remain at sea are marked as spotted (if not already so marked). Remove Spotted markers from naval units that return to port (on or off board).

Note *A crippled naval unit must return to a port. An un-crippled naval unit is not required to return to a port or exit from the map.*

12.3 Commando Units Return

Commando units that performed a Raid this turn may be removed to a friendly off-board holding area (Truk for the Japanese, the South Pacific or Australia for the Allied player).

13.0 SUPPLY DETERMINATION PHASE

In order to remain fully functional, ground combat units, naval units, and airbases (not aerial combat units) on the map must trace an uninterrupted supply line of any length to a friendly supply source during the Supply Determination Phase. Off-board airbases are always supplied.

13.1 Supply Sources

Allied airbases and ground combat units on the map must trace supply to Port Moresby or to a supply unit. Port Moresby cannot serve as a supply source if it has 4 hits on it.

Japanese airbases and ground combat units on the map trace supply to Rabaul or to a supply unit. Rabaul may not serve as a supply source if it has 8 hits on it

Designer's Note *The reason why Rabaul can "absorb" more hits than Port Moresby is for purposes of serving as a supply source is due to the fact that the Japanese are on the strategic defensive and do not have to provide for the logistical needs of an offensive comparable to what the Allies must.*

13.2 Supply Lines

A supply line is traced through a series of friendly-controlled, non-mountain, contiguous land hexes or unoccupied sea hexes. It may be traced into, but not through, mountain hexes. Both players may trace supply through the mountain hexes in which the Kokoda Trail is located. A supply line to islands must first trace to a port and then to the units. If the island has no port, the supply line must trace to a supply unit and then to the ground units or airbases. If an opposing naval unit occupies the same hex as the port or supply unit, the supply line is considered to be blockaded and supply can not be traced to that port or supply unit respectively. ***Note*** *garrison units are always considered in supply.*

13.2.1 Supply Units If unable to trace to the city, ground units and airbases may also trace a land-route only supply line to a supply unit. More than one supply unit can occupy a hex. One supply unit can provide supply to any and all units and airbases that trace supply to it. This will consume the supply unit and remove it from the board (or flip the supply unit over if it is on its two side). If a supply unit (one factor of supply) has incurred 4+ hits from combat, remove it (or flip a 2 factor supply unit) immediately. Also, when a hex a supply unit occupies is entered by an enemy ground unit, it is eliminated. ***Note*** *supply units are not "consumed" if the units they supply can trace a normal supply path to their friendly city, even if they trace through the supply unit.*

There are an unlimited number of supply units in the Truk and Australia off-board areas. Supply units can only be moved by naval or C-47 air units (Allied player in the latter case only); they cannot retreat or be captured and used by the opposing player.

13.2.2 Transport Units LST/T3 (Allied) and Daihatsu Landing Barges/T2 (Japanese) transport units in a coastal or port hex can be flipped to show their Supply Logistics Base side during the Supply Phase. The unit serves as Supply Source hex via a land-route only supply line for friendly ground units and airbases, as long as the unit remains in the hex and can trace a supply line back to their friendly city. These units are consumed the same as normal supply units when having to supply units/airbases that cannot trace a normal supply line. If consumed in this way, they are considered eliminated permanently.

When these units are flipped to their Supply Source side, they are treated as a supply unit and are eliminated the same as any other supply unit.

If the player no longer wishes to use these units as supply, they can be flipped back to their naval transport side during this Phase.

13.2.3 Air Supply An Allied Ready C-47 transport unit, which is based at an airfield that would normally be Out of Supply, can serve as supply source. Unlike other air units, these do not have a reduced-strength side; rather, their reverse side has a Supply Source icon, so flip them over to their Supply Source side. The supply capability of the C-47 is dependent upon the status of the airbase:

Airbase Normal = Normal Supply

Airbase Disrupted = Supply to units in or adjacent hexes only. If the base is disrupted during the operations phase, immediately mark any units Out of Supply that were drawing supply from the C-47 at this base and are now out of supply range.

A C-47 that is flipped to its Supply Source side is treated as a supply unit for bombing combat purposes. If an enemy ground unit enters the hex, the C-47 may attempt a Target Scramble (Section 9.5) and is eliminated if it fails. When a C-47, serving as a Supply Source, suffers 2-3 hits, immediately flip it to its air unit side and move it to an off-board airbase (South Pacific or Australia). If a C-47, serving as a Supply Source, suffers

4 hits, it is eliminated. In either case, any units that drew supply from the removed C-47 should be immediately marked as Out of Supply if unable to trace a Line of Supply to another Supply Source.

A C-47 on its supply source side can be flipped back to its aerial transport side during this phase.

13.2.4 Hits on Supply Sources Supply sources and units with hits from combat are limited in their capacity to provide supply:

1 Hit	No Effect
2 Hits	Supply only to units and airbases in the same or adjacent hex. Units 2 or more hexes away that traced supply are marked as Out of Supply.
3 Hits	Supply only to units and airbases in the same hex.
4 Hits	Supply unit immediately removed from the map (units and/or airbases immediately marked as Out of Supply). Supply sources such as Port Moresby cannot provide supply (requires 8 hits for Rabaul).

13.3 Penalty for Failing to Trace Supply

Ground combat units and airbases that cannot trace supply become disrupted, or, if already disrupted, remain disrupted and cannot be regrouped (Case 14.1.3). Air units at an Out of Supply airbase cannot regroup (Case 14.1.1). Ports that cannot trace supply cannot remove hits (Case 14.5.2) and disrupted or destroyed air bases cannot return to Normal status (Cases 14.1.2 and 14.2.6). ***Note*** *Naval units are not affected by supply and do not have to trace supply lines.*

14.0 REGROUP PHASE

14.1 Individual Unit Regroup

Both sides may attempt to remove the disrupted status of each in-supply airbase, aerial unit and ground combat unit so afflicted during this phase. A disrupted aerial unit must have been marked with a Regroup marker during the Initiative Phase to indicate that it would be attempting to regroup during this phase. Perform the regroup attempts in the following order:

14.1.1 Aerial Combat Unit Regroup Regrouping attempts of all aerial units are performed before trying to regroup airbases. Aerial units may not regroup at a disrupted or Out of Supply airbase (either they must await the airbase's restoration or stage-move to another base). For each unit attempting a regroup, the owning player rolls a die, modifying it by the DRMs found on the Aerial Unit Regroup Table on the PAC.

An aerial unit is returned to Normal status with a DR result of 1 through 7. Any other DR result means the aerial unit remains disrupted.

Restrictions An individually regrouping aerial unit cannot participate in air missions (Case 9.1.6). A regrouping fighter may attempt an interceptor scramble (Section 9.4) but suffers an adverse DRM, and in doing so, loses its regroup status (Regroup marker removed). Any aerial unit that stage-moves (Section 9.2) cannot regroup and has its Regroup marker removed.

14.1.2 Airbase Regroup Make a DR for each in supply base and modify the DR by the modifiers listed for aerial unit regroup on the PAC. A supplied airbase is returned to Normal status with a DR result of 1 to 7. Any other DR result means the airbase remains disrupted. Out of supply bases can not regroup.

14.1.3 Ground Combat Unit Regroup Make a DR for each in-supply disrupted ground combat unit. It is returned to Normal status with a die-roll result of 1 through 6. Any other DR result means the ground combat unit remains disrupted.

14.1.4 Naval Unit Regroup Disrupted naval units automatically return to Normal status during this phase. Reduced naval units may only attempt to recover to Full strength status during a General Regroup Turn (Case 14.2.5).

14.2 Airbase Reorganization

After the individual regrouping is complete, flown aerial units at all airbases are moved to the Ready half of their airbase. The Flown-Disrupted units move to the Disrupted-Ready quadrant, and other units to the Normal-Ready quadrant. Award VPs to the Allied player for the number of flown and eliminated 11th Hikoshidan units (Section 16.1).

14.3 Mobile Airbase Completion or Removal

Each supplied mobile airbase under construction is flipped over to become operational. A player may remove one or more of his on-map mobile airbases for redeployment elsewhere (Case 6.5.4) that have no aerial units based there at the time of removal.

14.4 Removing Hits

Both sides may voluntarily repair damage to their cities and ports by removing hits.

14.4.1 City Repair Each turn a player may remove up to three hits total from his cities (Port Moresby and Rabaul) under his control at the end of the Regroup Phase.

14.4.2 Town Ports Up to 2 hits may be removed from an in supply (Section 13.2) town/port at the end of the Regroup Phase.

14.5 General Regroup Turn

The Allied player can increase his regroup ability by declaring a General Regroup Turn during the Initiative Phase (Section 7.1). There may be a maximum of two Allied General Regroup turns in the game, but no sooner than September and no later than December.

Players should note that the declaration of a General Regroup Turn is entirely up to the Allied player. If only one or even none are taken, so be it. The Japanese player cannot declare a General Regroup Turn.

14.5.1 Restrictions During a General Regroup Turn the Allied player can only fly 2 units per air mission, and is hampered by a +1 DRM for initiative determination (Section 7.4). Furthermore, the USN carrier aerial units may not perform a mission during a General Regroup Turn (Case 9.1.2).

14.5.2 Effects During a General Regroup Turn's Regroup Phase, all disrupted Allied aerial units (at supplied bases) and in-supply bases automatically have their disruption removed. No DR is needed.

14.5.3 Allied Air Replacements During a General Regroup Turn's Individual Regroup Segment, the Allied player rolls one die. A number of steps equal to the DR result may be used to rebuild reduced or destroyed aerial combat units. The Japanese player gains one victory point for each Allied aerial combat unit step restored with these points. ***(Designer's Note*** *This represents the significant diversion and delay of actions elsewhere to reinvigorate operations in MacArthur's bailiwick.)*

In addition to the previously mentioned steps, the Allied player may "purchase" any other number of aerial combat unit replacement steps, but at a cost of 2 VPs each step to the Japanese player.

This is the only form of replacements for the Allies in the game. Ground combat units cannot have steps restored.

14.5.4 Japanese Air Replacements During a General Regroup Turn's Individual Regroup Segment, the Japanese player rolls a die to

determine how many replacement steps can be purchased. A die roll of 0 means none can be bought (*the Emperor said* ***no).*** The cost for each replacement step is an award of VPs to the Allied player. The cost is as follows:

1 VP per step in the First General Regroup Turn

2 VP per step in the Second General Regroup Turn.

14.5.5 Naval Unit Regrouping During a General Regroup Turn, players can attempt to restore reduced naval units to Full strength or return previously eliminated ones to play. There is a VP award to the opposing player for naval units returned to play per this rule.

During the Reinforcement Phase of a Regroup Turn, the Allied player may roll the die for each reduced and eliminated naval unit. If the DR is 6 or more, a reduced unit is flipped to Full strength status. If the unit was eliminated, it is returned to play in Full strength status with a DR of 8 or more. One half VP is awarded to the Japanese player for each step of Allied naval units replaced (fractions lost).

The Japanese player may roll the die for each reduced and eliminated naval unit. If the DR is 7 or more a reduced unit is flipped to Full strength status. If the unit was eliminated it is returned to play in Full strength status with a DR of 9 or more. One VP is awarded the Allied player for each naval step replaced.

14.5.6 Destroyed Airbase Restoration During a General Regroup Turn's Airbase Regroup Segment, both players may attempt to restore destroyed airbases to operational status. The airbase must be under friendly control and be able to trace a supply line to a supply source (Section 13.2) in order to qualify for restoration.

For each destroyed airbase which is eligible, the owning player rolls a die, adding 1 to the DR if the hex is currently occupied by a friendly unit. If the modified DR is 7 or more, the airbase is returned to operational status and the Airbase Destroyed marker is removed. Friendly air units may now base from the restored airbase up to its basing capacity. If the DR is 6 or less the restoration attempt is not successful and the airbase remains destroyed.

15.0 REINFORCEMENT PHASE

Reinforcements are usually placed during the Reinforcement Phase of their turn of arrival. The exact type and number of reinforcements is listed in each of the scenarios.

15.1 Allied Reinforcements

All Allied reinforcement units appear off-board, either in the South Pacific or Australia boxes during this phase ***(Exception*** *TF-36, Case 15.1.1).* The arrival point may be specified, if not it is up to the Allied player's discretion. All Allied reinforcement units will enter play either through naval or air movement. Ground and supply reinforcement units enter the map through naval or air transport.

15.1.1 USN TF-36 Commitment The Allied player can enter all available USN Task Force 36 naval units, and their carrier-based air units, twice during the game. The first occasion can be any non-Regroup turn. The second occasion is any turn after the Allied player has taken a Regroup turn (first or second).

The Allied player declares whether the USN units will enter play the current turn during the Random Event Phase after the Japanese declaration of the 11th Hikoshidan commitment. All available units are immediately placed in the South Pacific holding box. The CV aerial units are placed on the basing CV's airbase display. The following USN units are available the first time the Allied player declares their entry into the game:

Two carrier naval units with 7 carrier air units (3x F6F, 2x SBD, 2x TBF)

Three surface warship naval units (1x BB, 2x CA)

The second time the Allied player declares the entry of USN TF-36 into the game, only those units that have survived the first entry will enter the game. All remaining USN TF-36 units are removed from the map at the end of the turn during the Regroup Phase, regardless of their status. The Japanese player is awarded one VP for each TF-36 naval unit (including air) that enters the operational map on a naval mission during the turn (each turn).

15.2 Japanese Reinforcements

All Japanese Reinforcements appear off-board at Truk. The units enter the operational map through naval or air movement. Ground and supply reinforcement units enter the map through naval or air transport.

15.2.1 Operation I-Go 2 Once during the game the Japanese player can declare Operation I-Go 2, a second counter-attack attempt by the Imperial Navy. The intention to initiate Operation I-Go 2 is declared during the Reinforcement Phase, which means the units will actually enter play the following turn. This declaration can be made on any turn except turn one and the last turn of the game. When declared, the Japanese will secretly roll a die and modify it as follows:

+1 The Japanese currently has more VP than the Allied player VPs

+2 The Japanese currently have double or more VPs than the Allied VPs

+2 Declared in July

+1 Declared in August

Outcome Results

Modified roll of 1-5 Operation I-Go 2 lasts for next 3 turns.

Modified roll of 6+ Operation I-Go 2 lasts for next 2 turns.

During the Regroup Phase of the last turn of Operation I-Go 2, the Japanese player removes all the I-Go 2 units still in the game from the board.

The following 3rd Combined Fleet naval, air and ground units are made available once Operation I-Go 2 is initiated:

One carrier naval unit with 4 air units (2x A6M Zeros, 1x D4Y Judy, 1x B5N Kate).

Three warship naval units (2x BB, 1x CA).

Two IJN air units (1x G4M Betty, 1x A6M Rufe).

6th SNLF (unit placed at Rabaul or off-board at Truk).

All of the 3rd Combined Fleet naval units are placed into the Truk holding box during this reinforcement phase. Place the 4 CV aerial units on the CV airbase display and the additional IJN aerial units on any land airbase the Japanese player controls (within airbase stacking limits). These units will remain in play as long as the rules permit and/or the Japanese player desires to have them in play.

Reminder *The Japanese player is permitted to make one Commando Raid after Operation I-Go 2 is declared (Case 11.7.2).*

16.0 VICTORY POINTS PHASE

VP x10

If the Turn marker is not on the last turn of the scenario, advance the marker one space along the Turn Track, carrying with it all markers or units currently still with it on the track. Play the next turn.

Players attempt to win the game by accumulating Victory Points. The latter are scored by conducting bombing missions, reducing enemy combat units, controlling geographic hexes, and other risky options. Each Scenario

has its Victory Point awards and victory conditions listed. These conditions may modify the general VP awards listed below.

16.1 Victory Points Awarded During the Course of the Game

Allied Player VPs

+1 Each time a Japanese bomber aborts (Section 9.8) its mission (as it happens).

+1 Each turn in which the Japanese player states his intent to commit the 11th Hikoshidan (Initiative Phase).

+½ Each 11th Hikoshidan unit of any status in the "Flown" segment of a Japanese airbase before airbase reorganization (Section 14.3). Drop any fraction for odd number of 11th Hikoshidan air units that are Flown. (Airbase Reorganization Segment).

+1 Each 11th Hikoshidan unit destroyed that turn (Airbase Reorganization Phase).

+1 Each aerial replacement step the Japanese takes during the first Regroup Turn.

+1 Each Japanese naval step replaced during the Naval Regroup Segment of a Regroup Turn.

+2 Each Japanese naval step lost (as it happens).

+2 Each aerial replacement step the Japanese takes during the second Regroup Turn.

Japanese Player VPs

+1 Each time an Allied bomber aborts (Section 9.8) its mission (as it happens).

+1 For each Allied aerial step replaced during a the Naval Regroup Segment (Regroup Turn).

+1 For each TF-36 naval and aerial unit entered into play (each turn) (as they are entered).

+½ For each Allied naval step replaced during the Naval Regroup Segment (Regroup Turn, fractions lost).

+2 For each Allied aerial step replaced in excess of the number determined by the DR (Regroup Turn)

+2 For each Allied naval step lost (as it happens).

16.2 Victory Points Awarded After Game End

The game ends with the Victory Points Phase of the final turn of the scenario. At that stage, add the following the victory points (with any modifications per the scenario specific rules) to the players' totals and determine a winner. To receive these location VPs, a friendly unit must occupy the hex (any ground unit, air unit at a location with an airbase, naval unit at a port location).

+1 each Buna, Lae, Finschhafen, Buka, Choiseul, Vella Lavella, Redova, Santa Isabel, Wau, Morobe, Kavieng, Admiralty Island, Talasea, Trobriand Islands (Kiriwina) and Woodlark Island.

+2 each Buin, Wewak

+4 each Hollandia, Port Moresby, Guadalcanal, Rabaul

Note *VP award is halved (drop any fraction) if the hex listed above is out of supply.*

+1 For the Japanese for each hit on Port Moresby at the end of the game.

+1 For the Allies for each hit on the port of Rabaul at the end of the game (maximum 4 VPs).

Note *Scenarios 17.1 through 17.3 refer to some of the above VP awards (Sections 16.1 and 16.2), but have some modifications and additions for VP awards.*

16.3 Victory Levels

Each Scenario will list its own Victory Levels. Generally (unless otherwise stated), at the end of the game, subtract the Japanese Victory Point total from the Allied Victory Point total and compare the result to the listed Victory Level Table.

17.0 SCENARIOS

There are three scenarios that simulate portions of the Allied offensive, as well as the Campaign Game that covers the entire Operation Cartwheel campaign.

17.1 Introductory Scenario: Battle of the Bismarck Sea

The Battle of the Bismarck Sea was fought from March 2nd through March 4th, 1943. Seeking to retrieve the initiative following the defeat on Guadalcanal, the Imperial High Command ordered the transfer of nearly 100,000 troops from China and other areas to support a renewed offensive in New Guinea. The operation was a bold risk given the growth of Allied airpower in the region, and the reluctance of the Imperial Japanese Navy to further support continued operations in the face of growing offensive moves by the US Navy. This scenario is actually set before the battles covered in Operation Cartwheel. It serves as a means by which players can quickly get into the game with a smaller number of pieces. Although not historical (the Japanese forces are increased assuming a greater commitment from the Imperial Navy and Air Force), players should find it a challenge to play as the Japanese. Playing time is about 1 to 2 hours depending on the players' experience levels.

17.1.1 Japanese Set Up The Japanese player sets up first the following units as directed. All units begin the game at full strength and in Normal-Ready status.

8th Fleet Naval and Ground Units 2x T (Maru Transport) naval units. These units are carrying the three infantry regiments of the 51st Infantry Division and 2 supply units. The Japanese player selects which ground and supply units are being transported by the naval transport units. These units begin in Rabaul (1904). 1x Daihatsu Landing Barge "T" naval unit, flipped to its Supply Source side, is at Finschhafen (1505).

6th Hikoshidan Air units 1x Ki-43 Fighter unit at Lae (1506), 1x Ki-43 Fighter with an Ace and 1x Ki-21 Bomber unit at Wewak (1203).

Ground units in New Guinea All units set up with a 2-step Fortification marker. 1x Regiment of the 20th Division in Finshafen (1505), 1x Regiment of the 20th Division in Wau (1507) and another in Morobe (1607).

17.1.2 Allied Set Up The Allied player sets up second as directed. All units begin the game at full strength and in Normal-Ready status.

Air Units 1x P-40 RAAF Fighter, 1x P-38 Fighter, 3x B-25 Bomber, 1x Recon air unit at Port Moresby (1509). 1x B-17, 1x B-24 Bombers in Australia, 1x P-38 Fighter, 2x A-20 Bombers at Mobile Airbase/A (1709).

Ground units in New Guinea Port Moresby Garrison and Radar at Port Moresby (1509). 15th Australian Brigade at 1608, 17th Australian Brigade at 1609, Mobile Airbase/A at 1709.

17.1.3 Special Scenario Rules. The following rules apply only to this scenario:

The Battle of the Bismarck Sea Scenario lasts 1 game turn.

There are no Random Events.

The Allied player has the Initiative.

No Amphibious Invasions permitted.

Map Boundaries Only the following hexes are in play: all in columns 15XX through 19XX and all hexes south of and inclusive of XX04. Wewak is out of the play area, but the

air units based at Wewak may enter the playing area at hex 1504 for a cost of 3 Air unit's Range MPs.

11th Hikoshidan Air units Regular rules apply for this formation deployment and if the Japanese chooses to have it participate, they receive the following: 2x A6M Fighters with 1 Ace and 1x G4M Betty Bomber unit at Rabaul (1904), 1x A6M Rufe Fighter at any Japanese air base.

Spotting Once the Japanese naval forces are within 6 hexes of Port Moresby, start rolling for spotting. ***(Note** the Allied command was well aware of this Japanese reinforcement mission and had extra planes out on recon to find it)*

Optional units Before the scenario begins, first the Japanese player and then the Allied player can choose to have additional naval units participate in this battle. If the Japanese chooses to take naval, roll the die:

Odd result Japanese CLT naval unit received at start and Allied player is awarded 1 VP.

Even Result Japanese receives a CA unit at start and the Allied player is awarded 3 VPs.

These units will base in Rabaul. Only after the Japanese have taken optional naval forces can the Allied player then choose to have Allied naval. Roll the die and on a result of :

1-4 2 Australian CA available. Japanese player awarded 2 VPs.

5-8 1 Australian CA available. Japanese player awarded 1 VP.

9-10 1 Australian CA available. No VPs awarded.

These units begin based in Australia off-board.

17.1.4 Winning the Game Count applicable Victory Points as per Rule 16.1 (except those dealing with naval step losses which are changed below) and only hits against Port Moresby and Rabaul from rule 16.2. The following VP awards are in addition to or supercede those listed in Section 16.1 and are used to determine the winner of the scenario:

Japanese receive 1 VP for each step of the 51st Division or supply point which lands at Lae.

The Allies receive 1 VP for each step of Japanese infantry eliminated.

Allies receive 1 VP for each non-eliminated step of the Japanese 51st Division or Supply Point (which start in Rabaul) that is not in Lae's hex (0607) at game end.

Allies receive ½ VP for each step of a Japanese naval unit sunk.

Allies receive ½ VP for each step of a non-11th Hikoshidan Japanese aerial unit eliminated.

Japanese receive 1 VP for each step of Allied aerial units eliminated.

The player with more Victory Points at the end of the scenario is the victor.

17.1.6 Historical Outcome Despite the promised air-cover of nearly 100 fighters from the both the 6th and 11th Hikoshidans, General Kenney's 5th Air Force savaged the transports of the Japanese 8th Fleet. Using for the first time newly developed skip-bombing tactics, Kenney's B-25s, along with aircraft from the RAAF, sent transport after transport to the bottom. Only a handful of the 51st Division's soldiers, their heavy weapons and equipment, and virtually none of their supplies, reached New Guinea. Rather than bolstering the defenses, General Hidematsu Nakano's survivors would further stretch the rapidly dwindling logistical support for the Japanese defenders already in New Guinea and were hard-pressed to resist the Allied offensive.

17.2 Operation Toenails: The Invasion of New Georgia

This scenario covers the opening phase of Operation Cartwheel. Estimated playing time is 4 to 6 hours between opponents familiar with the rules.

17.2.1 Japanese Set Up All units, ports and airbases begin the game, except where noted, at full strength and at Normal-Ready status.

8th Fleet Naval and Ground Units 1x CA, 1x CLT, 3x T (2x Maru and 1x Daihatsu Landing Barge) naval units begin in Rabaul (0904).

6th Hikoshidan Air units 1x Ki-43 Fighter unit with an Ace at Lae (1506), 1x Ki-43, 1x Ki-61 Fighter, 1x Ki-21, 1x Ki-48 and 1x Ki-49 Bomber, 1x Recon unit at Wewak (1203). 1x Ki-21 Bomber unit at Finschhafen (1505). 1x A6M3 Fighter unit at Buin (2206). 1x Ki-45 Fighter at any of the above bases within stacking limits.

11th Hikoshidan Air units 2x A6M Fighter with 1 Ace, 2x G4M, 2x D3A Bomber, 1x Recon unit at Rabaul (1904) or off-board at Truk, 1x A6M Rufe Fighter at any Japanese air base. Available per Section 5.1.

Ground units in New Guinea All units set up with a 2-step Fortification marker (5 total). 1x Regiment of the 41st Division in Hollandia (1003), 1x Regiment of the 41st Division and 2x Supply in Wewak (1203), 1x Regiment of the 41st Division and Mobile Airbase/A in 1404, 1x Regiment of the 20th Division and 1x Supply in Finschhafen (1505), 2x Regiment of the 20th Division in Lae (1506). 2x Regiments of the 51st Division, both reduced, may set up with any of the other Japanese ground units in New Guinea.

Ground units elsewhere on the Map 65th Brigade in Talasea (1805), 1x Regiment of the 38th Division and 1x Supply in Kavieng (1803), 2x Regiments of the 38th Division + 2x Supply in Rabaul (1904), 1x Regiment 6th Division and 1x Supply in Buka (2105), 2x Regiments 6th Division and 2x Supply in Buin (2206), 7th SNLF and 1x Supply at Santa Isabel (2507 and/or 2608), 8th SNLF and 1x Supply at either Choiseul (2306 or 2407) or Vella Lavella (2307), SE Detachment and 1 Supply at Rendova (2408). Up to 6 Fortification markers can be deployed with any of these units. The Mobile Airbase/B may be deployed with any of these units except at Rabaul.

Garrisons Place all 5 garrison units onto their listed locations.

17.2.2 Japanese Reinforcements All units enter the game at full strength and Normal-Ready status.

July II (turn 2) 1x A6M3 Zero air unit, 1x Ki-21 (6th Hikoshidan), 1x G4M Betty air unit (11th Hikoshidan). 1x Daihatsu Landing Barge Transport naval unit.

17.2.3 Allied Set Up All units begin game at full strength and Normal-Ready status.

5th Fleet (Allied Naval Force) Naval units 2x CA, 4 T (3x Liberty, 1x LST) at either the South Pacific or Australia off-board holding areas. The transports are carrying the 41st Division (2 units), 97th Tank Battalion (1 unit), and 6x Supply (arranged as the Allied player chooses).

Ground units Port Moresby Garrison and Radar units in Port Moresby (1509). 15th Brigade of the 3rd Division (1 unit) in 1507. 17th Brigade of the 3rd Division in Buna/Gona (1608). The 2CD (American) Division (3 units) and 2x Supply is at Guadalcanal (2609). The 43rd Division (3 units) is in the Australia off-board holding area. Mobile Airbase / A is in 1709.

Air Units 1x RAAF P-40, 1x P-40, 3x B-25, 1x Recon are at Port Moresby (1509). 1x P-40, 1x P-38 are at the Mobile Airbase / A (1709). 1x P-39, 1x P-38, 1x Marine F4U, 1x Marine SBD at Guadalcanal (2609). 2x A-20, 1x B-17, 1x B-24, 1x C-47, 1x RAAF Beaufort in Australia.

Both Morobe (1607) and Wau (1507) airbases are Allied controlled but disrupted.

17.2.4 Allied Reinforcements The TF 36 naval and air units (See Case 15.1.1) are available as per the scenario special rule.

17.2.5 Special Rules The following rules apply to the scenario:

This 3 turn scenario begins on July I (turn 1) and lasts until the end of the August I turn (turn 3).

Allied player has the Initiative on turn 1.

Allied player may not declare a General Regroup turn.

All of the USN TF 36 units are available for use once in the scenario.

Japanese player may not declare "Operation I-Go 2" in this scenario.

Rabaul and Port Moresby start with 2 hits.

17.2.6 Winning the Game

VP awards as per Section 16.1 (except the Regroup Turn only VPs) and 16.2 location VPs except as modified below.

+1 each Each step of air unit eliminated.

+5 each Player who controls Rendova (2408), Choiseul (2306/2407), and Vella Lavella (2307). Reduce this VP award to 2 each if the units located there are Out of Supply.

17.2.7 Victory Levels

Japanese Major Victory -27 or less

Japanese Minor Victory -2 to -26

Draw +1 to -1

Allied Minor Victory +2 to +12

Allied Major Victory +13 or more

17.3 Rolling to an End: The Invasion of Bougainville

This scenario covers the Operation Cherry Blossom portion of Operation Cartwheel. Estimated playing time is approximately 3+ hours between opponents familiar with the rules.

17.3.1 Japanese Set Up All units and airbases, except where noted, start at full strength and Normal-Ready status.

Ground units Rabaul Garrison, 2x Regiments of the 38th Division, 2x Supply at Rabaul (1904). 65th Brigade at Talasea (1805). 1x Regiment of the 38th Division at Kavieng (1803). 1x Regiment of the 6th Division and a 1x step Fortification at Buka (2105). The unit is Out of Supply. 1x Regiment of the 6th Division and 1x step Fortification at 2205. 1x Regiment of the 6th Division, 1x step Fortification, 1x Supply at Buin (2206).

6th Hikoshidan Air Units 1x A6M3 Fighter, 1x Ki-48 Bomber unit at Kavieng (1803).

11th Hikoshidan Air Units 1x A6M3 Fighter with an Ace, 1x D3A, 1x G4M Bomber, 1x Recon is available as per Section 5.1.

Naval Units 8th Fleet CA and CLT at Rabaul (1904). 1 Daihatsu Landing Barge T unit, deployed on its Supply Source side, is at Kavieng (1803).

17.3.2 Japanese Reinforcements The only Japanese Reinforcements that can appear are if "Operation I-Go 2" is declared (Case 15.2.1).

17.3.3 Allied Set Up All the following units are at full strength and Normal-Ready status.

Ground Units Mobile Airbase / A at 1708. Mobile Airbase / B at Rendova (2408). Mobile Airbase / C at Santa Isabel (2507). 503rd Regiment of the 11th Airborne Division, 1x Supply at Guadalcanal (2609). 1st Marine Division (3 units), 2x Supply aboard naval transport units in South Atlantic off-board holding area.

Air Units 1x P-39 Fighter, 2x C-47 Transport units at Guadalcanal (2609). 1x A-20, 1x B-25 Bomber at Mobile Airbase / A (1708). 1x Marine F4U Fighter, 1x Marine SBD Bomber at Mobile Airbase / B (2408). 2 x P-38 Fighters at Mobile Airbase / C (2507).

5th Fleet Naval Units 2x ANF CA, 3x T (2x Liberty, 1x LST) in the South Atlantic off-board holding area.

17.3.4 Allied Reinforcements Only the following TF 36 naval and air units listed below are available as per the special rule.

1x BB, 2x CA, 1x CVL with 1x F6F, 1x TBF, 1x SBD air units.

17.3.5 Special Rules The following rules apply to the scenario:

This 3 turn scenario begins on November I (turn 9) and lasts until the end of December I turn (turn 11).

Only hexes **east** of hexrow 16XX exclusive are in play.

The Allied player has the Initiative on the first turn.

All of the USN TF 36 units may be used once by the Allied player.

The Japanese player may declare "Operation I-Go 2" at the end of any but the last turn of the scenario.

The Allied player may not declare a General Regroup Turn during this scenario.

Rabaul has 1d10 divided by 2 (round down) hits at start.

Allied supply traces to Port Moresby even though it is not part of the playing area.

17.3.6 Winning the Game

VP awards as per Section 16.1 (except for the Regroup Turn only VPs) and 16.2 location VPs except as modified below.

+1 each Each air unit step eliminated at end of game.

+5 each Player who controls Buka (2105), hex 2205 and Buin (2206). Reduce this VP award to 2 each if the units located there are Out of Supply.

17.3.7 Victory Levels

Japanese Major Victory -12 or less

Japanese Minor Victory -2 to -11

Draw -1 to +2

Allied Minor Victory +3 to +7

Allied Major Victory +8 or more

17.4 Operation Cartwheel: The Campaign Game

The July 1943 to December 1943 portion of the Operation Cartwheel campaign is covered in this scenario. Estimated playing time is 10+ hours between opponents familiar with the rules. The Allied player has the Initiative on turn 1. Begin rolling for Initiative on turn 2.

17.4.1 Japanese Set Up Set up as per 17.2.1.

17.4.2 Japanese Reinforcements The Japanese player receives the following units on the game turns listed below. All units appear off-board at Truk or any un-disrupted Japanese airbase.

August I (turn 3) 1x A6M3 Zero air unit and 1x Ki-21 (6th Hikoshidan), 1x G4M Betty air unit (11th Hikoshidan). 1x Daihatsu Landing Barge Transport naval unit.

September I (turn 5) 1x Ki-61 Tony air unit and 1x Ki- 49 (6th Hikoshidan). 1x Maru Transport naval unit.

October I (turn 7) 1x A6M3 Zero air unit and 1x Ki-48 (6th Hikoshidan).

17.4.3 Allied Set Up Set up as per 17.2.3.

17.4.4 Allied Reinforcements These units become available during the listed Regroup Turn and all units appear in Australia.

First Regroup Turn 37th Infantry Division (3 units), 1x C-47 air unit, 1x P-38 air unit with an Ace (may set up at Guadalcanal (2609) if the airbase is not disrupted and basing limits are not exceeded), 1x Beaufighter air unit and 1x Liberty T naval unit.

Second Regroup Turn 1st Marine Division (3 units), 25th Infantry Division (2 units), 1x F4U Fighter, 1x SBD Bomber Marine air units (these may set up at Guadalcanal (2609) if the airbase is undisrupted and basing capacities are not exceeded), 503/11th Airborne Parachute Infantry (1 unit) and 1x LST naval unit.

17.4.5 Special Rules The following are in effect at the start of the game:

This 12 turn long scenario begins on July I (Turn 1) and lasts until the end of the December II turn (Turn 12).

The airbases at Buna and Gona (1608) are destroyed.

The Allied player has all naval and air units of TF 36 available (Case 15.1.1).

17.4.6 Winning the Game

VP awards as per Section 16.1 and 16.2 as applicable.

17.4.7 Victory Levels

Japanese Major Victory 16 or less

Japanese Minor Victory 17 to 22

Draw 23 to 27

Allied Minor Victory 28 to 45

Allied Major Victory +46 or more *(historical result)*

18.0 EXAMPLES OF PLAY

The following examples of play are intended to illustrate key aspects of the game, as well as easing players into play.

18.1 Scramble

The Japanese player has designated Port Moresby as the target hex. The most distant mission unit is flying from the Rabaul airbase. The Allied player has 2 un-flown P-39s in Port Moresby and two flown P-40s at a mobile airbase in 1709. For the Port Moresby units, the "?" scramble modifier is 6 (7-1), reduced to the maximum of 4. For the 0810 units "?" = (7 - 2) = 5, again reduced to 4. All bases and units are fully functional, the Port Moresby radar is operating, and there is a Japanese aerial reconnaissance unit over Port Moresby. The final DRM for the Port Moresby Fighter units is (-4 - 2 + 1) = -5. It is (-4 - 2 + 1+ 2) = -3 for the units in 1709. The first P-39 from Port Moresby rolls a die of 7 (-5 = 2 < 4MP) and succeeds in its interception attempt. The second P-39 from Port Moresby rolls a die of 10 (-5 = 5 > 4MP) and fails to intercept the Japanese attack mission. The first P-40 from 1709 rolls a die of 9 (-3 = 6 > 5MP), and also fails its interception attempt. The other P-40 from 1709 rolls a die of 7 (-3 = 4 = 4MP) and succeeds. There is a solitary, flown, disrupted, reduced Beaufighter at the disrupted airbase at Port Moresby. It attempts a target scramble, in case the mission target turns out to be the airbase. With a DRM of +5 it has no chance of getting away, so stays put. At this point the Japanese player reveals that Port Moresby city is the target type within the target hex.

18.2 Aerial Combat (includes AA and Bombing)

Since there is a successful interception, this takes place on the TBB. The Japanese player secretly assigns movement sequence numbers to each of the units in his coordinated mission: *J1* and *J2* go to the two Ki-21 (Sally) bomber units that he will place in entry hexes F14 and I14 respectively. Sequence numbers *J3* and *J4* go to each of the Ki-43 (Oscar) escort fighters, to be set up in J15 and E15 respectively. Unit *J3* has an Ace marker with it. The Allied player assigns *A3* to his P-39, and *A4* to the P-40. All fighters start at high altitude. The loaded bombers start at medium altitude. The Air Battle marker is placed in position 1 of the Air Battle Track. All mission units are placed in their entry area hexes.

Round 1
Bomber *J1* moves to hex F11, *J2* to H11. Fighter *J3* moves to G13, facing G14 ("backwards"). *A3* (the P-39) enters on a DR of 5, flies to J06, facing I07. Japanese fighter *J4* moves to D11, facing G11. The P-40 rolls a 6, but judging the position to be sub-optimal, enters and immediately leaves the battle board. The Air Battle marker is moved to box 2 on the track.

Round 2
J1, diving to low altitude, goes to F07. *J2* diving to low altitude, gets to H07. *J3* goes to G11, facing H10. *A3* dives to medium altitude, to I04, facing I03. *J4* goes to F09, facing E09. *A4* rolls a 7, enters via M10, dives 2 levels (+5MP, no turning), and fires on *J2* from I08. (The bomber's defensive fire at *A4* was ineffective.) The final aerial combat DRM is 0; the DR is 8. *J2* is reduced and disrupted (8 = DFx2). *A4* rolls a 9 and is rewarded with an ace. *A4* continues its movement and winds up in hex E06, facing D05. Defensive fire from *J1* also proves to be ineffective.

Round 3
J1 gets to target zone hex 0604 to unload its bombs on Port Moresby. The AA fire ((DR = 4) +2 = 6) misses. The bombing DR is a 6. The Ki-21, at low level, scores 4 hits on Port Moresby city. A ((DR = 2) -1 = 1) destroys the radar station. The crippled *J2* aborts its mission, handing the Allied player a VP, and turns away from the target zone, hex K06, facing K06. The Japanese fighters at high altitude realize that they are out of the fight. *J3* dives to medium altitude and leaves the battle board via hex H14. *A3* dives to low altitude, flies to G03, and fires on *J1.* The DR = 2 does no damage to *J1. J4* goes to B11, facing A12. *A4* leaves the battle board.

Round 4
J1 accelerates ("L" with no bomb load), and leaves via hex F11. *J2* leaves via hex M05. *A3* feeling lonely and neglected, sulks and flies on to… who cares? *J4* leaves via A12. All planes return to their airbases. *J2,* being disrupted, rolls for a possible accident upon landing, but passes with DR = 6. The battle is over.

18.3 Naval Operation

The Allied player declares a Naval Operation – transport mission to make an Amphibious Invasion of hex 2206 (Buin on Bougainville Island). The 2 transports (one loaded with a USMC Infantry Regiment and the other with 2 supply units) begin in Guadalcanal (2609). The Allied player decides to have naval support for this mission with a BB and CA unit of TF-36 located off board. He would like to have the units arrive at the destination hex at the same time so sets a rendezvous hex for the two forces in hex 2606. Neither component of this mission can be spotted prior to this rendezvous hex so they are moved there. They proceed to hex 2505 which is now 3 hexes away from the enemy airbase at Buin. The Japanese roll to spot. There are no DRMs for this roll, and the Japanese rolls a 4 which misses. The Allied player continues into hex 2405, Japanese player misses the spotting roll again. Allied player moves into 2305 and Japanese player rolls an 8 which spots the Mission force. A Spotted marker is placed on the force.

The Japanese player decides that he wants to fly a Reaction Mission against the Amphibious Invasion force. He has a G4M Betty bomber and a A6M3 Zero with an Ace at Rabaul (1904). The US player has 2 x P-38 fighters in Mobile Airbase / C in hex 2507 which he rolls for, but only one interceptor successfully Scrambles. A TBB combat is resolved in which the Japanese Ace damages the US P-38 unit but not before it disrupts the B4M bomber. The Betty bomber approaches the convoy and targets the

transport with the infantry unit. The Allied AA fire has no effect, so the bomber makes its torpedo bomber attack from low altitude and achieves a DX result, which causes both the transport and infantry unit it is carrying to be flipped and both units are marked disrupted. The Japanese air units return to Rabaul (bomber makes its landing roll) and are put in the Flown boxes (Disrupted-Flown section for the Betty). The US returns the P-38 to Mobile Airbase / C (makes its landing roll) and it is placed in the Disrupted-Flown box of the airbase display.

Since the Marine unit is disrupted, it can no longer perform the planned Amphibious Invasion. With the Allies having the big US BB unit with this mission, the Japanese will not perform a Naval Intercept with only their CA and CLT available, so they are satisfied with what they achieved.

The Allied player decides on a later mission to attempt another invasion of Buin using the one LST transport carrying one Marine regiment and a supply. He will have the two 5th Fleet CA naval units escort this invasion mission. This force is spotted in hex 2208. The Japanese player decides to attempt a Naval Interception with his CA and CLT units at Rabaul. The Japanese player rolls to see if the Interception succeeds. There is a -1 DRM to the roll due to the 2 hits on Rabaul. A 9 is rolled and modified down to 8 which is a successful interception. The CA and CLT units are moved to the hex the mission forces occupy and a naval combat begins. Next, the die is rolled for the number of combat rounds. An 8 is rolled which is divided by 3 and rounded up producing 3 combat rounds. The first two rounds will be at normal range and the final round will be at close range. During the first round, the LST can not be targeted, because the Japanese only have 2 units which must first target the Allied CAs. Naval combat is simultaneous, so results are not applied until all units have fired. The Japanese CA fires at one Allied CA. He rolls an 8 which is modified +2 for his attack strength, - 4 for the ANF CA's defense strength, which results in a 6, disrupting the unit. The CLT rolls a 2, which is a miss. The Allied CAs both roll low and miss the Japanese targets. During round two, the Japanese player's CA hits the same Allied CA and since it is already disrupted, the unit is flipped to its crippled side. The Allied player disrupts the Japanese CLT unit. During the third and final round of combat for this battle, which also is now at close range, the Japanese get a +1 DRM. During this round, the Japanese successfully hit the crippled ANF CA which eliminates the unit (crippled and disrupted units which are hit again are eliminated). The other Allied CA hits the Japanese CLT which causes it to be flipped to its crippled side. That concludes the battle. The Japanese naval units remain in the hex and are marked spotted. The remaining Allied units carry on to Buin.

18.4 Amphibious Invasion

Carrying on from the above naval example, during the Ground phase of the turn, the Marine unit attempts its Amphibious Invasion against Buin. The Allied player will have the Marine D aerial unit at Mobile Airbase / B (in hex 2408) support this assault. The Japanese have defending one regiment of the 6th Division with a strength of 3. First the net DRM is determined. The Japanese have no air units available to support the defense. +1 DRM for the undisrupted defending Japanese unit. +1 DRM for the defending fortification level (it was reduced earlier via a bombing mission). Subtracting the 4 combat factor of the Marine unit from the 3 combat factor the defending 6th Division produces a -1 DRM. The Allies have a CA warship unit in the hex which gives a -1 DRM and the Marine D unit provides an additional -2 DRM. So the net DRM is: +1+1-1-1-2 = -2. The US player rolls the die with a result of 5 -2DRM = 3. The Invasion is a success. The defending Japanese must retreat (a fortification does not cancel retreats for Amphibious Invasions). They retreat to hex 2205. The Japanese supply unit which was in Buin is destroyed. The American Marine unit and the supply unit are now landed in Buin.

19.0 DESIGNER AND DEVELOPER NOTES

We have been gradually pushed back by the enemy, and unhappy days follow one on another.

Diary entry by Lieutenant Horie, 6th Sentai

Quite simply, the Japanese command in New Guinea was outperformed in every aspect of military activity, and tens of thousands of Japanese soldiers and airmen paid with their lives for that incompetence.

Lex McAulay, *MarArthur's Eagles: the U.S. Air War Over New Guinea, 1943-1944*

Designer's Notes

Operation Cartwheel is the second installment of games dealing with the evolution of airpower in warfare. The first game in the series, *Chennault's First Fight* (published in issue 12 of *Against the Odds* magazine, June 2005) was the debut title. This work arose out of a desire to do a game on the New Guinea campaign, as well as conversations with Steve Rawling at the 2005 Origins and World Boardgaming Conventions. I am sincerely grateful for his advice and support that made this game possible.

Japanese Player

You have a difficult task before you. Your forces are spread thin and there are many routes by which the enemy can come at you. Heed well the maxim that those who defend everything defend nothing. Your aircraft are generally inferior to those flown by your opponent, but you do have some advantages. Generally you can out-dogfight any Allied fighter, especially with your Zeros. Try to determine what your enemy's main attack will be, and use your fragile bombers to strike hard. The fortifications should buy your brave soldiers some time, but these will be of no use to you in attacking. Forcing the Allied player to take one or both Regroups should help you. Not only will this give you an opportunity to rebuild, but it takes away 1 or 2 turns of offensives that can be mounted against you. Consider carefully how often and when you commit the 11th Hikoshidan, or whether "Operation I-Go 2" should be declared. Using these resources wisely can be the means to snatch victory from the jaws of defeat, or may throw valuable and precious resources down the black hole of defeat.

Allied Player

You have a daunting task laid before you. The enemy is in control of much of the battlefield and is fighting more often than not from interior lines of communication. While you have a range of resources to bring to battle, beware of trying to do too much all at once. Coordination of combined arms over land, sea and air is one of the most challenging and problematic military operations that can be mounted. Keeping your forward units supplied, preparing the way through air missions by disrupting and reducing the enemy's positions before amphibious and/or airborne assaults are launched are keys to success. Reckless moves, or attacks without "follow through," will end in defeat and ignominy.

Aftermath

They have sown the wind, and they shall reap the whirlwind."

Hosea, viii, verse 7

The Japanese forces in New Guinea paid a staggeringly high price with their defeat following Operation Cartwheel. The following are examples of the scale of the Allied victory.

The main fighter units, 6th, 13th, 63rd, 68th, 77th and 248th Sentais, formed the

core of the Japanese air defenses. By the end of the campaign only the 13th would be able to withdraw, eventually to be destroyed a year later in the defense of the Philippines. The others had no serviceable aircraft by the end of 1944. Most of the surviving air and ground crew were pressed into service as infantry. Only 3 airmen of those in the 63rd Sentai survived to war's end in August 1945. Of the 130 men who made up the 69th Sentai based at Wewak, only 17 lived to see the end of the war. Of the 78th Sentai based at Hollandia, and one of the few units whose personnel attempted to break out and return to Japan, only 20 made it home.

Developer's Notes

It was a real pleasure getting the opportunity to develop this game by Paul Rohrbaugh. I had played *Chenault's First Flight* and found it a great game to play. *Operation Cartwheel* is similar to CFF, but has been adjusted to reflect the later timeframe of the war. Veterans of CFF will recognize many of the mechanics, but please note that the game is not exactly the same. The values of the aerial units reflect the squadron sizes, the training quality of the pilots and the ground support (maintenance) for those units. Of major note is the addition of the naval system to the game. When I first received the game to develop, the naval portion of the game was quite different than what you see presented here. But after reviewing it, I noted that the aerial type system could easily be used to reflect the desired model as presented. This was adjusted and through play-testing was found to just naturally integrate itself nicely into the game system.

An addition to the aerial game was the Bomber formations. This makes things interesting for the opponent to attack and adds a more realistic mutual support mechanism they had versus the original game. Veteran CFF players will also find that their units are a little more fragile and fewer. Therefore they can be wasted quite easily. Know when to withdraw because you may not have forces remaining to attack (primarily Allied) or defend (primarily Japanese) your objectives.

The Allied player will need to plan his game. There are only so many units to invade with and occupy locations. Take the war to the Japanese in planned stages (similar to how McArthur did) and watch your supply lines. As the Japanese, don't squander your forces too early and strike when the Allies have presented targets of opportunity. Since you do not make the decisions for Regroup Turns, the Allied player will set the pace for your replacements.

I would like to thank J.D. Webster for providing the small aerial and naval training scenarios for the game. These will provide players fun learning snippets of what the larger game is all about. It is my understanding that Paul has a third game in the series in the works, "Bloody April: the Battle of Arras". I look forward to seeing this game in the future. I have had many fun hours playing *Operation Cartwheel* and believe that you will as well.

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