

PACIFIC STORM

THE SOLOMON'S CAMPAIGN

OPERATIONS IN THE SOUTH PACIFIC, 1942–1943



Simulations Canada

PACIFIC STORM: The Solomons Campaign, Operations in the South Pacific, 1942 - 1943.

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1.0 INTRODUCTION: If the battle of Midway marked the 'end of the beginning' of the Pacific War for the Americans, the Solomons Campaign marked the beginning of the end for the Japanese. Early momentum had carried them as far as Guadalcanal in the Solomon islands from whose almost-completed airfields they hoped to threaten the vital US - Australian sea routes. The Americans were determined to block that threat, and indeed, roll the Japanese back to Rabaul in a series of actions codenamed "Operation Watchtower". The veteran survivors of the American Pacific fleet together with the first operational regiments of the Marine Corps were pitted against the best of the Imperial Japanese Navy for seven long months in a battle neither side could afford to lose.

This is a simulation of the air, sea, and land combat that raged through out the Solomons from August, 1942 until February, 1943. The player representing the Americans and their Australian allies must enlarge the initial lodgment on the island of Guadalcanal into a well-supplied, well-reinforced force capable of driving the Japanese into the sea. At the same time, considerable Japanese threats to this and other key locations must be countered. To complete the picture, the Allied naval, air and ground forces available for this task are noticeably smaller and less well trained than those of the Japanese.

The Japanese player faces a strategic

dilemma: the Midway fiasco drained the Empire of sufficient fuel oil for the Navy to operate with vigor. Remaining reserves must be husbanded carefully for the final conclusive showdown - whenever that might occur. Consumption of these irreplaceable stocks without decisive result would leave the Navy disgraced and the Empire defenceless.

During the course of the game each player assumes the role of Admiral Yamamoto or Admiral King, the strategic controllers of this theatre of war. As such, each player must concentrate on the grand strategy and broad choices open to him, and not on the minor tactics of the execution. For example, the Japanese player must carefully weigh the costs and benefits of sending a battleship bombardment strike force to Guadalcanal, and given the intelligence estimate decide whether the returns justify the risk. Once committed, units are no longer under your control. You must simply await results. The plotting of transit routes, the maneuvering of individual ships, the firing of guns, torpedoes, anti-aircraft barrages, etc are handled entirely by the computer.

2.0 GENERAL COURSE OF PLAY: Each player takes a turn reviewing Intelligence estimates, shaping strategy by setting Theatre Priorities, and fine tuning operations in the Operational Planning section. Once each side has completed this orders stage, movement and combat are resolved by the computer. Victory Points are awarded or lost for losses inflicted, net reinforcements drawn from the Strategic Pool, prestige considerations, and for Japanese player, supply is used. Finally, various housekeeping chores are performed by the computer prior to the start of the next turn.

Map hexes are about 110 nautical miles across, the fourteen turns are two weeks in length, and supply points represent 800 tons each. Air units contain 36 to 88 aircraft, naval units contain one individual ship if light cruiser or heavier, else four to eight smaller vessels, and ground units are generally brigade or regiment equivalent. The strength of each unit is represented in one or more "steps" which are composed of individual ships, aircraft or 'platoons' of 100 men.

While the historical participants in this campaign had surprisingly good information as to the other's dispositions and intentions, their knowledge was far from complete or accurate. This is reproduced in various ways. Information on enemy dispositions and combat activity is deliberately limited. The various screen and printed reports are complete and accurate for a player's own forces, but are much less so for the enemy. *Despite these limitations, using these reports to build insight into enemy intentions and capabilities is essential in plotting a victorious strategy.*

In this game the following abbreviations are used: BB - battleship, CV - fleet aircraft carrier, CVL - light aircraft carrier, CA - heavy cruiser, CL - light cruiser, CLAA - anti-aircraft light cruiser, DD - destroyer, APD - destroyer transport, AV or CVS - seaplane tender, SS - submarine, AG - air group, MAG - Marine Air Group, Bde - brigade, Reg - regiment, SNLF - Special Naval Landing Force, IJA - Imperial Japanese Army, IJN - Imperial Japanese Navy, HMAS - His Majesty's Australian Ship, USN - United States Navy.

3.0 GAME EQUIPMENT: Two identical, laminated maps representing the sea area over which the

campaign was fought are included in the game. The map is divided into five on-map and one off-map areas for the purposes of spotting. Named locations on the map have (or will have) airfields and are anchorages for naval units bringing supply. Proper ports from which naval units may be based are indicated by square symbols. The back of the map includes an Order Of Battle for the forces available to the theatre.

The two differently colored markers provided with the game can be used to keep track of force locations and aircraft ranges. These are quality markers. They can be sharpened to a good point and will, if reasonably used, hold it well. However, since the markers use a harder writing material to allow fine lines, pressing hard into the map surface will eventually cause damage. Please mark lightly. To erase marker notations from the laminated surfaces, simply rub them off promptly with a damp cloth. Using a dry cloth will remove most of the markings, but leave some residue.

4.0 GETTING STARTED:

4.1 BOOTING: Before first booting the game you should format a blank disk for saving games. Consult your DOS manual for how to format a blank disk. MSDOS users should use DOS 2.0 or later and boot the game by inserting the disk in the default drive of an already running system and typing 'SOLOMONS'. Amiga, Atari ST, Macintosh, & Windows users should click on the Solomons Campaign program icon.

4.2 GENERAL: In the upper left hand corner of the screen is a box entitled Main Menu. This box shows the choices available to the player for controlling his forces and operating the game. The large right hand box (the "Results Box") is the main display area for reports and activities. The screen wide bottom box (the "Dialog Box") is the prompt area, in which details about how to use the current display are indicated. In general, the arrow keys are used to move between choices and the return ("enter") key is used to select the current choice. The currently available choice is shown in inverse video while the menu is active, and in yellow (underlined for monochrome systems) when that choice has been activated.

The top four main menu choices are accessible in any order to the player, and upon completion of the turn, the player continues on by selecting the fifth choice, entitled "Staff Sortie Workup". In addition, there are two final choices ("Combat Resolution" and "Housekeeping") that are not user-selectable, but rather are highlighted automatically during the appropriate portion of the turn resolution.

There is no rigidly defined order of play. The Main Menu allows the active Player to access Intelligence, Strategic Planning, Operational Planning and the game Utilities modules in any order desired and as often as desired. It is suggested, however, that in a typical turn a player should first look carefully at the Intelligence reports, then consider Theatre Priorities, and finally examine and make any alterations in individual Unit orders. These actions are discussed in detail below.

4.3 ONE OR TWO PLAYERS: After booting, the computer will ask you to set the players for the Japanese and Allied sides. There are three human player settings and two computer player settings. The difference will determine how Theatre Priorities are selected

during play:

'Human' will cut out the effects of setting the Theatre Priorities and put ALL priorities, group, & unit orders exclusively under human player control..

'Assisted' is the default setting. The computer staff will rank Theatre Priorities based on its estimation of the current situation and generate appropriate orders, but these rankings can freely be overridden by the player.

'Human Historical' is like 'Human' except that approximately historical priorities are used each turn to set theatre & lower unit orders. These can also be freely overridden by the player.

'Computer' will give the computer exclusive command of all functions for that side, allowing it to react as it thinks appropriate.

'Computer Historical' will give the computer exclusive command but will force the use of historical priorities, rather than those that might be more appropriate.

Note that these parameters may be changed during the course of the game using the Game Utilities / Change Player Parameters menu. Command Span Limitations (as described further below) apply equally to all player settings.

In addition, if either computer choice is selected, the computer may be further established as "concealed" or "visible". When "concealed", the human player will have no access to the computer's side of the game. When "visible" the human player will be allowed access to the computer menus to examine the Intelligence summaries, Priorities, and Dispositions as set by the computer for its forces, but may not make any alterations (except from in the Utility menu).

5.0 UNITS & GROUPS:

5.1 UNITS: Units are the basic building blocks of military command. Each Unit contains one or more steps of a similar weapon type or asset class such as carrier aircraft, army infantry or naval destroyers. Each unit is rated for size, skill, morale, current rate of serviceability, weapons accuracy, weapons killing power against air, naval and land targets, virtual protection (speed and evasiveness) and actual protection (armor and damage capacity). There is a maximum of 140 units per side in this game.

5.2 GROUPS: Groups are a collection of Units under a single command. Unit types will not normally be the same, but will usually belong to the same branch of service. For example, the American group "Task Force 61" may contain aircraft carriers and their air groups, battleships, cruisers, and destroyers, but not ground based aircraft or infantry units.

Groups have a Morale rating based on the weighted average of the morale of the subordinated units. Losses, if beyond the preset threshold, will cause this morale to snap and the group will abort its planned mission and return to base.

Groups other than the Asset Pools and the Strategic Pool are said to be "front line groups". The number of front line groups is fixed in the game at ten for each side. In addition there are the three separate 'groups' showing the disposition of air, land and sea units, and a final group containing the Strategic Pool. As described later, the Strategic Pool is composed of units not currently in play that may be brought into play at a cost in victory points.

5.21 JAPANESE GROUPS:

The Japanese Navy organized its ships for administrative purposes into 'Fleets' but organized them for combat purposes into carefully tailored 'Forces'. The names and compositions of the many forces used during the Solomons campaign varied, but these six have been chosen as representative. Players should note that roles and force compositions are illustrative only and that they are free to develop their own as they choose.

Advance Force - the spearhead of the Navy operating out of Rabaul, in the early days it was repeatedly given four or more of the deadly heavy cruisers and sent in for point blank night time work at Guadalcanal.

Carrier Force - the big fleet aircraft carriers and their immediate escorts of destroyers were grouped here, with the occasional battleship and heavy cruiser for added anti-aircraft protection.

Vanguard Force - when a general fleet encounter was anticipated, the battleships and heavy cruisers plus supporting destroyers were grouped in this force.

Support Force - containing destroyers, heavy cruisers and sometimes battleships, this force was used to bombard the shore installations at Guadalcanal. While wreaking fearful havoc, it was never given quite enough strength to thoroughly suppress the defenders, particularly the Cactus Air Force.

Strike Force - extra units, once including a light aircraft carrier, were grouped and sent in to make direct attacks on Guadalcanal and lure the defending American naval groups within range of the Carrier Force or Vanguard Force.

Transport Force - this ad hoc group contained the slow but large transports and the speedy but small destroyer transports, together with their light cruiser and destroyer escorts. The latter came to be known to the Americans as the "Tokyo Express".

6th Fleet - the submarines of the Imperial Japanese Navy were grouped separately and pretty much fought their own war. Their primary targets being the big American warships, they haunted the likely transit routes up from Noumea.

25th Air Flotilla - The Japanese Navy had its own shore based air force and this was the controlling HQ in the area. Fighter and bomber groups were rotated in and out as needed (and available) from other areas.

17th Army - parent Eighth Area Army had jurisdiction over the Solomons and New Guinea. After the Americans landed, 17th Army was directed exclusively to the Solomons and was rapidly built up with newly arrived troops. A Japanese 'army' was the equivalent of an American corps.

18th Army - was created to control all Army units in New Guinea after 17th Army was reassigned to the Solomons. During the course of the campaign it attempted to capture Port Moresby from the Australians.

Strategic Pool - virtually all of the Imperial Japanese Navy not historically used is found here together with certain air and infantry units that joined, or could have joined, the campaign later. Units may be freely bought once available.

5.22 AMERICAN GROUPS

Task Force 61 - this was composed of the various aircraft carriers and their escorts. Each aircraft carrier typically had two or three cruisers and sometimes a battleship together with four to six destroyers as its immediate anti-aircraft and anti-submarine protection.

Task Force 64 - ships surplus to the requirements of Task Force 61 were grouped into this equivalent of the Japanese Advance Force. Its job was to interdict all Japanese attempts at naval superiority in Guadalcanal waters.

Task Force 62 - was composed of the American transports, destroyer transports and their escorts. Transports were in critically short supply throughout and their preservation was absolutely vital to the war effort.

Task Force 67 - as the American naval build up continued, this task force was activated to control the new light carriers and their escorts.

Task Force 68 - this hypothetical task force has been created to allow the Americans more flexibility in their dispositions, should they so desire it.

Task Force 65 - contained the American submarines based in Brisbane.

5th Air Force - all of the air units commanded by General MacArthur in the South West Pacific Theatre came under the 5th Air Force. Apart from supporting Guadalcanal, it protected New Guinea and raided Rabaul on occasion.

13th Air Force - originally named Task Force 63, these air units were drawn from Hawaii and the central Pacific to protect the newly established bases of Noumea, Espiritu Santo, Efate and Guadalcanal. The units based on the island of Guadalcanal (Watchtower codename "Cactus") became famous as the 'Cactus Air Force'.

New Guinea Force - so named while composed of the highly effective Australian militia and regulars protecting Port Moresby and Milne Bay, it was renamed I US Corps when the first American troops joined it and the counterattack against the 18th Army began.

14th US Corps - all troops fighting in the Solomons came to be organized as this corps.

Strategic Pool - During the course of the game a small number of units that could have fought but did not will be made available in the pool. Historically, every operational unit that could possibly be spared to fight in the Solomons was, and so the pool is very small.

6.0 INTELLIGENCE

6.1 VIEW OFFICIAL COMMUNIQUE: Each side prepares statements for public consumption regarding events of the past two weeks. The most recent are available for inspection here. Be aware that public opinion sometimes needed protection from the harsher wartime realities. Enemy losses will never be described as less than 'moderate', and friendly losses never worse than 'very heavy'. Any reference to a change in command in a particular group often means that it was handled very roughly by the enemy without corresponding success.

6.2 VIEW ESTIMATE OF STRATEGIC BALANCE: This screen shows the crude ratio of Japanese to American air, naval and land steps active in the game, together with an appreciation as to Japanese strategic fuel stockpile use and any excessiveness of American losses in relation to Japanese. Also included is a detailed breakdown of the accrual of Victory Points to date. Note that enemy figures are cumulative estimates that are subject to an error of plus or minus 15% per turn as a default.

6.3 VIEW ANTICIPATED ENEMY INTENTIONS: This report shows the name,

type, anticipated Mission and Intensity, day or night restriction, and expected area of operations of each enemy front line Group. American reports of estimated Japanese intentions will be quite accurate because they could read the secret Japanese Naval codes (MAGIC) from early 1942 onwards. The Japanese, although not without their own strengths, had no such advantage. As a consequence, their reports of American intentions will reliably reflect anticipated American staff thinking, but will not reflect any actual changes made personally by the American player.

6.4 VIEW DISTRIBUTION OF FRIENDLY / ENEMY ASSETS: These reports show the distribution of friendly or enemy steps of various types for each of the six pre-defined spotting areas. This quickly shows a player where the key elements of the forces of each side are concentrated. The friendly report is completely accurate. The enemy report will vary. If there are two or fewer of a particular type step then the report will be reasonably accurate. If there are more than three then the report will deviate up or down in accordance with the Fog of War setting for Area Estimates in the Game Utilities / 'Fog of War' menu. For example, if the operational estimate setting is set to 20, then estimates will be accurate to plus or minus 20%.

6.5 REVIEW SUMMARY OF DESTROYED ASSETS: This option shows a listing sorted by player and weapon type to either the screen or printer. Shown are asset name, sorties made, steps damaged and steps destroyed. These numbers are shown for both the previous turn and for the game to date. For friendly assets the number of replacement steps available (if any) and the number of steps currently short of full strength are also shown. Enemy figures are estimates based on cumulative estimates to date. The numbers for enemy assets and losses will be plus or minus 15% or any other amount set in the Game Utilities / 'Fog of War' game report accuracy menu.

6.6 REVIEW CURRENT STATUS OF COMBAT UNITS: This option shows a listing sorted by group of all units not in the Strategic Pool. Group name, mission, intensity, day or night restriction and target zone are shown, followed by unit name, current and maximum number of steps, serviceability rate, skill rating, morale rating, location, total sorties made to date, and total step losses to date.

6.7 VIEW STATUS AND CAPACITIES OF BASES: This option lists each base, its ownership, its supply use & supply on hand, its Port & Air capacities, and strength estimates for contacted opposing units.

6.8 VIEW ARRIVAL DATES OF FRIENDLY UNITS: This option lists the turns at which units historically became available. Japanese units are always available to the strategic pool, but American units will not enter the strategic pool until their historical turn of appearance.

6.9 TOGGLE PRINTED COMBAT RESOLUTION REPORT: This option causes combat results and official communiques to be printed out as they are generated to a standard parallel printer (for the MSDOS version; but may not function on other machines depending on your setup). When the report is toggled on, a message to that effect will appear on the screen just below the Statistics Box. This option can also be toggled when the Main Menu is active by using the 'P' key.

7.0 STRATEGIC PLANNING:

7.1 GENERAL: Each player will establish his overall strategy for the turn by ranking in descending order of importance a list of key theatre priorities. Once this ranking has been made, the computer, in its capacity as 'staff' administrator, will generate all necessary Group and Unit orders to implement the strategy. In many ways, this is the heart of the game from the player viewpoint, so careful use of this function is advised. Note that Group and Unit orders can later be individually overridden in the Operational Planning Phase, subject to National Command Span limitations. If the Theatre Priorities are reset after individual orders have been given, those orders will be lost and the National Command Span limitation will be restored to its initial value.

7.2 SETTING PRIORITIES: To alter the list, enter the number of the option to be changed. This will toggle the selection from yes to no or no to yes. For the "Fuel Reserve" and "Tempo Of Operations" options, after selecting the option, you will have to enter a number within the indicated range, with higher numbers indicating decreased priority. The effect of your ranking of the various priorities is as follows:

7.21 Japanese:

- *Conserve Strategic Fuel Reserve.* In this game the entire Japanese Navy and fuel stores are made available for use, but if the heavy use of fuel does not result in decisive results, the penalty in victory points will be extreme. When this priority is rated last, there will be no restriction on supply use and naval and army activity can be expected to be maximized. If rated first, only minimal and absolutely essential activity will take place. In between ratings will give proportionate results. The stockpile will be augmented at a rate of 20,000 tons per turn.

- *Favour Army Operations / Favour Naval Operations.* The Army and Navy had different methods for reducing enemy ports and bases. The Army preferred to land substantial numbers of troops on or near the objective and defeat the enemy in a conventional direct assault. Navy participation was confined to ferrying the troops and providing shore bombardment and air cover. This had the advantage of being quick and easy, and put relatively few key assets at risk or burned much fuel. Prior to August 1942, it was also invariably successful.

The Navy preferred to obtain command of the sea first. Thereafter, the enemy garrison, being unable to resupply, would quickly crumble under repeated air attacks. After a suitable interval, a small contingent of troops (preferably the Navy's own SNLF marines) could be brought in to mop up. The big advantage was that minimal cooperation was required from the Army. It also tended to generate spectacular naval battles which the Navy was confident of winning. The Navy was very much the junior political partner in the wartime coalition, and sought every means possible to increase its standing vis a vis the Army.

When Army Operations are rated above Navy Operations, the Army doctrine will be pursued. Troops will be ferried to trouble spots and make strenuous attacks. Heavy naval units, if available, will bombard (be on strike missions) and air attacks will be heavy. If Navy Operations are rated higher, ferrying will be minimal and command of the sea (using superiority missions) will be sought. It does not matter whether the Operations are ranked high or low, just where they stand in relation to each other.

- *Support Naval HQ Plans / Support Army HQ Plans.* The seventeen named map locations are ranked in order of priority of capture from the perspective of the Navy and from the perspective of the Army. The practical difference here is that the Navy wanted to work down the Solomons to the New Hebrides before tackling New Guinea and Australia, whereas the Army did not. If the Naval Plans are ranked in priority to the Army Plans then the naval objective list will be used, otherwise the Army list will be used. The allocation of assets and the direction of any attacks may be expected to conform to the objective list. It does not matter whether the Operations are ranked high or low, just where they stand in relation to each other.

7.22 American:

- *Increase Tempo of Operations.* Fuel for the Americans was no particular bottleneck. They never had quite as much as they wanted, but they always had what they needed. The American fuel stockpile will be augmented by 40,000 tons at Noumea and by 10,000 tons at Brisbane per turn.

By far the greatest limitation on American activities was the understandably under trained state of their forces. In contrast to the Japanese who at that time were probably at the very pinnacle of their training, experience and professionalism on air, land and sea, the American forces as a whole were woefully green and unprepared.

The more highly ranked the tempo of operations priority is, the more combat missions will be generated and the more actively the American forces will try to fulfil the operational objective of Watchtower. A lower ranking will allow tired units to rest and uncommitted units to train. The armed forces of the United States truly excelled in the ability to absorb combat lessons rapidly and even over a 28 week period, a significant increase in professionalism will be seen if the tempo of operations allows. Unit skill will increase, combat effectiveness will be increased and the rate of loss (viz "unnecessary losses" in the Intelligence report) will be reduced.

- *Favour Army Operations / Favour Naval Operations.* Identical in effect to the Japanese equivalents. The relative ranking of these two priorities determines which operational doctrine is used.

- *Support South Pacific HQ Plans / Support South West Pacific HQ Plans.* Identical in effect to the Japanese equivalents. Under Admirals Ghormely and Halsey the South Pacific HQ wanted very much to avoid slogging through the swamps and mountains of New Guinea. In contrast, General MacArthur (SW Pac HQ) saw no reason to look for trouble in the Solomons when the Japanese were already on his doorstep. The relative ranking of these two priorities determines whose objective list is used.

8.0 OPERATIONAL PLANNING:

8.1 GENERAL: Selecting this phase will bring up a listing of all groups in the Results Box. To the right of the group name is the most common type of mission ordered & average intensity, day or night restrictions, the mission abort loss threshold, the destination or target of the mission, and the radius of action about the target zone. The arrow keys move up & down to select a group and left & right to above noted operational orders. The Dialog Box contains prompts for options available at a

given cursor position. In the first field (that of the group name), the player has the option to show the units belonging to each group, or a location report showing supply status and naval / air capacity of all friendly locations. In all other fields the player may modify the value by using the arrow keys to select item and then following the specific prompts in the Selection Box.

8.2 GROUP OPTIONS:

8.21 VIEWING SUBORDINATED UNITS:

This option will allow the player to see all of the Units that are attached to the Group that he has selected by indicating the group with the arrow keys and hitting enter / return. The Unit name, serviceable strength out of total steps, location, mission & intensity levels, day/night restriction, and zone of operation are shown. For asset pools, the zone of operation field is replaced by the owning parent Group. For the Strategic Reserve, the mission, intensity and zone of operation fields are replaced by the cost to buy, the cost to use and the cost to lose each step of the unit. Between the Results Box and the Dialog Box is supplementary information on the particular unit highlighted: total sorties, weapon type, skill, morale, and % serviceable ratings. The number of total sorties is the combined number of individual missions that may be performed by all of the steps of the unit given the type, intensity, serviceability of that unit. Units shown in dimmed text are available for use now, but historically were not actually used at this time.

This display allows the player to browse and see just where his strength lies, and to what purpose it has been committed. He can also give some Unit specific orders if he so chooses as per the National Command Span Limitations below.

8.22 RENAMING THE GROUP: The player is free to rechristen any group with a new name of up to sixteen characters in length.

8.23 VIEWING LOCATION REPORTS: The status of friendly named locations may be seen in this report. The first page summarizes the supply situation with respect to tons of supply on hand, the current demand from units stationed there, and maximum possible demand if all such units were given maximum activity orders. This allows the player to judge how his outposts are faring and to plan for timely resupply missions. The second page shows the used and maximum port capacity, used and maximum air base capacity, and whether or not enemy ground units are in the same hex contesting ownership of the named location. Air units are prevented from flying into an air base already at or past capacity unless they are carrier air groups fleeing a sinking carrier.

8.24 CHANGING GROUP ORDERS: Possible group orders are listed below. They may be altered by highlighting the subject group's mission with the arrow keys and entering "C"change.

8.241 THE GROUP MISSION: Missions have as their objective the specified Zone of Operations as defined by the operations hex and radius of action. Front line groups may perform any one of the missions described as follows:

- **STRIKE (STR):** Attack enemy port and base installations within the Zone. Any enemy units encountered will also be fought, but at something of a handicap due to the weapons mix carried (bombs for aircraft and non-armor piercing shells for naval vessels). The base and port capacity of the location will be reduced in proportion to the weight of the strike. A similar proportion of stockpiled

supply will go up in flames. A night strike will catch any air units based there on the ground and cause them some degree of loss. The radius of action for a strike mission is always zero, ie. it only hits installations in the particular hex targeted.

- **PATROL (PAT):** Attack only those enemy units which operate within the zone of operations. Groups on patrol tend to avoid other groups on patrol, but will be drawn into a general engagement if one starts. The radius of action for a submarine patrol is two, for air units it is the unused portion of their combat range, for ground and naval transport missions it is zero, and for naval units is one.

- **SUPERIORITY (SUP):** Aggressively attack all enemy units (but not enemy installations) encountered within the Zone of Operations. The radius of action on superiority is the same as in patrol, except that naval groups on superiority have a radius of two.

- **TRANSPORT (TRN):** Move supply and any attached ground units to the specified destination. Only naval units may receive transport orders. Cargo is unloaded at the destination automatically. Each naval asset is rated for cargo capacity per step measured in steps of 100 men or 800 tons of supply. Participating naval units without cargo capacity function as close escorts. The radius of action for a transport mission is zero.

Infantry and Marine units may be moved by cargo carrying ships which have active transport orders. Such ground units must first be transferred from their original group to a group containing active naval transports that will depart or arrive at the location of the ground unit. The ground units themselves need not have transport orders, they will simply be relocated (subject to lift capacity) when the transport group mission is resolved successfully. If any transports are lost en route, a prorated share of each ground unit will also be lost. If the transport mission aborts, the ground units will be returned to their starting location. Either way, the group affiliation of the ground units will revert to the original once the transport mission is over.

Example: the American 8th Marine Regiment at Noumea starts as part of the 14th US Corps. It is given superiority 3 orders and is transferred to Task Force 62 which has transports and APDs running from Noumea to Guadalcanal that turn. 10% of the lift capacity of those ships is lost to the Japanese but the transport mission is otherwise successful, and so 8th Marine Regiment lands on Guadalcanal at 90% strength and reverts to 14th US Corps ownership. Later in that same combat resolution cycle 14th US Corps will be able to use the 8th Marine Regiment's superiority sorties to attack the Japanese located on Guadalcanal.

- **RESERVE (RES):** Such groups have no subordinate units, but may be made active by the transfer to them of units. See rule 8.31.

8.242 CHANGING THE GROUP INTENSITY: Intensity of effort determines the number of sorties that are generated for the turn. Intensity has five degrees: 4. Maximum; 3. Determined; 2. Sustainable; 1. Harassing; and 0. Inactive. Units that are inactive generate no sorties at all. The intensity for each unit is indicated on displays by the number of ">" symbols for that unit. Note that higher levels of Intensity of effort adversely effect unit morale and serviceability. Units that are inactive recover morale and serviceability more rapidly than otherwise.

- **NAVAL UNITS:** The sortie rate is defined to be the number of round trips

generated during the turn. For example, an intensity of three means three missions from the starting location to the zone of operations and back again for the current turn. For units that are less than 100% serviceable, the number of sorties generated will be proportionately less.

- **GROUND UNITS:** The rate of sorties represents the overall intensity of supply use rather than any actual number of patrols made.

- **AIR UNITS:** The rate of sorties determines the maximum daily rate of aircraft sorties: 1 per aircraft per day at maximum, .7 at determined, .4 at sustainable, and .2 at harassing. The actual number of sorties flown will depend on unit serviceability rates and the state of the weather.

8.243 DAY/NIGHT RESTRICTIONS: Air and carrier groups are restricted to daylight operations. By default, all other groups operate around the clock but non-carrier naval groups may be voluntarily restricted to day or night only operations. The advantage is that day only and night only groups will not come into conflict with each other so that, for example, a Japanese resupply run into Guadalcanal made at night would have nothing to fear from any American air units based there.

8.244 GROUP ABORT LOSS THRESHOLD: When the percent losses suffered by a group (weighted on the basis of damage capacity) exceed this cutoff value, the group will seek to disengage and return home. It will not participate in any further actions during combat resolution. A low cutoff value will greatly increase the chance of a mission abort but will tend to preserve the group's strength for another battle. A high cutoff value will cause the group to persevere with great determination towards it's objective, but at a potentially ruinous cost if effectively opposed. The player must decide in advance how determined he wants his groups to be and set this level accordingly.

8.245 THE ZONE OF OPERATIONS: A zone of operations must be designated for every group. This can be any hex on the map that is within range of at least one unit in the group. The computer staff will then make this hex the zone of operations for all of the group's subordinated units which have adequate range. By default, units with inadequate range will be given alternative orders to patrol their base zone, but these unit orders may be manually overridden later subject to Command Span Limitations.

8.246 THE RADIUS OF ACTION: When a zone of operations is chosen, the computer will calculate the maximum permitted radius of action about that hex given the composition of the group and the mission assigned. By default, the radius used is the maximum radius, but the player may elect to reduce this value should he so choose. The display shows the Current Radius / the Maximum radius.

8.3 UNIT OPTIONS: These options are available for units of a group after having selected that group.

8.31 TRANSFER TO ANOTHER GROUP: Ownership of the Unit may be transferred to another Group. This does not physically relocate the unit (which is done using the Transfer mission at intensity four), it just changes its superior group.

8.32 SPLITTING A UNIT: A unit of more than one step may be broken down into two units. Each new unit must have a minimum of one step. The owning player will name the new unit with a name up to eleven characters

long. There is an absolute maximum of 140 units total for each player at any one time, which may restrict this ability.

8.33 MERGING TWO UNITS: This allows merging two Units to become one unit. The units must be of identical weapon type and location.

8.34 CHANGING UNIT ORDERS: Possible unit orders are listed below. They may be altered by highlighting the subject unit's mission with the arrow keys and entering "C" hange.

8.341 UNIT MISSION, INTENSITY & DAY/NIGHT RESTRICTION: Normally these values parallel to the extent possible those of the parent group but they may be recast manually subject to Command Span Limitations. There are two new missions possible:

- **ESCORT:** Only surface naval units in carrier or transport groups may be given this mission. Escorting combat units fight at normal effectiveness when attacking, but will not seek out opposing forces. Note that certain naval combat units also have a limited cargo capacity. When such a unit is assigned to a group having transport orders, it will haul cargo if it is given a transport mission, or not haul cargo if given an 'escort' mission.

- **RELOCATION:** Air and Naval units that are given transport missions with an intensity of four are treated as a special case. This instructs the computer to move the unit to another hex which may be at up to 2.5 times the normal combat range of the unit. The word "Relocate" will replace the usual mission and intensity identifier in the third field, and the player should move to the fourth field to enter a new destination if the desired one is not already shown. Air units given relocate orders will move immediately (at the cost of 1/2 their serviceability) and may be given another order forthwith subject to CSL constraints. Naval units make their relocation move during combat resolution.

8.342 THE UNIT ZONE OF OPERATIONS: Any alternative on-map hex within the range of the unit may be selected here. Infantry units have a range of zero and may only attack enemy units in the same hex as themselves.

8.345 VIEWING UNIT STATISTICS: The values at current serviceability rates for range, search strength, firepower, damage capacity, cargo capacity, etc. are shown in a pop up window so that the player may familiarize himself with the (nominal) capabilities of a particular unit. When there is more than one step per unit, the values are aggregates where necessary. The supply use value is also a function of intensity and the range to the current target zone.

As a general proposition, a unit's ability to hit its target is a function of attacker 'tactical reach' and defender 'evasiveness'. In the event of a hit, the amount of damage caused is a function of attacker firepower (as per defender's type) and defender 'damage capacity'. High values in every category are better than low values. For general reference, a chart summarizing value ranges for the different types of units is reproduced on the back of the map.

8.4 NATIONAL COMMAND SPAN LIMITATIONS: Due to the orientation of the viewpoint of the game, it is unrealistic for players to be able to alter individual Unit orders without reasonable limit. However, the theatre commanders did, on occasion, make direct requirements of their staffs for particular units. Accordingly, a number of Unit orders can be changed by the player directly. within the following staff work limits:

JAPANESE - Air: 4 units; Naval: 18 units; Land: 4 units.

ALLIED - Air: 5 units; Naval: 12 units; Land: 6 units.

These values are known as the Command Span Limitation, and the remaining allowance of changes is shown during the Unit Menu in the Dialog Box as "(CSL =)". The CSL allowances are reset to their original values when the Theatre Priorities are recalculated. If a player wishes to reset his forces to the way they were before he made any individual changes, he need merely reprocess the Theatre Priorities in their original ranking. All unit transfers and order changes will be unwound and the full CSL allowances restored.

- **FOR GROUPS:** Three CSL points are used each time a Group mission, intensity, and/or day/night restriction is altered (regardless of the number of subordinated units affected).

- **FOR UNITS:** One CSL point is used each time an individual Unit mission, intensity, day/night restriction and/or operations zone value is altered. It also costs one CSL point to buy or sell a unit into the Strategic Pool. Alterations of Group abort levels, operations zones and radii of action, as well as unit splits, merges and transfers between front line groups, may be made for free.

8.5 SUPPLY CONSIDERATIONS:

8.51 INCOMING: The Japanese receive 60,000 tons of supply each turn at Truk while the Allies receive 80,000 tons at Noumea and 20,000 at Brisbane. Supply will transfer between Truk and Rabaul & between Noumea and Brisbane automatically during Housekeeping in a manner prorated for the requirements of each base.

8.52 LOW LEVEL RESUPPLY: Each side had large numbers of small craft that were used to move tiny amounts of supply. These are not explicitly represented, so a 'creeping resupply' of about 1000 tons per turn is given to each friendly uncontested base during housekeeping at the expense of Rabaul and Noumea.

8.53 DRAWDOWN: Supplies on hand are recalculated as units are assigned missions. If the supply on hand at the base will be exceeded, the order will stand but the player will be informed of the short supply condition. If the orders are not then altered, all unit activity from that base will be scaled back proportionately.

9.0 GAME UTILITIES:

9.1 SAVE/LOAD GAME: The current game may be saved to any available drive and/or subdirectory with adequate free space. The game may be saved under any valid operating system file name and will have ".gs" appended. A previously saved game may be loaded from any available drive and/or subdirectory.

9.2 PLAY GAME FOR X TURNS WITHOUT INTERVENTION: The game can be set to play a specified number of turns into the future on 'automatic pilot'. This setting takes effect at the conclusion of the current player turn. The automatic pilot can be interrupted prematurely by any key press, with control returning to the player at the beginning of the next game turn.

9.3 QUIT AND EXIT GAME NOW: This returns the computer to its operating system without saving the game. If all fourteen turns have been played, or if sudden death has been triggered, one player will be declared the victor. This is determined on a balance of Victory Points. A decisive victory is better than a substantive victory, which in turn is better than a marginal victory. Victory levels

are calculated on the difference in the aggregate Victory Point totals: A difference of less than 5,000 is a draw, of 5,000 to 15,000 is a marginal victory, of 15,001 to 25,000 is a substantive victory, of 25,001 or more is a decisive victory.

9.4 CHANGE PLAYER PARAMETERS: Either side can be set to use exclusively human, computer assisted, exclusively computer, human historical, or computer historical Theatre Priorities on a turn by turn basis. The historical options parallel actual strategies but not necessarily actual results. The human option allows the player to set the priorities as he sees fit, and they will be carried forward unchanged from turn to turn. The computer option allows the computer to make a selection of what priorities may appear best at the time.

9.5 ALTER WEAPONS ACCURACY LEVELS: The accuracy of each class of weapon may be individually modified. The historical rating for each is 100. A setting of 200 doubles accuracy and a setting of 50 halves it. Note that a change of setting does not affect the killing power of the weapon, just the chance it has of hitting a target. These ratings may be changed to handicap one side if desired.

9.6 SET 'FOG OF WAR' LEVELS: There are two types of fog: 1. Inaccuracies relating to the initial intelligence force estimate for each of the six spotting areas, and 2. Inaccuracies in the summaries of losses for the previous turn's activities. The higher the level of uncertainty shown in this screen, the less accurate these reports will be, and the more difficult the play of the game. Minimum values are 1% and maximum values are 99%.

9.7 ADJUST SCREEN COLORS: On computer systems allowing this, the player may use this routine to set the screen colors to personal choices for normal foreground and background, inverse foreground and background, highlighted foreground, and dimmed foreground. Changes are saved to disk and automatically used the next time the game is run.

9.8 ADJUST SCREEN DISPLAY SPEED: Most messages appearing in the Results Box are delayed a variable multiple of a fraction of a second for readability. This option sets the multiplier. A multiplier of zero permits the fastest game play but may make many messages unreadable, particularly on fast processor computers such as turbo 286, 386 and 486 systems. Just adjust the value to find a speed that suits you for your machine. The maximum multiplier allowed is 99.

9.9 TOGGLE SOUND ON/BEEP/OFF: The game generates various beeps and buzzes during execution. Both may be toggled on, or beeps only, or neither if the player desires.

10.0 COMBAT RESOLUTION: Generally speaking, the player that is most active (ie. plans to use the most supply for the turn) has the initiative and proceeds first. The actual resolution of combat is performed almost entirely by the computer as it fulfils the dictates of the player.

10.1 GENERAL ENGAGEMENTS: During combat resolution each group is examined in turn and each group with a strike, superiority or transport order is made a 'lead group' in a general engagement. Intervening enemy groups and friendly supporting groups are identified on the basis of composition, mission, day/night restriction and zone of operations. Individual units that have orders different from that of their owning group are also checked to see if they will participate. Once all of the

participating groups have been identified, opposing groups are paired up and tactical search strengths are tallied to see if one or the other achieves tactical surprise. After this determination, individual duels between subordinated units occur and the results are reported. As long as a group's morale holds out and it otherwise qualifies, it may be pulled into a general engagement in support of, or in opposition to, each new lead group found during combat resolution.

10.2 VOLUNTARY MISSION ABORTS: Once the morale of a friendly lead group has been broken in combat, the owning player will be offered the choice to voluntarily abort the missions of subsequent friendly lead groups. A voluntary abort cost 1,500 prestige VPs, but is offered as a way to cut short a strategy that has gone awry. If, for example, the carrier group covering a major transport of supply is shattered and numerous enemy units remain to contest the run, the owning player might be well advised to take the VP loss and try the convoy again at a later time.

10.3 CAPTURING A NAMED LOCATION: When all of the ground units at a named location belong to the enemy player, that location changes hands and the port and base facilities (if any) become available to the new owner. One half of the existing supply stocks are assumed to survive the process and also become available to the new owner. Resident air units are relocated to the nearest available air base regardless of upkeep considerations. Resident naval units are relocated to Noumea or Rabaul, as appropriate, and all resident units suffer a 50% reduction in serviceability as a consequence of their forced flight. Given the significance of the event, a special bonus of 10,000 'prestige' VPs is awarded for each and every capture of a named location.

11.0 HOUSEKEEPING: After the resolution of all combat, the status of each unit is updated for losses, wear and tear, repairs and replacements. Stocks of supply are reduced by the amount consumed on operations by combat units and by base personnel at named locations. Skill levels increase with experience, but there is a small chance of a 5% decrease due to the transfer out of key personnel. Morale will recover somewhat if previously battered down to low levels. Units that become unusable due to losses, damage or ruined morale will be sold back to the Strategic Pool to recover out of harms way. There is a chance each turn - proportional to the amount of supply on hand - that the air and naval capacity of each base will increase. Small resupply missions are plotted to bases running low on supply. Combat summaries and Official Communiques are generated.

Each turn the Japanese player will receive the following replacement steps to rebuild depleted units: 6 carrier aircraft, 17 ground based aircraft, 1 SNLF platoon, 2 army infantry platoons, 1 destroyer per turn prior to turn 10 and 2 destroyers thereafter, and 1 transport each turn after turn 6. The American player will receive: 9 carrier aircraft, 12 ground based aircraft, 6 B-17 Flying Fortress, 6 Marine platoons, 6 army infantry platoons, 3 Australian infantry platoons, 1 destroyer per turn prior to turn 5 and 2 destroyers thereafter, and 1 transport each turn after turn 4. Any corresponding and under strength active or pool unit is eligible for replacements. The most depleted units get priority. Unused replacements are stockpiled for future use. Eliminated units are not rebuilt. (The owning

player may, of course, recreate an eliminated unit by splitting another unit and naming it accordingly.)

12.0 VICTORY CONDITIONS: The object of the game is to win on points. Victory Points are awarded on the following scale:

12.1 THE DESTRUCTION OR DAMAGE OF ENEMY UNITS: Each step of each unit has a VP cost if destroyed. This can range from a high of 10,000 VPs for Japanese battleship Yamato to a low of 2 for a typical individual aircraft. Steps that are damaged but not destroyed result in the loss of one-half of the pro rata VPs. For example, if the Yamato received 40% damage, the American player would immediately receive one-half of 40% of 10,000 or 2,000 VPs.

12.2 PRESTIGE CONSIDERATIONS: Having ones troops starve in the field is humiliating. Infantry and marine units that get less than 25% of their immediate supply requirements (as judged at the beginning of each Combat Resolution Phase) cost their owner five victory points per step. On the positive side, every time that a group voluntarily aborts a mission the other player is awarded 1,500 VPs, and the capture of a base results in the award of 10,000 VPs to the victor.

12.4 BUYING JAPANESE FUEL: The Americans get their supplies for free. The Japanese must pay one VP for every 40 tons drawn down in operations.

12.5 BUYING STRATEGIC POOL UNITS: The cost of buying additional combat units from the strategic pool is assessed in VPs. The cost per step is shown in the Strategic Pool display in the Operations menu. Units sold back to the Strategic Pool result in a refund of one-half of the VP purchase price. No units may be voluntarily sold back to the Pool in the last two turns of the game.

12.6 SUDDEN DEATH: The bases of Rabaul or Noumea were of such paramount importance that their loss would signal the immediate decisive conclusion of the campaign. Accordingly, if either are captured the game ends immediately.

13.0 DESIGNER NOTES: Do not lose your transports! They are expensive, scarce, and have very few replacements. Without them you cannot maintain your forces and you will be doomed to suffer horribly. The whole game can turn on the slaughter of an unsuspecting convoy. Do not be reluctant to abort a convoy if the odds look bad.

Aircraft carriers are very fragile. No matter how many escorts they seem to have, they can get crippled or worse on very short notice. Do not use them just because they happen to be available, but rather make them a part of an operation that will give decisive results if successful. If the operation is not that important, consider leaving the carriers in port. Convoy protection is probably the single most important mission they can be used for. Mass the carriers in a naval group *not* containing the transports and use them to attempt to clear the way before the convoy sails.

Mission % Loss Abort Levels should be set with some care. Too low a level will result in the group turning back after suffering only cosmetic damage. Too high a level will cause it to carry on long past any worthwhile point. As a general proposition, they should be set quite low (10 to 25%) on the basis that 'he who runs away, lives to fight another day'.

Experience will show when high levels are appropriate.

When transporting infantry units by sea, take the time to calculate how much lift capacity is required (equal to total number of steps operational or otherwise of moving infantry units) and make sure that the transports have adequate intensity to move them. Transports can move five steps per sortie, APDs one step per sortie, and seaplane tenders two or three depending on the ship. Unless a ground unit can be lifted in its entirety it will not be lifted at all, but you could split off a part that would be small enough to lift. Excess lift capacity automatically hauls supply.

Battleships carry a powerful punch when sent on strike against bases. Not only do they destroy supply and local aircraft (if a night strike), but they can cause a significant loss of readiness to the local infantry units as well. This can be very helpful to a friendly ground assault timed for the same turn. Air strikes are also useful for the same reason, but they lack the same devastating effect.

Remember that the loss of either Noumea or Rabaul immediately ends the game. Always garrison your base with at least one good ground unit and one good air unit to prevent an embarrassing sneak transport by an enemy two or three step infantry unit.

American carrier air groups have a combat range of one and Japanese carrier air groups have a range of two. If two such groups come into contact at a range of one hexes or less, the ships in both groups will be at risk to enemy air strikes. If the groups are two hexes apart, only the American ships will be at risk. At a range of three or four, the air groups will mix it up, but all ships will be out of range.

Putting this game together has been quite an experience. The original intent of making minor modifications to the MALTA STORM system proved untenable and the result was a completely new internal design that shares little with MALTA STORM other than the player interface, and even that was reworked in a number of areas. However we do intend to release a second game on this system, PACIFIC STORM: THE MIDWAY CAMPAIGN. Work on it already underway. And we may do a third game to cover the Philippines Campaign as well. Until they arrive, we hope you enjoy THE SOLOMONS CAMPAIGN.

R.C. Crandall & S.M. Newberg.

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In addition to occasional program errors, the disk itself may be bad. We experience the industry standard 5% failure rate in disk duplication. Before assuming your disk is defective, please check your disk drive. Over 90% of the disks returned to us as defective run on our equipment without problems, but our drives are regularly cleaned and serviced for speed & alignment. If yours has not been so serviced, that could very well be the problem. When we do receive a defective disk within the 30 day warranty period noted above, a free replacement disk will be sent out immediately. If you are out of warranty on a defective disk, you must send the service charge along with the original disk to receive a replacement.

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PACIFIC STORM: THE SOLOMONS CAMPAIGN *Operations In The South Pacific, 1942-1943.*

The US advance back into the Pacific went north to Midway and south to a previously obscure island called Guadalcanal. Midway was a fast victory. The fight for the Solomons was the hardest of the war. This operational naval, air, and land simulation concentrates on the command and control of an entire theatre of war, covering the campaign in 2 week turns. PS uses our new windowed user interface as well as the integrated combat concepts of our recent MALTA STORM to present a new simulation system that will be continued with games on the Midway campaign and the Phillipeans campaign.

SIMULATIONS CANADA COMPUTER GAMES:

BATTLE TANK: KURSK TO BERLIN, Grand Tactical Armoured Combat In The East, 1943-1945.

MAIN BATTLE TANK: NORTH GERMANY, Modern Grand Tactical Combat.

FLEET MED, Tactical Naval Combat In The Mediterranean, 1940-1943.

BATTLE TANK: BARBAROSSA TO STALINGRAD, Grand Tactical Armoured Combat In The East, 1941-1943.

MALTA STORM, The Battle For The Central Mediterranean, Dec. 1941 - Aug. 1942.

MAIN BATTLE TANK: CENTRAL GERMANY, Modern Grand Tactical Combat.

KRIEGSMARINE, Tactical Naval Combat In The Atlantic, 1939-1944.

NORTHERN FLEET, Modern Naval Operations In The North Atlantic.

GRAND FLEET, Tactical Naval Combat In The North Sea, 1906-1920.

ROMMEL AT EL ALAMEIN, The Battles For Egypt, 1 July - 6 Nov, 1942.

IN HARM'S WAY, Tactical Naval Combat In The Pacific, 1943-1944.

MOSCOW CAMPAIGN, Typhoon & White Storm, 30 Sept 1941 - 13 Feb 1942.

LONG LANCE, Tactical Naval Combat In The Pacific, 1942.

TO THE RHINE, The Allied Advance In The West, 29 Aug - 14 Dec, 1944.

ROMMEL AT GAZALA, The Battles For Tobruk, 26 May - 27 June, 1942.

STALINGRAD CAMPAIGN, The Turning Point In Russia, Jun 1942 - Feb 1943.

KURSK CAMPAIGN, Operation Zitadelle, Summer, 1943.

OPERATION OVERLORD, The Invasion Of Europe, 6 June - 28 August 1944.

SEVENTH FLEET, Modern Naval Combat In The Pacific Ocean.

GOLAN FRONT, The 1973 Arab/Israeli War In The North.

BATTLE OF THE ATLANTIC, The Ocean Lifeline, 1940-1944.

SIEG IN AFRIKA, The War In North Africa, 1940-1943.

FIFTH ESKADRA, Modern Naval Combat In The Mediterranean Sea.

FALL GELB, The Fall Of France, Spring 1940.

GREY SEAS, GREY SKIES, Tactical Modern Naval Combat.

NOTE PLEASE: Although most of our games are available for all major personal computer systems, in a number of the above titles the versions for the 16 bit computers (Amiga, Atari ST, IBMPC, & MacIntosh) are considerably more sophisticated and realistic simulations than the versions for the 8 bit computers (Apple II and C64/128), due to the greatly expanded capabilities of the larger systems.