**Carrier Clashes**

1. <u>Introduction</u>. The Second World War saw the first and last clashes between aircraft carriers. From 1942 through 1944, USN and IJN carriers battled for naval supremacy in the Pacific. "Carrier Clashes" is a game that simulates the climactic carrier battles of 1942.

2. <u>Scale</u>. Each turn in the game represents 12 hours of real time. Each hex represents an area 60 nautical miles across. A movement allowance of 1 hex per turn equates to an average rate of advance of 5 knots.

3. <u>Playing Surface</u>. The game is played on a hex grid. The hexes regulate movement and distance measurement. A large version of the hex grid is used to track the location and movement of TFs and submarines. Each player receives a smaller version of the grid that can be used to plan movements and searches. The hex grid used for the game typically measures 20 hexes by 30 hexes.

4. <u>Counters, Cards and Blocks</u>. In this game, counters, colored wooden blocks, and playing cards are used to represent each player's forces.

    a. Blocks are used to represent a group of submarines or a group of ships. A group of ships is called a "task force," or "TF." One large side of each block is blank. The other large side carries a sticker identifying the submarines or task force represented by the block. In general, players place their blocks on the playing area so that the stickers are hidden from the opposing player.

    b. Each submarine group is represented by a single block. Each TF is represented by 2 blocks: 1 on the playing surface and 1 with the cards and counters representing the units in the TF. Each block has a sticker on 1 side with a colored band indicating the side owning the unit, a unit name, and a series of numbers. See the explanation of the numbers below.

    c. Blank colored blocks can be bought from Columbia Games, on the Web at http://www.columbiagames.com. Columbia Games is not affiliated with this game in any way.

    d. Ship units, air units, and bases are represented by counters. Each counter represents 1 large ship, 2 smaller ships, or from 6 to 9 aircraft. Each counter contains a series of numeric values associated with the unit it represents.

        i. Ship counters show the following information:

            1. In the central band, the name of the ship or, if the counter represents 2 ships, the name of the class of ships in the unit and a numerical designation,

            2. In the upper left corner, the surface attack strength of the unit,

            3. In the upper middle position, the antiaircraft value of the unit,

            4. In the upper right position, a second surface attack strength if the unit has one, or for aircraft carriers the air unit capacity of the carrier,

            5. In the lower left corner, the defense strength of the unit,

            6. In the lower middle position, the endurance in turns for destroyer units, the search values for ships capable of conducting air searches, the radar value for other ships (if any), or the transport capacity of transports,

            7. In the lower left position, the speed of the unit and the playing card suit used to represents it.

        ii. Air unit counters show the following information:

1. In the central band, the type of aircraft represented,
2. In the upper left corner, the attack strength of the unit,
3. In the upper middle position, the base or carrier at which the unit is usually based and (for units able to operate from carriers) the size of the unit for purposes of carrier capacity,
4. In the upper right position, a second attack strength (if the unit has one),
5. In the lower left corner, the defense strength of the unit,
6. In the lower middle position, the search values of the unit if it is capable of searching,
7. In the lower right position, the range of the unit.
8. Where an air unit counter shows more than 1 range or defense strength (separated by a dash), the first is used with the first attack strength and the second is used with the second attack strength.

iii. Base counters show the name of the base in its central band, its antiaircraft strength in the upper middle box, its attack strength against ships in the upper left corner, the designation "L" (signifying a land base) in the lower left corner, and the search value of the base in the lower center position. If the base counter has an "R" in the lower right hand corner, it may refuel ships.

1. Air units located at a base are placed under the base counter.
2. If the air units are on strike or CAP, they are placed on top of the base counter and covered with a CAP or numbered STRIKE counter.

e. Four decks of playing cards are needed, with jokers. These are used to provide search results for the opposing player, as described below.

f. When the rules refer to a player selecting a card "blindly," it means that the card is selected using the following process.

i. The player owning the pile of cards from which the card is to be selected shuffles the pile and deals the card (or cards) face down out of sight of the searching player.

ii. The owning player then hands the card or cards face down to the searching player.

iii. The searching player examines each card without showing it to the owning player.

iv. The owning player returns the card or cards to the pile and reshuffles the pile.

5. Scenarios. The game rules are a framework for playing battles. Individual games are based on scenarios that describe the forces on each side, the starting positions of the forces, the length of the game, how the game is won, and any special rules that apply to the scenario.

6. Initiative Levels. Scenarios for the game assign each side an initiative level. A side's initiative level has an effect on when a side moves and performs other actions and how effectively the side spots.

7. Task Forces. Ships are organized into "task forces," abbreviated in these rules as "TF." Scenario rules will typically place limits on the number of TFs that a player may form. Ships in a TF move and fight together. Ships in a TF may leave it in the TF phase of any turn by forming 1 or more additional TFs or by joining another TF in the same hex. Unit counters and ship cards for a TF are placed with the block corresponding to their TF, out of sight of the opposing player. A TF may consist of 1 ship. No more than 20 ships may be in a single TF. Note that any ship counter with a number in the name of the counter consists of 2 ships.

8. <u>Search Cards</u>.  Once players have organized their ships into TFs, they place playing cards with each TF representing the ships in the TF.  These playing cards will be dealt to the opposing player when the TFs are spotted.   Players use these cards to represent the number and types of ships in a TF.  Each player uses 2 decks.

   a. Heart cards represent aircraft carriers, with the number on the card signifying the number of the carriers in the TF.  Jacks signify 1 ship, queens 2 ships and kings 3 ships for this purpose.

   b. Club cards jack through king represent battleships and battlecruisers (signified by "h♣" on the ship unit counter) with jacks counting as 1 ship, queens as 2 ships and kings as 3 ships.

   c. Club cards ace through 10 represent transports and similarly sized auxiliaries (signified by "l♣" on the ship unit counter).

   d. Spade cards represent cruisers.  Jacks signify 1 ship, queens 2 ships and kings 3 ships for this purpose.

   e. Diamond cards represent destroyer units and similarly sized ship units.  Jacks signify 1 unit, queens 2 units and kings 3 units for this purpose.

   f. Heart card sevens through tens are used to indicate that the TF in which they are placed contains dummy ships.  See the rules on dummy ships for an explanation of this.

   g. Some ships have 2 card suit symbols after their speed rating.  These ships may be represented by a card of either suit, at the owning player's option.

   h. Players may use more than one card to represent a single type of ships in a TF.  For example, if a player had a TF with 4 destroyer units in it the player could use a 4 of diamonds, two diamond deuces, an ace and a trey of diamonds,  two aces and two jacks, or any other combination of diamond cards adding up to 4 to represent the destroyer units.  A player is, however, constrained by the limits of two card decks when making up TF decks.

   i. Example: A player forms a TF of a carrier, 2 heavy cruisers, 1 destroyer leader, and 3 multi-ship destroyer units.  The player notes that the destroyer leader could be represented by a spade or a diamond card.  The player elects to use a jack of hearts, an ace of spades, a queen of spades, an ace of diamonds and a deuce of diamonds to represent the TF.

   j. Players must remember to adjust these cards when they reorganize TFs or TFs take ship losses.  Players may not adjust these cards except as needed to reflect losses, TF reorganizations, or the removal of dummy ships,  or to "make change" when forced to do so by the limits of the card deck.

9. <u>Air Units</u>.  Air units begin located at bases or carriers shown on their counters.

10. <u>Rounding Convention</u>.  The rules will at times call for attack strengths to be reduced.  The reductions are computed on the basis of total combined attack strengths, with any remaining fractions being dropped after strengths are combined.

11. <u>Blocks on the Playing Surface</u>.  The players place TF blocks and dummy blocks on the hex grid.  Until they are spotted, TF and dummy blocks are placed so that their stickers face the owning player and are hidden from the opposing player.

   a. Scenario rules say which player places blocks on the hex grid first and which player places blocks second.

   b. Unless scenario rules provide otherwise, both players place their submarine blocks on the hex grid before placing their TF blocks on the hex grid.

12. <u>Turn sequence</u>.  The game is played in turns.  Each turn consists of the following phases:

a.  Initiative phase.  Each player rolls D6 and adds his or her initiative level to the roll.  The side with the higher modified roll has initiative for the turn.  In case of a tie, the side with the highest initiative rating has initiative.  If the result is still a tie, roll again.  In performing each of the actions below, the player with initiative goes after the player without initiative.  *Suggestion: players may wish to record the result of initiative rolls on their Turn and Endurance Records.*

b.  First air strike phase.  Each side declares which of its air units will strike bases.  The target bases must be within 4 hexes of the bases or carriers launching the strikes.  Players allocate CAP to bases being struck.  (Day turns only, except by scenario special rule.)  Players may use the "STRUCK" counters provided with the game to keep track of units that struck in the first air phase.

c.  First search phase.  Each side determines which enemy ships are spotted by its forces.  (Day turns only, except by scenario special rule.)  Players allocate CAP to those TFs and bases that are claiming a CAP modifier to searches.

d.  Second air strike phase.  Each side declares which of its air units will strike ships in spotted TFs.  Air units that struck in the first air strike phase or searched in the first search phase may not strike in this phase.  The target ships or bases must be within 4 hexes of the bases or carriers launching the strikes. Players allocate CAP to TFs and bases that are being struck.  (Day turns only, except by scenario special rule.)

e.  First surface combat phase (day turns only).  During day turns, players declare whether TFs in the same hex with spotted enemy TFs will attempt to engage in surface combat.

    i.   The player without initiative makes these declarations, and the opposing player attempts to avoid combat if he or she elects.

    ii.  The player with initiative makes these declarations, and the opposing player attempts to avoid combat if he or she elects.

    iii. Surface combat is resolved.

f.  Movement phase.  Each side moves its forces, in 4 sub-phases.

    i.   Player without initiative moves spotted TFs.  The opposing player observes the moves.

    ii.  Player with initiative moves spotted TFs.  The opposing player observes the moves.

    iii. Player without initiative moves subs and unspotted TFs.  The opposing player does not observe the moves.

    iv.  Player with initiative moves subs and unspotted TFs.  The opposing player does not observe the moves.

    v.   For TFs that are unloading, note the VPs gained.

    vi.  TFs that are not moving and are at bases or refueling rendezvous may refuel.  Only USN ship units may refuel at refueling rendezvous during night turns.

g.  Second search phase. Conducted as the first search phase was conducted.  (Day turns only, except by scenario special rule.)

h.  Third air strike phase.  Each player declares which of its air units will strike bases and spotted ships. Air units that searched in the second search phase may not strike in this phase.   Players allocate CAP to bases and TFs being struck.  (Day turns only, except by scenario special rule.)

i.  Second surface combat phase (day and night turns).  Players declare whether ships in the same hex with spotted enemy TFs will attempt to engage in surface combat as in the first surface combat phase.

      j.    TF phase. Players flip successfully searched units back on edge, split TFs, form TFs, shift ships between TFs, and place dummy task force blocks on the map. Players should not observe each other when placing dummy TF blocks.

      k.    Turn record phase. The players mark off the turn on their Turn and Endurance Records.

13. <u>TF Movement</u>. TFs move from hex to adjoining hex across the playing surface. All ships in a TFs have a movement allowance. In any turn, a TF can move any number of hexes up to the movement allowance of the slowest ship in the TF.

      a.    In each movement sub-phase, the side without initiative moves before the side with initiative.

      b.    Ships may exit the playing surface only as specified in scenario special rules.

      c.    Carriers may not search or strike while located in an island hex. A carrier that moves through an island hex in a turn may not search in the second search phase or strike in the third strike phase.

14. <u>Weather</u>.

      a.    The map is divided into weather zones, each 10 hexes by 10 hexes. At the start of each initiative phase, roll D6 for each zone to determine the weather in that zone. The result affects each of the 100 hexes in the zone.

      b.    Unless scenario rules provide otherwise, the weather in all zones is clear at the start of a scenario.

      c.    Weather has effects on searching, strikes, and CAP, further explained in the rules below.

      d.    Players may use the weather counters provided with the game to mark the weather in each zone. When using the counters the weather is presumed to be clear unless marked otherwise.

15. <u>Searching</u>. In the search phase, each player tries to search the opposing player's TF blocks appearing on the playing surface.

      a.    Certain ships, bases and air units may spot opposing TFs. These units have a search range and a search arc indicated on their counters. The first search value number is the range to which the unit may search while the second is the degrees of arc that the unit can search in 10s of degrees. See the accompanying explanation of the search arcs.

      b.    The minimum search arc is 30 degrees for searches out to ranges of 4 hexes or more and 60 degrees for shorter ranged searches.

      c.    Ship and air units may combine their search arc values to search a broader arc, out the shortest search range of any of the combined units.

      d.    Where a search arc bisects a hex, the hex may be searched. However, where two adjoining search arcs bisect the same hex (one on one side and one on the other) the hex is only searched once.

      e.    A single hex can be searched more than once by different searching units in the same search phase. Each additional searching unit adds to the potential effectiveness of the search, but is not resolved as a separate search.

      f.    The side without initiative conducts its searches first, followed by the side with initiative. The searching side places blank counters for each unit searching in the hex. If more than unit is searching the same hex, the player places counters in the hex equal to the number of searches. *Suggestion: as an alternative to counters, players may use small dice to track the number of units searching in a hex, with the number of pips facing up showing the number of searches.*

      g.    For each search, the searching player determines the number of cards to be dealt for the search. If no cards are to be dealt, the search spots no TFs. The owning player flips the blocks of

successfully searched TFs face-up. The owning player then blindly deals the searching player the called-for number of ship cards from each TF that is successfully searched.

h.  In general, the searching player determines the number of ship cards to be dealt through the following process.

 i.  Roll D6 for all searches in the phase.

 ii.  Add or subtract modifiers for each search, as provided on the Search Modifier chart and by any scenario special rule.

 iii.  That result is the number of cards to be dealt, subject to iv. Below.

 iv.  The maximum number of cards that can be dealt for any 1 search of a TF is 4 plus the initiative value of the searching unit.

i.  Determine the number of cards to be dealt once for each search in a hex. The same result applies to all TFs in the hex being searched.

j.  Dummy TFs that are successfully searched are removed, unless they contain dummy ships. A TF is successfully searched if the searching player is entitled to see at least one ship card from the TF. *Suggestion: in some cases, searches will automatically be successful; in such cases players can simply remove dummy TFs (not containing dummy ships) rather than require a die roll.*

k.  Players should use a pad and pencil to record the results of searches. *Suggestion: a simple way to record search results is to note the number or letter of the task force searched and then record the classes of ships revealed using abbreviations. For example, "TF 15: JD, 2D, 2C, AH" would mean that TF 15 was searched and four cards drawn: two diamond cards indicating the presence of 3 destroyer units, 1 spade card indicating 2 cruisers, and 1 heart indicating an aircraft carrier.*

l.  Searching effects only last for the turn of the search. TFs are flipped back on their edges, hidden from the enemy player, in each TF phase.

m.  CAP and Searches. The Allied player may decrease the effectiveness of searches of Allied TFs or bases by declaring that the TF or base has CAP in the hex. Any TF containing an Allied carrier or radar-equipped base with at least 1 air unit having an F attack value automatically qualifies for this benefit. Other TFs and bases may receive this benefit under scenario rule. Where the benefit is available, the player must allocate at least one F attack unit to provide CAP to the base or TF in the search phase. Any unit allocated in this way also provides CAP to the base or unit in the following strike phase.

n.  Strike Aircraft Searching. Certain strike aircraft can be used either to search or to strike. A strike aircraft used to search may not strike in the immediately following strike phase. Aircraft used to strike may not search in the immediately following search phase. Players may use the "SEARCHED" and "STRUCK" counters provided with the game to track which strike aircraft have searched and struck.

o.  Armed Searches. Allied strike aircraft with P values used for searching may (but are not required to) attack each TF that they have spotted. They select their targets randomly from among the types of ship cards that they observed. For example, if their search revealed a heart card which they then elected to attack, the IJN player randomly selects 1 carrier in the searched TF to be attacked. If the searching aircraft attempt to attack a dummy ship, the dummy is discarded and the searching aircraft attacks again.

      i. To make the attack, roll D12. On a roll of 1, the ship or ships being attacked is damaged. On a 12, the searching aircraft unit is unavailable for the remainder of the turn. Roll in the search phase.

      ii. Example: a searching SBD unit locates an IJN TF. The USN player draws a jack of hearts, two club cards and a diamond, and, showing the IJN player the heart card, announces an attack on a carrier. The heart card is a dummy, and the TF contains no carriers. The IJN announces this to the USN player, who then announces an attack on a cruiser. The TF contains 4 cruisers. The IJN player selects 1 randomly for attack and reveals it to the USN player. The USN player then rolls D12 to determine the effect of the attack.

p. <u>Submarines</u>. A submarine block may automatically spot 1 TF in its hex. See the rules in the Submarine section for the mechanics and effects of these searches. Submarine searches are resolved before searches by aircraft.

16. <u>Air Strikes</u>. Each player simultaneously decides at the start of each air strike phase which of his or her air units will be part of air strikes. The non-initiative player declares and executes attacks before the player having initiative. The attacking player forms strikes and allocates attacking striking air units against any bases and spotted TFs in the hex being attacked.

a. The game provides a set of numbered strike counters, labeled "STRIKE 1," "STRIKE 2," etc.. The attacking player places striking units for each strike under a numbered strike counter designating the number of the strike, out of sight of the other player. The attacking player then places the numbered matching strike counter on TF or base being attacked. The player without initiative does this before the player with initiative.

b. The attacking player determines whether fighters accompanying a strike are escorting any torpedo-carrying strike aircraft in the strike. Torpedo bombers are those aircraft attacking with A attack factors. Fighters escorting torpedo bombers are stacked underneath those aircraft. Any fighters not stacked in this way are escorting the level bombers and dive bombers in the strike.

c. Scenario rules may give limits on the composition of strikes.

d. Strikes are assembled and allocated to targets before the precise content of the TFs being attacked is revealed.

e. If the weather in the hex of a TF being attacked is cloudy or stormy, there is a chance that a strike will fail to find the TF. Roll D6 for each strike attacking a TF in a cloudy or stormy hex.

      i. If the weather in the hex is stormy, the strike will fail to find its designated target TF on a roll of 3-6. If the strike fails to find its intended target, roll D6 once for each other enemy TF in the strike hex or any adjacent hex within range of the strike aircraft. On a roll of 1, the strike will strike 1 of the other TFs. It will strike the first TF (if any) for which a 1 is rolled.

      ii. If the weather in the hex is cloudy, the strike will fail to find its designated target on a roll of 5-6. If the strike fails to find its intended target, roll D6 for each other enemy TF in the strike hex or any adjacent hex within range of the strike aircraft. On a roll of 1-2, the strike will strike 1 of the other TFs. It will strike the first TF (if any) for which a 1 or 2 is rolled.

      iii. Ignore weather effects for TFs being attacked in a port.

f. Each player may allocate CAP to defend TFs and bases after the opposing player has determined the TFs and bases that the strikes are attacking. CAP is allocated before the composition of the strikes is revealed.

g. When allocating CAP, the owning player must indicate whether the CAP is high – able to intercepting dive bombers and level bombers – or low – able to of intercepting torpedo bombers. Low CAP fighters are stacked under the "LOW" counters provided with the game.

h. Players resolve air strikes in 3 segments.
   i. Resolve combat between striking units and CAP.
   ii. Resolve antiaircraft combat.
   iii. Strike aircraft attack ships and land targets.

i. <u>CAP Combat</u>. Compute the odds for defensive fighter combat by comparing the F attack strengths of CAP (combat air patrol) units defending a TF or base to the defensive strengths of attacking strike units.

   i. High CAP can only engage dive bombers, level bombers, and their escorts. Low CAP can only engage torpedo bombers and their escorts. Torpedo bombers are those aircraft attacking with A attack factors. If a strike includes (for example) both dive and torpedo bombers and the CAP has been allocated to both high and low groups, the CAP and the strike would fight two separate combats – one against the dive bombers and one against the torpedo bombers..

   ii. Roll against each strike unit at the odds computed for the combined all strengths of all CAP fighters versus the defense strengths all of striking units and escorting fighters being engaged. Round down to the nearest half odds. If the roll equals the twice the odds or less, the strike unit is shot down. Torpedo bombers are shot down before they attack. Half of all dive and level bomber losses are taken before the bombers attack, and half after. If an odd number of dive or level bomber units are shot down, the odd unit attacks at 1/2 strength before being lost (assuming that it survives AA fire). Losses are taken to escorting fighters after they attack the CAP.

   iii. If the CAP units have less than 1:1 odds against a strike, they can (at their option) attack less than all the striking units to achieve 1:1 or 1:2 odds. They must have attacked all escorting fighters (strike units with F strengths) before attacking any other strike units. With that limitation and any limitation imposed by their altitude, they may freely select the units that they attack.

   iv. Once CAP have attacked, any escorting fighters attack the CAP using the striking units' F factors versus the defending CAP units' defensive strengths, following the same process. Losses to escorting fighters are taken only after they attack. For rolls at or less than twice the odds, the CAP unit takes no further part in combat in that turn. For roles at or less than the odds, the CAP unit is shot down. The escorting fighters may elect to attack less than all of the CAP in order to achieve 1:2 or 1:1 odds.

   v. CAP units at a base or carrier can defend TFs and bases within its range. CAP operates at ½ F strength when defending a base or TF other than the one in which it is based, if the TF or base is within ½ of the CAP's range. If the CAP is operating at more than ½ of its range, it operates at ¼ F strength. CAP at a port operates at full strength when defending

against attacks on ships located in the port.  CAP always operates at full defensive strength.

vi. A CAP unit can only mount one series of attacks against aircraft units in a single strike. CAP units can only defend TFs or bases in 1 hex in a single strike phase.

vii. Once a CAP unit has fought, cover it with a "FOUGHT" counter.  If the owning player wishes to have the CAP unit fight again in the same air strike phase, he or she must roll 1 through 3 on D6 to bring the unit back into action.  A CAP unit with a "FOUGHT" marker may be checked for reengagement in this way as many times as subsequent strikes attack the TF or base that it is defending.  A CAP player may withhold CAP units from engaging a strike so as to avoid having to roll to have the units engage subsequent strikes.

viii. Example: a strike consisting of 2 A6M2 units, 1 D3A2 unit and 2 B5N2 units is attacking a TF defended by 3 units of F4F-4s.  One A6M2 escorts the D3A2 unit while the other escorts the B5N2s.  Two of the F4F-4 units are high and one is low.  The high F4F-4s have a combined F attack strength of 12 against a defensive strength of 4; the low F4F unit has a 6 against a strike defense of 5.  The high CAP attacks at odds of 12:4, or 3:1. The F4Fs roll against both the A6M2 and the D3A2, downing them on a D12 roll of 1 through 6.  The F4F-4s succeed in downing the D3A2.  Because it is a dive bomber, it will attack at half strength (barring AA losses) before it is lost.  Next, the D3A2 escort attacks the F4F-4s.  The odds are 8 (the attack strength of the A6M2 unit) versus 12 (the combined defense strengths of the F4Fs), simplified to 1 to 1.5.  On a 1, the A6M2 would cause an F4F unit to withdraw from combat for the remainder of the phase.  As with the F4Fs' attack, the A6M2s roll for each F4F-4 unit.  The attack against the torpedo bomber group would be at 1:1 odds, meaning that a strike or escort unit would go down on a D12 roll of 1 or 2.  The escort's riposte would be at odds of 16:6, or 2.5 to 1, aborting the F4F-4 unit on a 5 or less and killing it on a 2 or less.

j. Antiaircraft Combat.

i. For ships with numerical AA factors, total the AA factors of the ships in the TF or base, then divide the total by 10 to determine the odds.  Round down to the nearest odds.  Roll D12 against each striking unit at these odds.  If the roll is at or less of the odds, the air unit is shot down before attacking.  Half of all losses are taken before the strike aircraft attack, and half after.  If an odd number of strike aircraft units are shot down, the owning player selects the odd unit, which attacks at 1/2 strength before being lost.  If the odd unit was already attacking at 1/2 strength due to a CAP attack, the unit is lost before attacking.

ii. For TFs with more than 12 ships or more than 1 carrier, divide the TF into separate groups, each containing no more than 12 ships total and no more than 1 carrier, for AA fire purposes.  Strike aircraft pick the group that they are attacking, and only ships in the group fire AA fire at the attackers.  M defense ships do not count against these limits, and may be combined with any group having 12 or fewer other ships.

iii. Double the strike values of strike aircraft if they are attacking a TF or base with no AA capability.

iv. Double the AA value of bases against units attacking the base with F values.

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      v.    If a 12 is rolled for the first attack made by the strike unit against a ships or a base with only * AA strengths, one of the striking units aborts its attack. The unit is then unavailable for combat for the remainder of the turn. The aborting units is chosen by the owning player.

      vi.    AA at less than 1:1 odds is treated as * AA.

k.    <u>Strike Combat</u>. When striking aircraft attack a TF, the defending player reveals the ships in the TF and the attacking player allocates strike units against those ship units.

      i.    The attacking player computes the odds of each attack and resolves it. Attack strengths are modified as provided by the Weapons Effects Table.

      ii.    A strike unit may not divide it attack strength among more than 1 target.

      iii.    All strike units in a strike attacking a target with P and L weapons must combine their attack strengths. Strike units attacking with M or H weapons must also combine their attack strengths. Strike units attacking with T or A weapons may combine some or all of their attack strengths, but are not required to do so.

l.    <u>Strike Transfers</u>. Striking air units need not return to the bases or ships that launched them. They can also return to any friendly base within range.

      i.    This can permit strike units to strike beyond their normal range. For example, an air unit with a range of 4 could strike a target 6 hexes away if it could land at a base in a hex 2 hexes away from the target hex.

      ii.    Air units that do not return to the base or ship from which they came cannot strike in any subsequent strike phase of the turn in which they shift their base or ship. They may return to their original ship or base in a subsequent strike phase, as long as it is within twice their normal range.

      iii.    An air unit may not strike or provide CAP in a phase in which it moves back to its original base.

      iv.    Players may use the "TRANSFER" counters provided with the game to track air units that have transferred bases.

17.    <u>Combat Results</u>. Compare adjusted attacking factors to defending ship factors to determine the odds of the attack. Attacking factors are adjusted as provided in the Weapons Effects Tables. Round down to the nearest half-odds. For example, a ship with a C defense factor of 3 attacked by 11 B points would be attacked at odds of 3.5:1. An attack by 10 B points would mean odds of 3:1. Once the odds are computed, roll 1D12. The results depend on the type of unit being attacked and the weapon attacking.

a.    For attacks other than those described below, the target ship is sunk if the roll is less than or equal to the odds and damaged if the roll is less than or equal to twice the odds. Example: in the first example above, the target ship would be sunk on a roll of 1-3 and damaged on a roll of 4-7.

b.    P and L attacks on B defense ships and A defense ships with defense ratings of 3 or more damage the ship on a roll equal to or less than twice the odds. They never sink ships. P attacks are attacks by dive bombers. L attacks are low level attacks by level bombers.

c.    A and T attacks are resolved differently than all other attacks. All A and T attacks against a target are resolved to determine the number of effective hits scored. Once the number of hits against a target is known, each hit is checked for its effect by rolling D6 and checking the result against the A Weapon Damage Table or the T Weapon Damage Table. Possible results are the target being

damaged, the target being dead in the water (DITW), or the target being sunk. A weapons are torpedoes carried by aircraft; T weapons are torpedoes carried by surface ships or submarines.

    d. An aircraft carrier that launched a strike in the first air strike phase and is attacked in any way in the second air strike phase or daylight surface combat phase is sunk by any combat result, including being damaged and dead in the water. This is an exception to a., b., and c., above. In addition, bombing (P, H, M and L) and gun (D, C, and B) factors attacking such a carrier are doubled.

18. <u>Damaged Ships and Ships Dead in the Water</u>.

    a. Damaged ship units with D defense values are removed from play as soon as they are damaged. All other damaged ships remain in play but are marked with "DAMAGED" markers.

    b. A damaged ship may not attack, search, provide CAP factors, or launch aircraft. It may land aircraft. Its movement allowance is reduced by 1 and its defensive value and AA value (if any) is halved.

    c. Ships dead in the water are marked with a "DITW" counter. They remain in play.

    d. A ship marked with a "DITW" counter may only move in the movement phase of night turns, and then only if accompanied by an undamaged B defense ship or an undamaged C defense ship with a defense rating of 2 or greater. It may not attack, search, provide CAP factors, or launch or land aircraft. Its AA value (if any) is reduced to *. Its defensive value is halved.

    e. F factors from air units based at a damaged or DITW carrier may continue to be available until the end of the strike phase in which the carrier was damaged or DITW.

    f. Aircraft units based on a damaged, DITW or sunk carrier but flying at time that the carrier was damaged, DITW, or sunk may fly to another friendly base or carrier. The other carrier or base must be within the range of the unit and must have room to accommodate the air unit after accommodating all of the air units normally based there.

    g. Half of the aircraft units on a damaged or DITW carrier are lost, with fractions rounded up. Air units are on a carrier if they were not on CAP, striking or searching in the phase in which the carrier was damaged or made DITW.

    h. Damaged and DITW results are not cumulative. A damaged ship that receives additional damage results incurs no additional penalties. The same is true for a DITW ship.

    i. The effects of damage or being DITW are applied at the end of the strike causing the damage or DITW results or, for surface combat, at the end of the round of surface combat in which the damage or DITW results happen.

19. <u>Strike composition</u>.

    a. Strike units and escorting fighters launched by a single Allied carrier in a strike phase may combine into a single strike group, subject to scenario specific rules on the composition of strikes.

    b. Two or more USN carriers may not combine their strike units to form a single air strike except as described in c. below. A USN carrier may launch more than one strike in an air strike phase, subject to the limits of available air units.

    c. There is a chance that 2 USN strike units may combine at the target to form a single strike. For each strike in addition to the first attacking the same TF in the same strike phase, roll D6. On a roll of 1-2, the air strike joins with the first air strike to form a single strike.

    d. IJN carriers in the same TF may combine strike units from different carriers to form a single air strike, but will be generally subject to scenario-specific rules that will prevent them from putting all

of their striking air units into 1 strike. An IJN carrier subject to such a restriction can launch all of its strike units in a single strike phase, but cannot combine them all into the same strike. It may form them into different strikes. If (for example) two IJN carriers in the same TF each launch two strikes in a strike phase, they may combine one strike from each carrier with a strike from the other carrier to form two separate combined strikes.

e. Strike units and escorting fighters launched by a single base in a strike phase may combine into a single strike.

f. Strike units combined into a strike have combined F and combine defensive strengths for the computation of odds in CAP combat, but each strike unit within the strike rolls separately for CAP and AA combat against it.

20. <u>Surface Combat</u>. Ships engage in surface combat in the day and night surface combat phases.

a. <u>Spotted TFs</u>. Opposing TFs in the same hex may engage in surface combat during day turns if a TF of at least one side has been spotted. If the player without initiative has TFs in the same hex with opposing spotted TFs, he or she may declare that any of his or her TFs in the hex will engage in surface combat with the spotted TFs. The player without initiative may declare this for any or all spotted opposing TFs in the hex, and allocates his or her own TFs to attack one or more opposing TF as the declarations are made. The opposing player may then attempt to avoid combat as set out below. Once this process is complete, it is repeated with the player with initiative declaring engagements for any TFs not already engaged. TFs that have been committed to combat by the first player may not avoid combat for the remainder of the combat phase. TFs of the second player that have avoided surface combat in the first player's phase may not seek surface combat for the remainder of the combat phase.

b. <u>Avoiding Combat</u>. The opposing player may attempt to avoid combat for each engagement, unless the engagement is taking place at night and the TFs engaging the opposing player are unspotted. If the opposing player attempts to avoid combat, roll D6.

  i. If the slowest ship in the TF attempting engagement is slower than the slowest ship in the TF attempting to avoid engagement, then the engagement is automatically avoided.

  ii. If the slowest ship in the TF attempting engagement is equal in speed to the slowest ship in the TF attempting to avoid engagement, then the engagement is avoided on a roll of 2-6.

  iii. If the slowest ship in the TF attempting engagement is 1 hex per turn faster than the slowest ship in the TF attempting to avoid engagement, then the engagement is avoided on a roll of 4-6.

  iv. If the slowest ship in the TF attempting engagement is more than 1 hex per turn faster than the slowest ship in the TF attempting to avoid engagement, then the engagement is avoided on a roll of 6.

c. <u>TFs with Missions</u>. Opposing TFs in the same hex may engage unspotted TFs in surface combat if one of the unspotted TFs is attempting to bombard a land base, invade, or land supplies. In that case, the player controlling the TF must declare that it has a mission permitting engagement, and opposing player may declare that any of his or TFs in the hex are attacking the TF carrying out that mission. The player of the TF attempting to carry out the mission may attempt to avoid combat as in b. above, in which case the mission is not carried out that turn. If the TF with the mission is

attempting to bombard a base, the opposing TFs are considered to be screening the base. The player without initiative attempts surface combat first, followed by the player with initiative.

d. <u>Surface Combat Resolution</u>. Results are determined based on the odds achieved by comparing each side's offensive strengths to the opposing side's defensive strengths. When computing odds, results are rounded in favor of the defender. Players allocate attacks as follows.

    i. Players organize their engaging ships into groups based on the defense strength types of the ships.

    ii. Depending on the ships engaged, up to 5 groups could be formed: B ships, C ships, D ships, A ships, and M ships.

    iii. An attacking player allocates attacks based on the groups into which the opposing ships have been formed.

    iv. Attacking ships in one group must attack ships in the equivalent opposing group unless they outnumber the ships in the opposing equivalent group. If the ships in the attacking group outnumber the ships in the equivalent opposing group, the attacking player may use ships in excess of the defending ships to attack other opposing ships.

    v. The attacking player need not attack all ships in an opposing group. He or she can concentrate attacks on a few ships in the opposing group, or even on a single ship.

    vi. In addition, a battleship may always attack 1 opposing destroyer unit with its secondary battery in any round in which D attack strengths are used.

    vii. For example, a player with 2 battleships, 5 cruisers and 2 destroyer units opposes a player with 1 battleship, 4 cruisers and 4 destroyer units. In allocating his attacks, the first player must attack the opposing battleship with 1 of his battleships, up to 4 of the opposing cruisers with 4 of his cruisers and up to 2 of the opposing destroyer units with all of his destroyers. He may use 1 battleship and 1 cruiser of his choice to attack any of the opposing ships. In addition, his battleships may attack up to 2 opposing destroyer units with their secondary batteries. The opposing player must attack 1 battleship with his battleship, up to 4 cruisers with his cruisers, and up to 2 destroyer units with 2 of his destroyer units. His other 2 destroyer units may attack any opposing ships that he chooses, and his battleship's secondary battery may attack a destroyer unit as well.

    viii. Ships can combine their attack strengths when attacking a single enemy ship unit.

e. <u>Combat Rounds</u>. Surface combat is fought in a series of rounds.

    i. During daylight engagements, B and C attack strengths are used in the first round, and B, C, D, and T strengths may be used in any subsequent rounds. For each round, the player without initiative declares and resolves attacks before the player with initiative, but results are applied simultaneously.

    ii. For night engagements all types of attack strengths may be used in each round. Results are applied after each player's attacks rather than simultaneously. If all of one side's TFs engaged in the combat were unspotted and at least one of the other side's engaged TFs was spotted, the side with the unspotted TFs attacks first and applies the results of its attacks before the other player attacks. If both side or neither side began with all of its engaged TFs unspotted the player with initiative attacks and applies results first.

      iii.  After the second round of combat, a player may declare that his or her engaged ships are withdrawing from combat.  A player declares this rather than declaring attacks.  The withdrawing player places the withdrawing TFs 1 hex away from the hex in which the engagement took place.  The withdrawing player must choose this hex from 1 of 2 hexes designated by the player not withdrawing.

      iv.  T attack strengths may only be used once per scenario.

      v.  For purposes of determining initiative in night engagements, the highest radar rating of any ship in a TF is added to that side's initiative rating to give a modified rating for the TF.  As TFs may have different initiative ratings due to having different radar capabilities, it is possible that some TFs from one side could resolve combat before the opposing side and some TFs could resolve combat after the opposing side.

      vi.  Ships may combine factors to attack opposing ships, but cannot split factors.

f.  <u>Screened Units</u>.  Before the players reveal the ships engaged in surface combat, a player may declare whether any of his or her ships will be screened.  A player's screened ships may only be engaged in surface combat if the opposing player has more than twice as many non-screened ships as the player declaring that some of his or her ships will be screened.  The opposing player may attack the screened ships with his or her non-screened ships in excess of twice the number of the first player's non-screened ships.  The opposing player selects these ships.  The player without initiative declares whether he or she is screening any ships first, and then separates the counters for those ships from the non-screened ships without revealing them to the other player.  The player with initiative then declares whether he or she is screening any ships.

g.  The effects on ships damaged in surface combat are the same as for ships damaged by air strikes.

21.  <u>Dummy TFs</u>.  A scenario may specify that a player may use dummy TFs.  A dummy TF is a TF block that has no ships (either real or dummy) associated with it.

a.  Dummies move just like real TFs

b.  If a dummy is spotted, it is removed.

c.  Once removed, the dummy can be returned to play in the TF phase in any hex containing a friendly dummy or a friendly TF.  Of course, the opposing player should not see which block in the hex is the returned dummy.

d.  An owning player may always remove a dummy voluntarily.

e.  *Suggestion: to distinguish dummies from real TFs, owning players may wish to place dummy blocks on their sides, so that the color stripe on the face of the block runs up and down rather than from side to side.*

22.  <u>Dummy Ships</u>.  A scenario may also specify that a player may use dummy ships.  Dummy ships may be added to real ships in a TF to give a misleading impression of the size and composition of the TF.  Dummy ships may also be grouped into TFs composed of only dummy ships.

a.  Dummy ships are not represented by counters.  They are only represented by playing cards.

b.  Any TF with only dummy ships in it must also contain a joker.  Any TF with a mix of dummy ships and real ships must also contain a seven, eight, nine or ten of hearts.

c.  If a searching player is dealt a card indicating the presence of dummy ships when searching a TF, that player may (but need not) require the owning player to remove all dummy ships.  It the TF contained only dummy ships, the TF block is removed as well.

      d.   Dummy ship cards in TFs with real ships are removed when the TF engages in surface combat or is attacked by air units in an air strike. In the latter case, the air units must actually resolve combat for the dummy ships to be removed.

      e.   Once dummy ships are removed from play, they are not returned.

23. Endurance. Destroyers and certain other ships have endurance ratings that represents the number of turns that ships of that type can remain at sea. Their endurance ratings are found on their ship counters. Scenario rules will specify how many turns various TFs have been at sea. Each players notes the ship with the shortest endurance in each of his or her TFs, subtracts the number of turns that the TF has been at sea to determine the turns of endurance that the TF has remaining, and then writes in the Turn and Endurance Record the last turn of the TF's endurance. For example, if a TF has been at sea for 4 turns at the start of a scenario, and the DDs within the TF had endurance ratings ranging from 9 to 13 turns, the player would write "5" (9 minus 4) on the track for the TF. That would be the last turn in which the TF could move normally before refueling.

      a.   Ships must return to a properly equipped port or refueling point by the turn that their endurance expires. Scenario rules specify ports and refueling points at which ships may refuel.

      b.   If ships do not refuel within the limits of their endurance, their movement become restricted, as follows.

          i.   For the first 2 turns after ships exceed the limits of their endurance, they are limited to a speed of 3 hexes per turn.

          ii.   For the next 2 turns, their maximum movement drops to 2 hexes per turn.

          iii.   For the next 2 turns, their maximum movement drops to 1 hex per turn.

          iv.   Thereafter, they may not move.

      c.   Slower ships use less fuel. For ships with endurance stated on their ship counters, double their remaining endurance if they are in a TF with a ship capable of moving only 2 hexes or less per turn. Increase the remaining endurance of these ships by 50% (fractions rounded down) if they are in a TF with a ship capable of moving only 3 hexes per turn. Halve (for movement allowances of 2) or reduce by 1/3 (for movement allowances of 3) the remaining endurance of these ships if the slower ship is no longer in their TF. Ignore the effects of exceeding endurance on ship speeds when applying this rule. These effects only apply to TFs that have not exceeded their normal endurance. For example, a TF of 2 destroyer units with 6 turns of endurance remaining is joined by a ship with a maximum speed of 3 hexes per turn. The 6 turns of endurance would expire on turn 9. Cross out "9" and insert "12" on the TFs endurance record – 50% of 6, added to 9.

      d.   Ships with stated endurance that move 5 hexes in a turn use 1 extra turn of endurance. Reduce the endurance of their TF by 1.

      e.   Ships with stated endurance that move 6 hexes in a turn use 2 additional turns of endurance. Reduce the endurance of their TF by 2.

      f.   A TF that returns to properly equipped base or refueling point may refuel its ships and return to normal operations. When a TF spends an entire turn at a refueling point, the owning player notes the new last turn of endurance on the TF's track on the TF log. The new last turn of endurance is counted from the turn following the turn on which the TF refuels. For example, if a TF with a maximum endurance of 12 refuels on Turn 13, its new endurance is "26" (14 plus 12) and it would have to move to a refueling point by the end of its movement on Turn 26 before beginning to suffer

the effect of exceeding its endurance.  Players may use the "REFUELING" counters provided with the game to track which TFs are refueling.  Refueling is considered to take place in the movement phase of the turn.  Only USN ship units may use refueling points to refuel during night turns.

g.  A, B, and C defense ships without a stated endurance on their ship counters have (for game purposes) an endurance of 25 turns.  This endurance does not vary based on the speed of their TF.  M defense ships have unlimited endurance.

h.  Endurance and Victory Points.  Players may be tempted to run their ships out of fuel at the end of scenarios.  To discourage this, award 1 VP per enemy ship unit that could not reach a refueling point within 2 turns after the end of its normal endurance, and the damaged VP value of any ship unit that cannot reach a refueling point within 4 turns after the end of its normal endurance.  In determining whether a ship unit that would exceed its stated endurance can reach a refueling point, apply the reduced speeds applicable to ship units exceeding their endurance.

24.  Land Bases.  Air units at land bases may be attacked by aircraft in the first and third air strike phases.  Land bases designated by scenario special rule may also be attacked by ship B, C, and D factors in the surface engagement phase.

a.  All air units at an air base have a combined L defensive value of 4.

b.  Compute the odds based on all adjusted attacking strengths, then roll D12 for each air unit present at the base.  On a roll equal to or less than the odds, the air unit is destroyed.  On a roll of twice the odds, the air unit is unavailable for the rest of the turn.

c.  Air units with F values may use those values to attack bases.  If they elect to do so, their defensive values are halved and they do not attack any CAP present.  Air units with underlined F values double those values when attacking bases.  Air units attacking in this way are subject to attack by AA at double the normal value.

d.  Air units are considered not to be present at a base in the following circumstances.

i.  For bases that benefit from radar or an early warning system, air units engaged in CAP or strikes in the strike phase are always away from the base, and air units not engaged in a strike or CAP are considered present at the base on a D12 roll of 3 or less.  Roll for each air unit not striking or on CAP.

ii.  For bases that do not benefit from radar or an early warning system, air units not engaged in CAP or strikes in the strike phase are always considered to be at the base, and air units engaged in CAP or strikes are considered to be at the base at the time of the attack on a D12 roll of 3 or less.

iii.  For attacks in daylight surface combat phases, air units are considered to be present or away from the base based on their activities in the preceding air strike phase.

e.  When ship units attack bases, the bases can be screened by friendly ship units as if they were ships.

f.  Ships with B factors can only attack bases once per scenario.

g.  Ports.

i.  Ports are land bases that friendly ships may enter.

ii.  Ports may unload the cargos of M class ships.

iii.  Some ports may be able to refuel ships entering them.

iv.  Ships in ports may be attacked by air and ship units.

v. Unless scenario rules state otherwise, D, T, and A factors may not attack ships in ports.

vi. All ships in a port are considered in a single TF for purposes of combat. Limits on the number ships in a TF do not apply for the purpose of this rule.

vii. Ships in a port may add their AA and half of their surface attack factors to the AA and attack factors of the base. However, the combined AA of the port and the ships in it is limited to 50 points.

viii. A port's CAP also acts as CAP for all ships in the port, without any reduction in the F strength of the CAP.

25. <u>Submarines</u>. Submarines are represented by blocks placed face-up on the playing surface. Each block represents a patrol line of 6 to 12 subs. Submarines may not be attacked. Each submarine block may spot 1 TF in its hex in each daylight search phase.

    a. Submarine searches are conducted before all other searches.

    b. The submarine player announces whether the submarine is attacking or merely observing the TF. The submarine player then blindly selects 2 cards from the TF that it has spotted.

    c. If the TF has less than 4 cards and the first card selected was not a diamond, the submarine may attack a ship of the class of the first card selected. If the TF contains more than 1 such ship, the ship attacked is selected randomly.

    d. If the TF has 4 or more cards and neither card selected was a diamond, the submarine player may attack a ship of the class of either card selected.

    e. If the submarine attacks a TF containing 1 or more destroyer unit, the submarine may not move in the following movement phase or spot or attack in any search phase before the following movement phase. Turn the submarine block sideways to record this. APDs do not count as destroyer units for this purpose.

    f. If a submarine attacks a dummy ship – for example, because the only ship of the card class being attacked is a dummy, the ship is revealed to be a dummy and removed from the TF. The submarine then attacks again.

    g. Submarine may also attack in night search phases. They attack after other searches, but may only attack spotted TFs.

    h. Submarines move 2 or 3 hexes per turn, as printed on the blocks representing them. They move when their side's unspotted TFs move.

    i. Submarines may not search or attack TFs in ports.

    j. Submarines are not subject to searches or attacks. Their blocks are always placed face up.

26. <u>Transport Missions</u>.

    a. Ships transporting cargo may attempt to unload it at locations specified in scenario special rules.

    b. Transports (ships with M defense strengths) and APD units may always carry cargo. Each transport may carry victory points (VP) of cargo equal to its displacement rating. Each unit of 2 APDs may carry 2 VPs of cargo.

    c. Other ships can carry cargo only as specified by scenario special rule.

    d. To unload, a transport must spend 1 turn in the hex in which it intends to unload its cargo. An APD unit can unload cargo in a hex in which it starts or ends a turn. Unless other specified in scenario special rules, other non-M defense ships carrying cargo unload as APDs.

> e. To load cargo, a ship or ship unit must begin in the hex containing the base at which the cargo is located, and must spend 1 turn in that hex loading the cargo.

27. <u>Carrier Pools</u>.

> a. Frequently, the opposing sides in these battles were uncertain of the forces that they were facing. This rule attempts to recreate some of this uncertainty for the most important ship types in the game – the carriers.
>
> b. This is an optional rule. Players should decide whether to use it at the start of a game.
>
> c. At the start of a scenario, players determine the identity of the carriers in their forces by drawing cards from a pool. The composition of the pool is set for each scenario, and includes both specified carriers and dummies.
>
> d. The owning player draws the first set of cards. These are the carriers and dummies available to that player for the scenario.
>
> e. The opposing player draws the next set of cards. The cards drawn may give the opposing player some clues as to the composition of the opposing forces.
>
> f. Neither player reveals the cards draw to the other player.
>
> g. The cards are identified with specific carriers only for the purpose of this rule. Once a player determines the carriers and dummies that he or she will receive, the playing cards for TFs are selected in the usual way.

28. <u>Victory Points</u>. Award victory points (VPs) based on ships sunk, damaged, or dead in the water, air units lost, bases knocked out, and cargo unloaded, as shown in the Victory Points table. To win a scenario, the winning side must have at least 25 more victory points than the other side. Scenario special rules may also set or modify victory conditions.

**Air Strike Weapons Effect Table (D12)**

|  | P (Dive bombing) | L (Low level bombing) | M (Medium level bombing) | H (High level bombing) | A (Aerial torpedo) |
|---|---|---|---|---|---|
| D Target | X1/2 | X1/4 | X1/2 | X1/2 | X1/2 |
| C Target | X1 | X1/2 | X1/2 | X1/2 | X1 |
| B Target | X1/4 | X1/4 | X1/2 | X1/2 | X1/2 |
| A Target | X1 | X1/2 | X1/2 | X1/2 | X1 |
| M Target | X1 | X1 | X1 | X1 | X2 |
| L Target | X1 | X1/2 | X1/2 | X1 | NA |

Other modifiers to weapons values:

- Carrier target bombed in second air strike phase that launched a strike in the first air strike phase: X2 to P, L, M, and H factors in addition to modifiers shown in table
- Strike aircraft not opposed by AA: X2 in addition to modifiers shown in table

**Surface Combat Weapons Effect Table (D12)**

|  | D (Destroyer guns) | C (Cruiser guns) | B (Battleship guns) | T (Torpedoes) |
|---|---|---|---|---|
| D Target | X1 | X1/2 | X1/4 | X1/2 |
| C Target | X1/2 | X1 | X1 | X1 |
| B Target | X1/4 | X1/2 | X1 | X1/2 |
| A Target | X1/2 | X1 | X1 | X1 |
| M Target | X1 | X1 | X1 | X2 |
| L Target | X1/4 | X1/2 | X1 | NA |

- Land target attacked by B guns equipped with bombardment shells: X3
- Carrier target attacked in first surface combat phase that launched a strike in the first air strike phase: X2 to D, C, and B factors in addition to modifiers shown in table

Example: *Helena* lets fly at *Kako*. She attacks with 5 D factors, but these are halved as they are D factors attacking a C class target. *Kako* has a defensive value of 2C, giving odds of 1 to 1. *Kako* will be damaged on a roll of 2 and sunk on a roll of 1.

**Victory Points Table**

| Type | Sunk | Dead in the Water | Damaged |
|---|---|---|---|
| Carrier | 30 x A defense rating | 20 x A defense rating | 10 x defense rating |
| Battleship or battlecruiser | 12 x B defense rating | 8 x B defense rating | 4 x B defense rating |
| Cruiser | 12 x C defense rating | 8 x C defense rating | 4 x C defense rating |
| Destroyer (1 or 2 ships) | 3 x D defense rating | Not applicable | 1 x D defense rating |
| AVD, DMS or APD unit | 3 x D defense rating plus any cargo not unloaded | Not applicable | 2 x D defense rating plus ½ of any cargo not unloaded |
| Transport or auxiliary | cargo rating plus any cargo not unloaded | Not applicable | ½ cargo rating plus ½ of any cargo not unloaded |

Air unit lost – 5 VP        Transport cargo delivered – As rated per transport      APD cargo delivered – 2 VP per unit       Endurance exceeded – 1 VP per ship unit or damaged VP value of the ship unit

**Effects of Combat Die Rolls (D12)**

| Target | Attacker | Roll twice odds or less | Roll odds or less |
|---|---|---|---|
| Strike units | CAP | Strike unit shot down | Strike unit shot down |
| CAP | Strike Units | No further attacks by CAP that turn | CAP unit shot down |
| Strike units | Allied AA (doubled against strafers) | No effect | Strike unit shot down |
| Air units at bases | Air units or ships | Out for rest of turn | Air unit destroyed |
| C, D, and M defense ships; A defense ships with defense < 3 | Any weapon except T or A | Ship damaged | Ship sunk |
| B defense ships; A defense ships with defense > 2; | C, B, M, or H weapon | Ship damaged | Ship sunk |
| B defense ships; A defense ships with defense > 2; | D, P or L weapon | Ship damaged | Ship damaged |
| All ships | T and A weapons | One hit | Two hits |
| A defense ships special rule# | Any weapon | Ship sunk | Ship sunk |

#P, H, M, L B, C, and D weapon factors doubled.

* AA: If the first attack roll for the strike is a "12", one of the striking units' attacks has no effect and the striking unit is unavailable to attack for the remainder of the turn.

Air-to-air combat: F units can attack less than all striking units to achieve 1:1 or 1:2 odds, but must attack all opposing F units.  CAP not defending its own TF or base will be at ½ or ¼ F strength.

Defense factors of damaged and dead in the water ships are halved.

Roll 1-3 on D6 for CAP unit previously engaged in a strike phase to engage again in the same strike phase.

**A Weapon Damage Table (D6)**

| | Target Sunk | Target Dead in the Water | Target Damaged |
|---|---|---|---|
| B defense ships; A defense ships with defense > 2 | 1 | 2-4 | 5-6 |
| C defense ships; A defense ships with defense <3 | 1-2 | 3-4 | 5-6 |
| D and M defense ships | 1-4 | -- | 5-6 |

**T Weapon Damage Table (D6)**

| | Target Sunk | Target Dead in the Water | Target Damaged |
|---|---|---|---|
| B defense ships; A defense ships with defense > 2 | 1-2 | 3-4 | 5-6 |
| C defense ships; A defense ships with defense <3 | 1-3 | 4-5 | 6 |
| D and M defense ships | 1-5 | -- | 6 |

**Search Roll Modifiers (D6)**

| Initiative Level | ± Level |
|---|---|
| Each search in hex beyond 1$^{st}$ | +1 |
| All searchers searching beyond 5 hexes | -1 |
| All searchers searching beyond 10 hexes | -1 |
| Searching hex containing Allied base or TF with declared CAP | -2 |
| Cloudy weather | -1 |
| Stormy weather | -2 |

- Maximum number of cards dealt cannot exceed 4

- Only units designated by special rule may search at night

- Search range modifiers are cumulative, except as provided in the next bullet

- Cloudy weather modifier not used if CAP modifier is used. Unless provided by scenario rule, CAP modifier cannot be used at night or in storms. If CAP modifier is used and search roll is 1 less than would be needed to draw a card, the TFs in the hex are considered spotted for the following strike phase only

**Weather Tables**

Weather in zone is clear:

| Die Roll | Result |
|----------|--------|
| 1-4 | Clear |
| 5-6 | Cloudy |
| 6 | Stormy |

Weather in zone is cloudy:

| Die Roll | Result |
|----------|--------|
| 1-3 | Clear |
| 4-5 | Cloudy |
| 6 | Stormy |

Weather in zone is stormy:

| Die Roll | Result |
|----------|--------|
| 1-2 | Clear |
| 3-5 | Cloudy |
| 6 | Stormy |

Weather Effects:

| | Cloudy | Stormy |
|--|--------|--------|
| Forming Up Strike | Automatic | 1-4 |
| Target at Sea, Range < 5 Hexes | 1-4 | 1-3 |
| Target at Sea, Range >4 Hexes | 1-3 | 1-2 |
| Target Base, Range <5 Hexes | 1-5 | 1-4 |
| Target Base, Range >4 Hexes | 1-4 | 1-3 |

Roll D6 within range to successfully form up or strike target. Weather in hex where strike begins affects forming up roll. Weather in target hex affects all other rolls. If a strike fails to form up, it returns to the base or carrier that launched it at the end of the strike phase. If a strike fails to find its target TF or base, it may roll to find other TFs or bases in the hex. Aircraft units in strikes are marked with STRUCK counters even if they fail to form up or find their target.

F values of CAP in stormy hexes are halved, in addition to any other modifications. Search die roll modifier of -1 for cloudy weather, -2 for stormy weather. Cloudy weather modifier not used if CAP search modifier is used. Unless provided by scenario rule, CAP modifier cannot be used at night or in storms.

<u>Designer's Notes</u>.

World War II carrier combat has fascinated me for the past 45 years.  The 1942 carrier battles had all the elements of high drama: tense waiting, the struggle to find and fix the enemy, the sudden violence of blows and counter-blows, and the issue very much in doubt.  And all this played out with new and untested tools and techniques.  At the beginning of 1942, no one really knew what carrier versus carrier combat would be like.  All of the battles saw continually evolving theories put into practice in the most trying of circumstances.

And the circumstances were trying indeed.  Four carrier-on-carrier battles were fought in 1942.  In those battles, the Imperial Japanese Navy lost two light carriers and four fleet carriers, while the US Navy lost three fleet carriers. Add to this a fourth US fleet carrier sunk by a sub in the area of operations and five occasions on which fleet carriers of one side or the other were seriously damaged in carrier battles.  Finally, consider that these battles saw a total of three light carriers and twelve fleet carriers actively engaged and one gets a sense of the intensity of carrier combat during this year.[1]

Gaming the 1942 carrier battles brings challenges of its own.  I've played many of the games published on the topic.  Most of them are great fun, but I have not found any board games that – in my view – do a completely satisfactory job of recreating the essential elements of these clashes.  The closest that I have seen were a few refereed games of *Flattop*, but finding a single opponent is hard enough without also finding someone willing to referee.

What were the essential elements of carrier warfare in 1942?

First and foremost was the quality of information available to the commanders.  The carrier admirals fought their battles on the basis of incomplete and conflicting information.  They had to make critical decisions with maddeningly few and often conflicting facts in hand, and with little idea of how much the enemy knew of their own situation.  Finding and attacking enemy forces were the crucial things to these commanders.  Finding the enemy first and then striking the first blow put a force well on the way to victory.

But finding the enemy was more easily said than done.  Difficulties stemmed from many causes.  Bad weather could interfere with air searches.  Searching aircraft were usually instructed to see as much of an enemy formation as they could without being seen themselves; this resulted in fragmentary and delayed sighting reports.  Often, air searchers were just flat wrong in identifying ships or locations.  Even when they were right, unreliable radios and strained communication nets often resulted in garbled, incomplete or delayed sighting reports. Searches themselves were constrained by available resources.  Aircraft used for searching were not available to strike the enemy.   And finally, even accurate information left carrier

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[1] For those counting, the fifteen carriers actively engaged in at least one of these four battles were Akagi, Enterprise, Hiryu, Hornet, Junyo, Kaga, Lexington, Ryujo, Saratoga, Shoho, Shokaku, Soryu, Yorktown, Zuiho, and Zuikaku.  Enterprise, Shokaku and Zuikaku fought in three battles, Hornet and Yorktown in two, and all the rest in one only.   Only Junyo, Saratoga and Zuikaku escaped unscathed.  Akagi, Hiryu, Hornet, Kaga, Lexington, Ryujo, Shoho, Soryu and Yorktown were all sunk.  Enterprise and Shokaku were both damaged in two battles, while Yorktown and Zuiho each took significant damage in one battle.  In addition, Wasp was sunk by an IJN submarine in the vicinity of Guadalcanal and Saratoga was torpedoed and damaged there.

commanders with the dilemma of striking now or waiting to see if more important targets appeared.  All these factors forced the carrier admirals to make crucial decisions on the basis of imperfect and uncertain information.

Given all of these difficulties and constraints, it is remarkable that air searches were as effective as they were.  In this period, most searching aircraft in a position to find something found something .  Far more common were partial reports, incorrect reports, and (for the Japanese) shoot-downs of searching aircraft by defending fighters.  Generally, the carrier admirals had some information of the location of the enemy – but they seldom had perfect information.

The second major factor in carrier warfare was the logistical straightjacket that carrier admirals faced.  Fuel was the key to this, and particularly fuel for destroyers.  At sea refueling meant slow speeds and steady courses, so no commander wanted to refuel his ships with range of the enemy.  Dwindling fuel reserves meant a withdrawal from the combat zone.  This imperative drove carrier operations both offensively and defensively.  An offensive move could only sustained for as long as there was fuel in the ships' bunkers, while task forces could not loiter in defensive positions indefinitely before having to withdrawal to refuel.  The ebb and flow of the great carrier battles can only be understood in the context of dwindling fuel supplies.

Third on the list of factors were the operational realities of carrier combat.  Both the physical constraints of the carriers and the operational doctrines of the respective navies shaped these.  The conduct of searches, the composition of air strikes, the defense of carriers and other ships – all were affected by these factors.  Carrier admirals had to keep in mind the capabilities and limitations of their own forces in fighting their battles.

In "Carrier Clashes", I have tried to create a two player game that includes all of these elements.

Logistical Considerations.

Nelson was reported as saying, in the midst of one of his great campaigns, that were he to die at that moment want of frigates would be found graven on his heart.  For the carrier admirals in this period, the word would have been "fuel," not "frigates."
In the South Pacific particularly, both the Japanese and the US navies fought at the end of a long, slender logistical pipeline.
Available fuel circumscribed movements, limited force sizes, and constrained planning.

Simulating the logistical issue in Carrier Clashes is relatively straightforward.  It is a matter of record-keeping, with a focus on individual task forces and the destroyers within them.  Destroyers receive this focus because they are the shortest-ranged ships in the game.  Carriers, battleships and cruisers generally carried enough fuel to see them through these battles with a comfortable margin – at least 10 days' worth at speeds of 20 knots and often considerably more.  But destroyers generally carried well less than two weeks' worth of fuel at these speeds.  And that endurance was diminished still further by the destroyer's roles, which typically required them to cover more ground at higher speeds than the speeds of the ships they were

screening.  I have abstracted the refueling process by focusing on the destroyers' endurance.  In the game, the need to refuel comes from the destroyers' bunkers running low, and results in a force's departure from the combat zone.  Once clear, refueling encompasses taking on oil from specially equipped, dedicated tankers, transferring oil from larger combatant ships to smaller ships, and refueling at bases.

The endurance figures for destroyers represent the ideal point at which a TF commander would want to have them refueled.  On occasion, commanders could and did stretch the intervals between refueling.  But this came at the cost of reduced speeds.  And on the topic of reduced speeds, the rules do permit destroyers to extend their endurance when escorting slower ships.  The rules do not, however, allow players to stretch destroyer endurance simply by slowing their TFs down.  This reflects my judgment that TFs that could cruise at 20 knots would do so, as a way of reducing the threat from enemy submarines.

The Mechanics of Combat.

Because my focus is on the task force commanders, combat is relatively abstract.  A note on this: one thing that emerged from my analysis of the battles was the tremendous resilience of US carrier aircraft.  With the exception of the torpedo bombers at Midway, USN carrier aircraft had very low loss rates compared to their Japanese counterparts.  This was particularly true of losses anti-aircraft fire, and grew even more pronounced as Allied AA outfits grew throughout the period.  And while US and Japanese CAP fighters were equally efficient at intercepting enemy strikes – US fighters because of radar direction and Japanese fighters because of their excellent performance – US fighters harvested far greater numbers of Japanese strike aircraft, again with the TBDs at Midway excepted.

Also abstracted are the nuances of carrier strike operations.  This all goes to the issue of physical and operational constraints on the fighting forces.  The details of these also vary by nationality.

During this time period, most large carriers could not launch all of their strike aircraft and accompanying fighter escorts as a single deck load strike.  The limiting factors there were the size of the carrier flight decks and the length of the take-off runs required for the heavily armed and fully fueled strike aircraft.  Later in the war, US carriers dealt with this issue by using catapults to launch some aircraft but this technique was not used to launch strikes in 1942.

US carriers usually tried to launch as many aircraft as possible in a single strike.  For *Enterprise* class carriers, this meant spotting a first wave on the flight deck and a second wave below on the carrier's hanger deck.  Because the hanger deck could be opened to the air, the second wave could warm its engines there and be ready for launch as quickly as it could be brought to the flight deck.  In general, both waves would then  join up for a strike.  How and when that happened varied with time period and specific carrier, but in the game it is all abstracted into a strike single wave.  *Lexington* class carriers had to warm aircraft engines on their flight decks, which restricted the size of their strikes.  This is abstracted by making strikes from *Lexington* class carriers a bit less potent than strikes from *Enterprise* class carriers.  The *Wasp* had open hanger decks but smaller overall dimensions.  This limited the size of its strikes still further.  Finally, all USN carriers increased the size of their strikes by limiting the weight of bombs carried by some of the striking dive

bombers.  This reduced the required take-off distance for those planes, and permitted them to be spotted further forward on the flight deck.

Japanese carriers did not have open hanger decks and they limited the refueling and rearming activities conducted their flight decks.  Practically, this translated into large Japanese carriers having to launch their strike aircraft in two separate strikes, as the tempo of their arming and fueling operations would have meant that the first deck load of aircraft launched would have to wait a considerable time for the second to arm, fuel, warm up, launch and join the first deck load.  In later battles in 1942, the Japanese made a virtue of necessity and developed a doctrine of sending smaller strikes out separately.  They also made up for smaller strike groups (somewhat) by effectively combining strike groups launched by different carriers, something that the Americans did not do during this time period.

The Fog of War.

But of all of these key factors, I found limiting information to be the hardest challenge.  The game uses a combination of elements to simulate this.

First, the game permits the copious use of dummies.  This permits a player to keep an opponent guessing as to the location of his or her forces and the timing of any strikes.  Adroitly used, dummies can force the opposing player to burn fuel and focus search assets away from a player's actual forces.

Second, the game uses the concept of search arcs for the conduct of searches.  Where a carrier is searching, this means that the opposing player may get an inkling of the carrier's location.  That is not ideal, but it is better than the a searching carrier automatically revealing its presence.  And it also simulates the reluctance of the commanders to prematurely reveal the presence of carriers by overflying enemy ships or subs with carrier aircraft.  If a player wants to keep the presence of carriers secret, he or she can always forebear searching with the carriers.

Finally, the game uses a card draw system when task forces are searched.  This is designed to do a couple of things.

Obviously, the card system limits the information that the searching player receives.  Seldom will a searching player be able to see all of the ships in a large task force.  And of the ships searched, the player will only know types of ships present.  So is that carrier sighting report a sighting of fleet carrier, a light carrier sent out as a stalking horse, or just a mistaken report?  Is that battleship task force just a surface strike unit or are the battleships escorting carriers yet unseen?  The searching player has to struggle with all of these questions, just as the commanders did at the time.

More subtly, the card system limits the information that the searched player receives.  He or she will not know whether the searching player spotted the carriers in the carrier TF – or the transports in the transport TF.  If the searched player seeded the task force with dummy ships, he or she will not know if the opposing

player "spotted" the dummies, or even drew a card telling him or her that the task force contains dummy ships.

And Some Random Notes.

A note on refueling. Starting before this period and continuing through it, both the USN and the IJN developed effective means of refueling ships while underway. In the USN, this extended to refueling underway at night and refueling smaller warships from larger warships. I have not found accounts of IJN ships refueling from ships other than dedicated tankers. The "refueling rendezvous" in the game are a bit of an abstraction. For the IJN, they represents points at which IJN task forces could meet tankers for at-sea refueling. In the case of the USN, they also represent areas far enough from the zone of operations that USN commanders would feel comfortable in refueling smaller ships from their carriers, battleships and cruisers.

A note about attacking air bases. Much of the Guadalcanal campaign was devoted to Japanese attempts to knock out Henderson Field, the Allied air base on Guadalcanal island. This proved exceedingly hard to do. In its strongest effort, the Imperial Japanese Navy dumped almost 1000 14 inch shells into the field in the course of a single night, destroying half the aircraft present and touching off the field's fuel dump. Despite this punishment, the field was operating the next day. Bombardments with smaller guns and air raids had even less of an effect on the airfield itself.

Given this history, the game eschews the notion of "knocking out" and airbase. Instead, the main effects of attack on air bases is the destruction of air units based there. At night, this dynamic is straightforward; the air units are grounded and so vulnerable to attack. During the day, air unit losses reflect losses to units caught on the ground, due to bad timing or minor damage requiring repairs.

A further note about antiaircraft fire. In this period, IJN antiaircraft fire was ineffective in shooting down Allied aircraft. The was the result of a number of factors: the sturdiness, armor protection and self-sealing fuel tanks of most Allied aircraft, the nature of IJN AA armaments, and relatively unsophisticated state of IJN AA fire control. But that is not to say that IJN AA had a significant morale effect on Allied attacks, distracting aircrews and pressuring attackers not to push their attacks home. The rules in the game reflect this. They also reflect the increasing effectiveness of Allied AA during this time. This trend continued throughout the war, particularly with the adoption of the proximity fuse and the proliferation of 40 mm Bofors guns on Allied ships. Not long after the period covered here, any daylight IJN air attack on USN carriers became tantamount to a suicide mission. Radar directed CAP and the high volume of well-directed AA fire made it so.

So this is my take on the carrier battles of 1942. I hope that it gives you some pleasant gaming hours and perhaps a new appreciation for the challenges facing the commanders in those battles.