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Free

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THE AIR WAR CONTINUES

What I am going to do with all that Junk(ers)?

by Bruce Harper

Introduction

This issue builds on the Summer 2009 issue of ULTRA, completing (for now!) our analysis of the air war in A WORLD AT WAR. The basic principles that "more is better" and "better is even better" apply to all aspects of the air war, but there are some subtleties to the air war that students of the game will want to master.

Defensive Air Support

In his article on defensive air support, Dave Hanson shares his thoughts on how a defender with inferior air strength (how often does the side with a air superiority have to defend?) can make life more difficult for the attacker. Experienced players know that careful basing and the judicious application of defensive air support can create the kind of "speed bumps" that wear down an attack.

Air Combat

Dave's analysis of air combat is worth serious study. A good understanding of the Air Combat Table will save an air factor here and an air factor there, but these add up! In a hard-fought game, small advantages matter, and cumulatively they can make the difference. It is comforting that hard analysis of air combat tends to confirm our intuitive understanding of many situations, but I suspect that most players will still find a few

surprises in this article. If their opponents are later surprised, they will have only themselves to blame!

Strategic Bombing

Kevin Milne's overview of strategic bombing will be especially useful for newer players who may never have undertaken a bombing campaign. While building bombers, bombers and more bombers (arguably the historical approach taken by the Western Allies) is the way we all start our bombing careers, there is much more to it than that, and Kevin's article will save you from many false starts.

Whether you are a bombing aficionado or not, you will sometimes find yourself defending against an opponent's bombing campaign. Kevin's article covers that too.

Kamikazes

What better way to finish our coverage of the air war than with an assessment of kamikazes? In typically engaging fashion, Greg Wilson takes us through the kamikaze rules, including some important pointers. Every so often kamikazes can affect the outcome of the Pacific campaign by delaying an American invasion of Japan; but whether or not they actually accomplish this goal, they are lots of fun! What Japanese player doesn't want to sink a few more American carriers before surrendering?

The Air War – Part 2

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“NEED FAST MOVERS!! HELP!!”

Defensive Air Support

by Dave Hanson

Army and naval air units in A WORLD AT WAR may fly air-to-ground missions. Air units in this mode operate as a kind of strategic-level artillery arm. When adding their factor strength to friendly ground units defending a hex, an air-to-ground mission is known as “defensive air support”. A player may fly defensive air factors up to a 3:1 ratio to his defending ground factors. Air units fly in order to affect the odds on the ground Combat Results Table. Air Nationality die roll modifiers do not affect ground attacks, so generally players prefer to use lower air nationality units for ground support or for defensive air support, and save higher level units for air combat. Various special considerations do affect players’ decisions about whether or not to fly defensive air support missions. These we shall examine.

Enemy Air Superiority

Usually the alliance faction that possesses greater numbers of naval, ground, and/or air factors than does an opposing alliance faction will hold the initiative against the inferior faction. Defenders have fewer resources than attackers have. The “correlation of forces” (as the Communists used to say) works against the defender. Any alliance faction possessing a numerical (and possibly also qualitative) edge in air

forces should dominate a battlefield and seek to neutralize the opponent’s air forces, usually via counterair or interception missions and air combat. Attacker air superiority seriously limits a defender’s flexibility in use and placement of his air units.

The following air forces typically must think defensively: Anglo-French air forces in France, the RAF alone in 1940-41; the Russian air force in 1941 and 1942; and, since turnabout is fair play, German and Japanese air forces after the U.S. army and naval air units darken the skies with vast numbers.

Location, Location, Location

To survive, a weaker air force must deploy for self-protection – i.e., stay out of reach of the enemy. He can base more than four hexes away from the enemy’s forward units, so the attacker can’t drop an airbase counter during air staging and counterair the defending air, and he can avoid flying missions in hexes vulnerable to enemy interception. If the defender never flies defensive air support then his air units will inflict no casualties, although the attacker must still account for defending air that could potentially fly defensive air support. Keeping weak, inferior air forces completely out of battle does make sense when their owner can’t afford rebuilds should the air units be eliminated in battle.

The Defender’s Calculations

The owner of defending air makes the opposite calculation to that of a player flying ground support. Ground support adds to ground factors attacking in order to boost attacking odds. (See the article “Fair Fights” in the Spring 2009 ULTRA.) The player wishing to fly defensive air support usually wants to reduce the potential attacking odds against a given hex to force the attacker into rolling on lower odds columns than he’d prefer to increase the prospect that the attacker will suffer casualties or even fail to destroy the defender.

Uncertainties

Defensive air support introduces several uncertainties into ground attacks:

EDITOR: Bruce Harper
ASSOCIATE EDITORS, ARTICLE DEVELOPMENT: Markus Kässbohrer, Ed Schoenfeld, Jim Sparks, Eric Thobaben, Dave Hanson
PROOFREADERS: Bryan Brinkman, Todd Dunavant, Tim Schroeder
BUSINESS MANAGER: Randy Scheers
ULTRA BOARD: Bruce Harper, Don Moody, Eric Thobaben, Markus Kässbohrer, Mike Crowe, Jim Sparks.

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1. The defender cannot always know which hexes the attacker will strike. The defender may fly his air to bolster ground units in one hex, and then find that the attacker does something completely unexpected – and unopposed – against a different hex.
2. Even when he can deduce the target hex or hexes and flies his defensive air support accordingly, the defender cannot always be sure that any of his air units will survive interception air combat and affect the ground combat odds.
3. Successful defensive air support may shift the ground combat odds so that the attacker can't be sure that he'll succeed in his attack – especially if the odds drop to 1:1.



Counterair

Wise attackers like to minimize uncertainties; they'll prefer to mount counterair missions during the movement phase rather than hold air units in reserve to intercept defensive air support. If all the defender's available air units have been neutralized before ground operations begin, the attacker can move his ground units and fly ground support so as to create the optimal ground combat odds. Hexes that must be taken can be attacked at 3:1 odds (or, with a Combat Training Level of two, at 2.5:1). Success is guaranteed, although dice fortunes still may cause losses to the attacker. Should the defender base air units within flight range of his own units but beyond the range of any potential air bases of the attacker, the counterair option will not be available to the attacker.

Interception

The "second best" method of negating a defender's defensive air support is for the attacker to hold some number of his air units out of battle. If the defender flies his air then the attacker will fly his own air to

intercept, in the hope of stopping the defender's defensive air support and maintaining favorable odds for his ground attacks.

Chaos can take over the battlefield if the attacker holds some air in reserve, but not enough to ensure that he can neutralize all of the air flown by the defender. The attacker may then elect to intercept and block only some of the air, ensuring success for some attacks but leaving the rest alone – and eating any resulting reduction of attack odds or skipping a ground attack altogether. Or he may intercept all the defensive air support with inferior forces, hoping to maintain acceptable combat odds (albeit with higher air losses).

As detailed later in this issue, the Air Combat Table itself always produces uncertainties of its own. Air combat is often not a sure thing. Therefore the attacker would prefer to resolve these uncertainties during the movement phase if and when possible.

Tanks vs. Planes

The attacker has a third alternative: leave the defensive air support to the army ground forces and their internal anti-aircraft forces. Many defenders have suffered a rude awakening after proudly flying defensive air support to reduce ground attack odds to 1:1 or even 1:2, only to find that their steely-nerved opponent attacks anyway. Since armor and infantry are rebuilt more cheaply than air, an attacker may prefer to trade ground units for the defender's air units. A WORLD AT WAR player will appreciate the irony when courageous ground attacks shatter the defender's air strength and collapse his position.

Conclusion

When a defender can deploy air units to fly defensive air support, uncertainties complicate life for an attacker. The threat of defensive air support may allow a defender to buy space and time – often just what the Allies need to survive the initial Axis onslaught, and what the Axis later need to prolong the game and achieve victory.

Defensive air support should not be flown recklessly. Interception by the attacker's air units will cause casualties and may make defensive air support a meaningless gesture. The defender may also fall victim to "success" if the attacker makes ground attacks aimed at eliminating the defending air units.

Airspace above the game map can be complicated!

VICTORY THROUGH AIR POWER

Air Combat

by Dave Hanson

Alexander de Seversky wrote a 1942 book titled "Victory Through Air Power". The following year Walt Disney turned the book into a movie. But Bruce Harper designed the Air Combat Table, and wrote the Air Nationality Dice Roll Modifier rules. Bruce gives us the ways by which Seversky's means can yield our desired A WORLD AT WAR strategic end: victory!



The Air Combat Table

In A WORLD AT WAR, air combat occurs when army air operating either as factors (AAF) or squadrons (AAS), or naval air squadrons (NAS), or both, meet and compete. Each side rolls two dice; the dice result applied to the Air Combat Table determines the battle outcome. Players check the row(s) corresponding to the number of factors or squadrons involved. Possible dice results range from 2 (two "1s" rolled) to 12 (two "6s" rolled). Higher dice rolls produce higher totals of "kill" and "abort" results against your opponent than do lower rolls; more AAF will produce higher totals of "kill" and "abort" results than fewer AAF. In the same manner, favorable combat modifiers tend to inflict higher casualties on the opponent and reduce friendly losses.

The critically important Air Combat Table is set out below. Every A WORLD AT WAR player should memorize it! I'm just kidding – but the Air Combat Table plays such an important role in the game that it deserves careful examination. Players will do well to

bear in mind some of the quirks of the table.

Air Combat Table - 19.2											
AF AS	Dice Roll										
	2	3	4	5	6	7	8	9	10	11	12+
1	0	0	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3
2	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2
3	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4
4	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4
5	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4
6	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5
7	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6
8	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5
9	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6
10	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6	5/7
11	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6	5/7	6/6
12	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6	5/7	6/6	6/7
13	3/4	3/5	4/4	4/5	4/6	5/5	5/6	5/7	6/6	6/7	6/8
14	3/5	4/4	4/5	4/6	5/5	5/6	5/7	6/6	6/7	6/8	7/7
15	4/4	4/5	4/6	5/5	5/6	5/7	6/6	6/7	6/8	7/7	7/8
16	4/5	4/6	5/5	5/6	5/7	6/6	6/7	6/8	7/7	7/8	7/9
17	4/6	5/5	5/6	5/7	6/6	6/7	6/8	7/7	7/8	7/9	8/8
18	5/5	5/6	5/7	6/6	6/7	6/8	7/7	7/8	7/9	8/8	8/9
19	5/6	5/7	6/6	6/7	6/8	7/7	7/8	7/9	8/8	8/9	8/10
20	5/7	6/6	6/7	6/8	7/7	7/8	7/9	8/8	8/9	8/10	9/9
Modifiers - Air Combat											
+/#	Air Nationality DRM										
+/-1	for each jet factor or three jet squadrons engaged										
+/-1	combat involving CAP										
+/-1	each radar research result achieved by the defender (air combat arising from strategic bombing only)										
If more than 20 air factors engage in combat, the result is determined by consulting the "20" row and whatever other row is required to equal the total number of air factors engaged. The dice roll is not modified by the number of air factors over 20.											
Results: The number before the slash is the number of enemy air factors which are eliminated. The number after the slash is the number of enemy air factors which are forced to abort.											

Even a single factor or squadron enjoys a fair prospect of achieving a useful result. A "6" result on the first row eliminates a single opposing air factor or squadron, while a "4" neutralizes the opponent. Results of "8" or more on the first row of the table above will allow a single contender to eliminate one opposing air factor or squadron while also aborting

one or more. The third row of the table reveals that if you want to guarantee elimination of at least one enemy air factor or squadron, then fly at least three of your own against that enemy.

Air Combat Table Structural Quirks

1. The “Stair-step effect”.

Each row on the table increases the maximum possible score of “kill” and “abort” combat results; most rows also increase the minimum score.

2. The “Slow walk 1”.

The first row can eliminate only a single enemy factor or squadron. A “kill” occurs on seven dice rolls, from “6” and above. On each of the second and third rows, of 11 possible results, eight eliminate exactly one enemy air factor or squadron. The fourth row produces a single “kill” on dice rolls up through “7”. “Abort” possibilities do increase significantly through the Slow Walk passage. Low-level air combat can make good tactical sense if you want your attack to control the airspace above your battlefield for your turn, rather than pile up enemy dead units in his force pool.

AF AS	Dice Roll										
	2	3	4	5	6	7	8	9	10	11	12+
1	0	0	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3
2	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2
3	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4
4	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4
5	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4
6	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5
7	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6
8	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5

Results shaded in yellow eliminate one opposing air factor or squadron.

3. The “5 speed shift”.

Combat effects accelerate past the fifth row of the table. Two “kills” start at “12” on the second row, at “10” on the third row, then down to “8” on the fourth row and finally to “6” on the fifth row. But after the fifth row the increase occurs every row: on the sixth row two enemy units are eliminated with a “5” result, on the seventh row at a “4”, and so on.

AF AS	Dice Roll										
	2	3	4	5	6	7	8	9	10	11	12+
1	0	0	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3
2	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2
3	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4
4	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4
5	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4
6	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5
7	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6
8	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5

Results shaded in orange eliminate two opposing air factors or squadrons.

4. The “V8 Power”.

After the eighth row, we see the “Stair Step” take on a predictable three-factor/squadron spread for the remainder of the table. For every three dice roll increases, all “kill” and “abort” results increase by one.

5. The “Law of Diminishing Returns.”

Steady V8 increase in air combat power reveals a declining relationship. Simply increasing the number of air units attacking does not eliminate anywhere close to that same number of enemy units. Even adding abort results to the number of eliminated enemy air units won’t produce enemy losses much in excess of your attacking factors (and on the higher rows of the table, casualties inflicted won’t even match the size of the attacking force).

The diminishing effect of additional attacking air units is clearly seen when we compare the results for maximum dice rolls (“12” results) for different rows. On the first row, a “12” result eliminates one enemy air factor or squadron; on the second row a “12” result eliminates two enemy air factors or squadrons. But from that point on, *no* row allows you to eliminate the same number of air units you commit. Up to the thirteenth row, a “12” result eliminates and aborts more enemy air units than you commit; for the fourteenth to sixteenth rows, a “12” result eliminates and aborts the same number of attacking air units; and for higher row fewer enemy air units are eliminated and aborted than are used by the attacker.

For reasons of playability, after the twentieth row you go back to the top of the table, so the twenty-first attacking air factor or squadron is actually more effective than the twentieth. Air battles of this size are

rare and so need no further attention. They most commonly occur when army air is fighting as squadrons. For example, seven army air factors convert to 21 squadrons when NAS are involved.

Modifiers

There is more to air combat than just the number of air factors or squadrons employed by each side. Modifiers applying to air combat significantly increase the likelihood of success against enemy air units, because modifiers increase your air combat dice rolls and decrease your opponent's.

The modifiers are set out in the Air Combat Table:

Modifiers - Air Combat

+/-#	Air Nationality DRM
+/-1	for each jet factor or three jet squadrons engaged
+/-1	combat involving CAP
+/-1	each radar research result achieved by the defender (air combat arising from strategic bombing only)

Air Nationality DRM

Improving the quality of your alliance faction's air units provides your most effective edge in air combat. The "Air Nationality Dice Roll Modifier" represents institutional teaching and assimilation of new combat tactics, quickened air unit turnaround times, major ordnance improvements, new generations of aircraft, and the like. Of course Air Nationality DRM research is expensive in terms of money, or "research points" (RPs). The Reich Air Ministry, War Production Board, or Five Year Plan administrators must fully support your goals for air force improvements!

Here are some useful rules of thumb for researching Air Nationality DRMs:

1. Obtain as many general air research and/or radar results as your current air nationality level before you start rolling for the next level. This offsets the -1 modifier for each existing air nationality level.

2. Investing one RP per year will usually take at least three years to produce an Air Nationality DRM increase.

3. For faster results use "fat stacks" of RPs in Air Nationality DRM research. The drawback to this approach is that it starves other projects of RPs.

Usually Air Nationality DRM increases occur during the mid-game, around 1942, but can happen earlier with heavier investments of RPs and good research rolls. I've seen fat-stacked Air Nationality DRM research yield an increase for the Axis in 1940.

During the course of a full AWAW game every alliance faction except possibly Japan will usually assign RPs to this project at some point.

The European Axis will likely will go for this project in most games, usually in mid-game to stay abreast of the Western Allies. The German air nationality level will increase to three and Italy's will increase to two.

The Western Allies start with an air nationality of two, almost always climb to at least level three, and possibly higher, because of radar results and the feasibility of late-game research point fat-stacks.

Russia is also likely to get at least one air nationality level hike. Russia starts with an air nationality of one, and needs to match the German starting level of two.

Japan would love an air nationality level increase; an increase lets Japan stay competitive with the U.S. air into 1943, especially when flying Combat Air Patrol (see below) and facing 1944 bombing. But Japan starts with an air nationality of two, and has trouble affording expensive research without foregoing other needs.



Jets

Another desirable Air Combat Table modifier appears when an alliance faction fields its first jet aircraft. Usually Germany wins the honors in jets, although the Western Allies might try for a jet program since it costs them only one RP. Russia (once in a great while) and Japan (almost never) also may seek jet technology. Any faction pursuing jets must first achieve several air general breakthroughs to have a reasonable prospect of success. Even then, 1944 is the most likely year that Germany gets jets (thanks to prewar research). Other factions likely won't get jets until 1945, and by then won't see much return on the investment even if achieved.

For each jet used in air combat, a favorable +/-1 modifier is gained. Jets also count as three factors rather than one, giving an additional advantage.

Combat Air Patrol

Carrier-based NAS flying combat air patrol over a naval force enjoy a favorable +/-1 modifier against enemy air units attacking that naval force. This modifier applies against both attacking carrier-based naval air squadrons and land-based air.

Radar

Whenever air units oppose enemy bombing and the defender has achieved a radar research result, the defender receives a favorable +/-1 modifier against bombing enemy air units. Radar results yield other advantages, including improving the prospects for Air and Naval Nationality DRM increases, but directly affect air combat against enemy bombers (including AAF used to escort and bomb).

More esoterically, radar also helps defend against flying bombs, although the Air Combat Table is not used to resolve such attacks.

Air Modifiers in Action

A WORLD AT WAR players tend to obsess on air combat modifiers, but just how important are they, especially in relation to the actual numbers of air factors or squadrons engaged in battle? As Stalin pointed out, “quantity has a quality all its own”.

Turning once again to the Air Combat Table, from a “0” result to a “1/3” result, the air combat results are paired, increasing with every second result. Once a “2/2” result is reached, every subsequent result is higher. The division is indicated by the heavy line:

AF AS	Dice Roll										
	2	3	4	5	6	7	8	9	10	11	12+
1	0	0	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3
2	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2
3	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4
4	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4
5	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4
6	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5
7	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6
8	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5
9	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6
10	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6	5/7

This means that, from the attacker’s point of view,

where one air factor or squadron is engaged, a better result is obtained only when the die roll is 3, 5, 7, 9 or 11. Such die rolls come up exactly half the time. So a +1 air combat DRM improves the attacker’s result 50% of the time, in rolls where one air factor or squadron engages. The modifier also reduces the defender’s result. But attacker abort results are irrelevant to the defender. If the defender also had only one air factor or squadron engaged then his roll result changes (worsens) only if he rolls a 6 (a 5/36 chance, which is about 14%) where -1 combat DRM means the defender fails to kill an attacker.

If each side has two factors or squadrons engaged, the effect of a +1 air combat modifier is identical for the attacker (because the results shift in pairs), and the defender’s result is affected only when he rolls a 4 (a 3/36 chance) and a 12 (a 1/36 chance), so the chances of the defender’s result being reduced is even smaller.

At higher levels, the effect of a favorable air combat modifier increases – on the third row, the attacker will get a better result 21/36 times (77%). This effect continues until, by the time you reach the eighth row, a +1 air combat modifier gives the attacker a better result 35/36 times.

Bear in mind that this analysis overstates the effect on the attacker’s dice roll if all that matters is the number of defending air factors or squadrons which are eliminated, because then abort results are unimportant. This is often the case in counterair attacks (where the defender will give up the fight after the first round regardless of the result), but not in air combat between naval air squadrons flying combat air patrol and air squadrons attacking their naval force (where abort results may be very important).



This effect is more easily seen in the following graphic, which indicates which air combat results see improvement when the attacker gains a +1 air combat modifier. Green results are better because of an

increase in the number of abort results; yellow results are those where an additional defender is actually eliminated:

AF AS	Dice Roll											
	2	3	4	5	6	7	8	9	10	11	12+	
1	0	0	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3
2	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	1/3	2/2
3	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/3	2/4
4	1/1	1/1	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/4
5	1/2	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/4
6	1/2	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/5
7	1/3	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	4/6
8	1/3	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/5
9	2/2	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6	5/6
10	2/3	2/4	3/3	3/4	3/5	4/4	4/5	4/6	5/5	5/6	5/7	5/7

This analysis of the first ten rows of the Air Combat Table (air combat involving up to ten attacking air factors or squadrons) reveals some interesting facts.

The effect of a favorable air combat modifier on the attacker's "kill" results increases as the air battles get bigger, until five or six attackers are involved, then the effects more or less level off. The chart below show prospects of eliminating an additional enemy air factor or squadron because of a favorable air combat modifier: the top row is the number of attacking air factor or squadrons, and the bottom row is the number of die rolls out of 36 where the modifier eliminates an additional defender:

AF/AS	1	2	3	4	5	6	7	8	9	10
#/36	4	4	4	9	11	12	11	12	12	11

Once the effect of a +1 air combat modifier levels off, the modifier will eliminate an additional defending air factor or squadron about one-third of the time. If we confine ourselves to air factors, which are worth three BRPs each, that means that, on average, a +1 air combat modifier will cost the defender about one BRP every time air combat occurs (although the effects will be less if the air battles involve only small forces). Similarly, since the attacker only cares about losses, as opposed to aborts, a favorable air combat modifier will save the attacker about one BRP every time air combat occurs. The BRP effects where naval air squadrons are involved will of course be less,

because NAS cost only one BRP each.

As mentioned earlier, the attacker is concerned with his own losses, but not his own aborts. Defender abort results, however, can prove valuable. Depending upon the situation, a player may need a counterair attack to completely neutralize an enemy air unit. And air combat abort results usually matter against bombers and against air units attacking a naval force ("usually" because sometimes the target can take care of itself, shooting down whatever attacking air units get through the defending air).

When aborts do matter, effects of a favorable air combat modifier are greater (the cells shaded in green matter as well). It is comforting to know that our intuitive feeling that air combat modifiers are important is right, although when aborts are ignored they are not as important as many players think.

Keep in mind as well that air combat modifiers apply in each round of air combat, so if the players slug it out, the effect of a favorable air combat modifier becomes increasingly important.



Conclusion

Most A WORLD AT WAR players instinctively know that the more planes you have and the better they are, the happier you'll be. The Air Combat Table hasn't misled us. I think it helps to look carefully at the Air Combat Table in order to understand its structure, but experienced players will do well to follow their gut feeling.

For example, it doesn't take mathematical analysis to confirm that the first round of air combat is critically important, because eliminating one or more additional enemy air factors or squadrons will likely affect all the subsequent rounds of air combat.

And when all is said and done, the better you roll, the better you'll do!

STRATEGIC BOMBING

Nowhere to Hide

by Kevin Milne

One of the more effective ways of reducing an enemy country's resources is through strategic bombing. Bombers seek to destroy your opponent's economy by ripping it apart bit by bit. While submarines destroy and disrupt transports, bombers directly attack an enemy major power's economy by either eliminating BRPs immediately or by forcing the enemy to incur air losses in order to defend against bombing.



Bombing Results

There are three components to the BRP losses inflicted by strategic bombing.

The first is the SW Combat result obtained by whatever strategic bombers reach their target. The attacker rolls two dice and consults the SW Combat Table, then applies rules 24.631B and 24.632B:

24.631 “#” - ATTACKER'S RESULT:

...

B. BOMBERS: The defender loses three BRPs from the bombing target for each number before the “/”.

24.632 “/” - ATTACKER'S RESULT:

...

B. BOMBERS: The defender loses one BRP from the bombing target for each number after the “/”.

In addition, bombers inflict additional losses if they have a favorable SW combat modifier (24.65A) and for each strategic bomber factor which reaches the

target (unless offset by the defender's favorable SW combat modifier – 24.65B):

24.65 ADDITIONAL LOSSES FROM BOMBING: In addition to the losses from the bomber SW combat result:

A. FAVORABLE BOMBER SW MODIFIERS: Three additional BRPs are eliminated for each net SW combat modifier favoring the attacker. These additional losses are unaffected by the defender's SW combat result (a plus modifier for bombers always eliminates three additional BRPs).

B. BOMBERS REACHING THE TARGET: Three additional BRPs are eliminated for each bomber factor unaffected by the defender's SW combat result (these bombers are considered to have reached the target). These additional losses are reduced by three BRPs for each net SW combat modifier favoring the defender.

At first blush, bombers do not impact the defender's construction limit to the same extent as submarines, because sunken transports must be rebuilt in later turns. However, if bombers have a favorable SW combat modifier they can be very effective. The defender may have no real option other than to commit air resources in an effort to prevent the bombers from getting through. This leads to air combat which will result in losses for both sides, but often puts a greater strain on the defender's construction limit.

With this in mind, let's first turn to the air battles over the bombing targets.

Defending Against Bombing

Despite the dire predictions made before the war that the “bomber will always get through”, improvements in single-engine fighter performance and the development of radar cast serious doubt on this view. The course of the war showed that an integrated air defense system could inflict such high losses on bombers that the cost to the attacker was just too great.

Sometimes, at least

“The bomber will always get through.”

British Prime Minister Stanley Baldwin, November 1932

Air Combat

Once air units are assigned to defense against strategic bombing as set out in rule 26.44, a single round of air combat is fought between the defenders and an equivalent number of bombing factors:

26.451 AIR COMBAT RESOLVED FOR EACH STRATEGIC BOMBER FORCE: Once the defender has allocated his defending air units to each strategic bombing target, one round of air combat is resolved for each strategic bombing force. [...] Air combat between strategic bomber forces and defending air units is resolved using the Air Combat Table (19.2), with the contending air combat strengths being calculated as follows:

A. DEFENDER'S AIR COMBAT STRENGTH: The total number of defending air factors attacking the strategic bomber force.

B. ATTACKER'S AIR COMBAT STRENGTH: A number of air factors equal to the number of defending air factors which are attacking the strategic bomber force. If there are more defending air factors than there are air factors in the strategic bomber force, all the air units in the strategic bomber force engage in air combat. The attacker's air combat strength thus may not exceed that of the defender (EXCEPTION: Jets - 26.452).

Rule 26.451B is very important – it means that the defender gets to determine the level of air combat. He may engage the attacking force with anywhere from a single air factor up to whatever force he has available. Subject to the need to minimize the effects of bombing and the vicissitudes of air combat, this allows the defender to control his losses. However, it is often important for the defender to minimize the number of bombers that reach their target. With only one round of air combat to fight, the defender may need to assign a relatively large number of air factors to intercept the bombers, so he can reduce bombing damage to manageable levels.

The defender sees his problems compounded by the fact that air combat losses are distributed over the entire attacking force, which can consist of as many as five different types of units:

26.454 AIR COMBAT LOSSES: Air combat losses for both sides are allocated according to 19.6 [...] Escorting AAF, AAF acting as bombers, strategic bombers, escorting interceptors and escorting jets are treated as separate categories when assigning losses to the attacker's force. [...]

From the attacker's point of view it is useful to have diverse escorting forces. "Diversity" will spread out the effects of the defender's air combat result and minimize losses to the valuable bombers, which are the only factors that need to reach the target intact.

The Defender's Conundrum

A strong bombing campaign can put the defender on the horns of a dilemma. If the defender fails to

commit "enough" air units then the bombers will get through the defending air and reach their targets, thereby inflicting BRP losses and shrinking the defender's construction limit. (This construction limit effect is usually the more important consequence of the Western Allied bombing of Germany and Japan late in the game, but may also seriously hurt Britain during 1940-41.) If the defender commits more air units, however, the air combat levels and hence his air losses will increase. Every army air factor (AAF) or interceptor that needs to be rebuilt effectively reduces the defender's construction limit by three BRPs. Air attrition can thus be even more significant than the bombing damage itself. For the defender, a delicate balancing act is required, where the risk of increased bombing damage must be weighed against the need to preserve his air units.

Bombing

Bombing is also effective against two other types of units: German synthetic oil plants and rocket bases. For both these targets, bombing provides the only way to eliminate the targets other than taking their hex. This is especially true for synthetic oil plants, which will be placed deep within German territory and can only be reached at the very end of the game.

Synthetic Oil Plants

To ensure the destruction of an oil plant the attacker needs to do at least 20 BRPs of damage to the hex it contains, generally in one turn as it will likely be repaired if only damaged.

26.72 EFFECTS ON INDUSTRIAL FACILITIES: In addition to any BRP losses inflicted by strategic bombing, damage may be inflicted on industrial facilities in the target hex, as follows:

A. For every 10 BRPs of strategic bombing losses to the target hex, the attacker may assign a damage marker to an oil center or synthetic oil plant in the target hex.

...

D. Strategic bombing losses of less than 10 BRPs also permit the assignment of a damage marker on an industrial facility in the target hex unless the defender immediately deducts that many BRPs from the defender's BRP level [...]

...

26.73 DESTRUCTION OF INDUSTRIAL FACILITIES: A damaged synthetic oil plant is destroyed if a second damage marker is assigned to it. This may occur in one turn, as a result of heavy strategic bombing losses, or over several turns, if damage incurred in a previous turn is not repaired.

This is not an easy feat to accomplish, especially since Germany's synthetic oil plants are likely to be

deep within the Reich, out of Western Allied AAF range. Fortunately, lesser bombing effects can disrupt oil production as well. Just 10 BRPs of bombing damage will shut down an oil plant for a turn, while less than 10 BRPs of bombing damage will require the defender to immediately pay the resulting BRP penalty in order avoid damage to the target.

Because damage to oil plants is in addition to normal bombing damage, bombers are effectively “doubling up” their effect by targeting synthetic oil plants, although unfortunately for the Allies (but fortunately for Germany) this does not double the effect on the German construction level.

Diplomatic Effects

Large bombing campaigns also have a diplomatic impact through the creation of firestorms.

26.9 FIRESTORMS:



26.91 CREATION: A firestorm occurs in any eligible hex (26.92A) which sustains at least 25 BRPs of strategic bombing damage in one turn, although the actual number of BRPs lost is limited to the economic value of the hex (26.71A).

26.92 RESTRICTIONS:

A. Firestorms may only be created in German, Japanese and British cities and in Russian cities which contain ICs, Vladivostok and Irkutsk.

26.93 EFFECTS: If a firestorm occurs, a firestorm marker is placed on the hex, and the following political and diplomatic effects are triggered:

A. The surrender or resistance level of the target major power is permanently reduced by one.

B. The attacker receives one additional DP in the next YSS.

Firestorms reduce the defender’s resistance level by one. They also increase the creating major power’s DP total by one in the next YSS. Firestorms generally occur only if the defender is surprised or after a bombing campaign has eliminated defending air, such as when overwhelming Western Allied bomber forces level German and Japanese cities in late 1944 and 1945. However, it is possible that during the Battle of Britain that Germany is able to firestorm one of Britain’s key economic areas, especially if Germany decides to pursue strategic bombers as part of an anti-British strategy.

Research

Research plays a key role in the various bombing campaigns that may occur in the game. Through research both the attacker and the defender generate the modifiers which determine bombing effectiveness.

The “Victory Through Air Power” article

discussed modifiers affecting bomber-related air combat: Air Nationality DRMs, jets, and the defender’s radar results.

The modifiers for strategic bombing itself are set out in the Strategic Warfare Combat Modifiers Table:

<i>Strategic bombing</i>	
Strategic bomber v. bombing targets:	
+1	for each attacker strategic bomber research result beyond that needed to construct strategic bombers
+1	for every eight (Europe) or four (Pacific) hexes of excess bombing range
-#	defender’s air defense research level

Strategic Bombers

(European Axis, Western Allies, Russia, Japan)

The Western Allies begin with a “9+” result.

Results:

1-2	No effect.
3-4	[+1]
5	[+2]
6	[+3]
7	[+4]
8	[+5]
9+	Strategic bombers may be constructed. For each subsequent “9+” result for strategic bombers, friendly bomber SW combat dice rolls receive a favorable +/-1 DRM.

Strategic bomber research is less “friendly” than many other research projects, making it less likely that an investment of a single RP into the project will generate favorable modifiers for a subsequent year. This makes it more difficult to obtain a successful strategic bomber research result. As a result, the Western Allies have an advantage when it comes to RP-intensive strategic bomber research, quite apart from the fact that they begin the game with one result.

The first strategic bomber research result allows an alliance faction to produce strategic bombers, while each additional strategic bomber research result generates a favorable +1/-1 modifier for bombing, which also increases bombing damage if the net bombing modifier is positive.

Air Range

(Germany, Western Allies, Russia, Japan)

Air range is a high technology project. Only one RP may be allocated in the first year in which research is done, two RPs in the next year in which research is done, and so on.

Japan begins with a result of “7” [+5]. The Western Allies begin with a result of “5” [+3].

Modifiers:

-# For the air range of the rolling alliance faction (-1 for one air range result; -2 for two air range results; and so on).

Results:

1-2 No effect.
 3 [+1]
 4 [+2]
 5 [+3]
 6 [+4]
 7 [+5]
 8 [+6]
 9 [+7]
 10+ Air ranges for strategic bombers and escorting interceptors are increased (see Air Range Effects Table for details).

Air range is also an important area to research for a bombing campaign. Excess air range generates a positive bombing modifier, subject to the important restriction in 24.461B:

26.461B. SW COMBAT MODIFIERS: The strategic bomber and target SW combat dice rolls are subject to the following modifiers. The modifier for excess air range is limited by the number of strategic bomber research results achieved by the bombing alliance faction (one strategic bomber result limits the excess air range modifier to +1; two strategic bomber results limit the excess air range modifier to +2; and so on). The initial Western Allies strategic bombing result counts towards this limit. Positive modifiers favor the bombers:

Air range increases also allow strategic bombers to strike vulnerable targets: key economic areas or oil fields the defender leaves uncovered by map-based air units.

Air Defense

(European Axis, Western Allies, Russia, Japan)

Results:

1-2 No effect.
 3 [+1]
 4 [+2]
 5 [+3]
 6 [+4]
 7+ The defender's air defense level is increased by one against air attacks (23.42); the defender's SW combat dice roll is increased by one against strategic bombing (26.461B); each flying bomb salvo effect is reduced by one (26.661A).

From the defender's point of view, air defense research is economical in terms of both RPs and BRPs. Air defense results are relatively quickly achieved, and it also improves naval units' defense against air attack. Most games see the European Axis, the Western Allies, and Japan each obtain at least one air defense research result. A German player who is convinced that he will always be able to turn back the Western Allied bombers need not bother with air defense research, but the consequences may be dire if this confidence turns out to be misplaced.

Jets

(Germany, Britain, U.S., Russia, Japan)

Jets are a high technology project. Only one RP may be allocated in the first year in which research is done, two RPs in the next year in which research is done, and so on.

Restrictions

The European Axis may not allocate RPs to jets until 1943. The Western Allies, Russia and Japan may not allocate RPs to jets until the 1944 YSS.

Results:

1-3 *Project cancelled.
 4-5 No effect
 6-7 [+1]
 8 [+2]
 9 One jet factor may be built. Jets have a range of two hexes in Europe and one hex in the Pacific. [+3]
 10 Two jet factors may be built. [+4]
 11 Three jet factors may be built. Jet range improves to three hexes in Europe and two hexes in the Pacific. [+5]
 12+ *Four jet factors may be built. Jets achieve their full range of four hexes in Europe and three hexes in the Pacific.

Explanation:

After a successful result, jet factors are added to successful alliance faction's force pool at no additional RP cost at the rate of one factor per turn.

Jets offer a good way to minimize air losses against bombing. These incredible air units cost the same as AAF. But they count as three AAF each when engaging enemy air units *and also* provide a +1 Air Nationality DRM for any air battle in which they participate. Jets fight like three AAF, but count as single factors when determining how many factors of the bombing force must take part in air combat.

Germany holds the best chance of getting jets because it can first roll for them in 1943, while the other alliance factions may not allocate RPs to jets until 1944. It is not impossible for Japan to get jets in 1945 as a last ditch effort at preserving whatever is left of the Japanese air force and stopping American atomic attacks. However, because jets are highly dependent on the number of air breakthroughs achieved as well as the luck of the research roll itself, it is often not possible to get enough jets to stop the Western Allied bombing campaigns.

Flak

Strictly speaking, flak is not a research project, as it is created by investing RPs in military production. Each flak factor increases the defense level of the target, which nearly guarantees a better Strategic Warfare Combat result:

Strategic Warfare Combat Table - 24.62

SW Fac	Dice Roll										
	2	3	4	5	6	7	8	9	10	11	12+
1	0	0	0	0	0	0	0	0/1	0/1	0/2	1/1
2	0	0	0	0	0/1	0/1	0/1	0/2	0/2	1/1	1/2
3	0	0	0/1	0/1	0/2	0/2	0/2	1/1	1/1	1/2	1/3
4	0	0/1	0/2	0/2	1/1	1/1	1/1	1/2	1/2	1/3	1/4
5	0/1	0/2	1/1	1/1	1/2	1/2	1/2	1/3	1/3	1/4	1/5
6	0/2	1/1	1/2	1/2	1/3	1/3	1/3	1/4	1/4	1/5	1/6
7	1/1	1/2	1/3	1/3	1/4	1/4	1/4	1/5	1/5	1/6	2/5
8	1/2	1/3	1/4	1/4	1/5	1/5	1/5	1/6	1/6	2/5	2/6
9	1/3	1/4	1/5	1/5	1/6	1/6	1/6	2/5	2/5	2/6	2/7
10	1/4	1/5	1/6	1/6	2/5	2/5	2/5	2/6	2/6	2/7	2/8

Flak has several advantages. Once the initial RPs and BRPs are invested to create flak, it will usually never have to be rebuilt. (Flak is eliminated if its hex comes under enemy control, but is not vulnerable to bombing). Flak can be very effective when concentrated in one target – stacking a number of flak factors in an important hex can protect synthetic oil plants in that hex and also make it more difficult to conduct an atomic attack against the hex.

However, flak is easy to circumvent if less well-protected targets are available. In addition, any flak will necessarily be produced and built at the expense of ground units; flak production is very much a question of priorities.

The Bombing Campaigns

With the above considerations in mind, let's take a look at the role bombing may play in the strategies pursued by each alliance faction.

The Western Allies

The Western Allies, because of their advantages in economic strength, research, and production, enjoy prospects for the most effective bombing campaign available in the game, by far. Generally speaking, the Western Allies start bombing in 1942 and will not stop until an Allied flag flies over Berlin. Heavy damage to the British economy in 1940-41 from submarines, raiders, and perhaps German bombing may limit British participation in some turns, but the inexhaustible capacity of the U.S. to rebuild units encourages the use of American air forces every turn. By mid-1943, the Germans can expect a relentless Western Allied strategic bombing campaign.

What to bomb in Europe?

Assuming Britain isn't invaded and conquered, the Western Allies have one hex (K25: Great Yarmouth) within range of the German key economic areas in the Ruhr. An airbase allows the Western Allies to base 10 AAF in K25, which permits a mix of seven escorting AAF and three bombing AAF. Often it is worth using AAF to bomb Germany, despite the BRP cost for their offensive, unless they have more pressing tactical uses elsewhere (in which case the strategic bombers and escorting interceptors have to fly alone).

Once they achieve their first air range research result (usually in 1940), the Western Allies possess options as to bombing targets. They can send strategic bombers 'on their own' to Berlin, or pile up AAF to make heavier attacks against the Ruhr. On a turn-by-turn basis the Allied player decides tradeoffs between increased BRP damage and disruption to the synthetic oil plants (which will almost certainly not be in the Ruhr, at least until the Germans build two more).

For sake of effectiveness, Britain and the United States usually should bomb different targets. Otherwise Rule 26.451 allows the German air units surviving air combat against the first Western Allied bombing force to engage the second Western Allied force. It's almost always better to target two different hexes – unless the Allied player has other goals in mind, such as: 1) triggering a firestorm to reduce German resistance levels near the end of a game; or 2) trying to sucker the Luftwaffe into as many fights as possible, to whittle it to nothing.

Pacific Bombing

The U.S. may not produce Pacific bombers until 1944, and the Western Allies are extremely unlikely to have air bases within AAF range of Japan before then. (If they do, Japan has a lot more to worry about than bombing!). This means the Western Allies cannot get their bombing campaign going until 1944 at the earliest, and it's often ineffective until the U.S. produces more Pacific bombers in Spring 1945.

The Pacific bombing campaign is fairly straightforward. It depends on the strength of each player's position in the Pacific. The U.S. should always produce Pacific bombers, both for their ability to firestorm several key Japanese cities, and to drop the atomic bomb if that becomes necessary to force a Japanese surrender. In any case, by 1944 and 1945 the Western Allies have a lot of RPs and not so many places to use them.

Germany

German bombing is a relatively common occurrence in the turns between the fall of France and the attack on Russia. Germany commonly bombs Britain in Fall and Winter 1940, but often must use Spring 1941 as a recuperation period in order to get all its air and armor units (including units produced in 1941) built for Barbarossa.

Bombing Britain goes a long way toward ensuring Britain's meekness in 1940 and 1941. A financially broken Britain won't make many counterattacks in the Mediterranean or elsewhere. And the British need to stay solvent forces the U.S. to donate BRPs to Britain.

German players addicted to Battles of Britain can continue bombing for an extra six turns if they wish, at the expense of foregoing the attack on Russia. This strategy is often combined with a research strategy focused on researching and producing German strategic bombers. This will almost certainly leave Britain totally reliant on American BRP grants to keep them afloat. See the Fall 2006 issue of ULTRA, which discussed this strategy in detail.

The other benefit to producing German strategic bombers is that they may be used against Russia. They have the advantage of operating from anywhere on the eastern front. Russia cannot cover all of its ICs with AAF. German bombers may force Russia to produce interceptors – which are of no use if and when Russia starts pushing the Germans westward. Should the Germans delay revealing their strategic bomber program until Summer 1941, the Russians may be caught by surprise and find that they are a step behind Germany in the strategic bomber-interceptor race.

Disadvantages of any German strategic bomber plan include 1) the very large RP investment required, and 2) the relative uselessness of bombers after the initiative shifts and Germany goes on the defensive.

Japan

Japanese players are allowed to research strategic bombers. But RP shortages make the project both enormously expensive and very difficult to deploy within a meaningful time frame. And if the Japanese succeed, then who would they bomb? Legal targets are China, Russia, India and Australia. But none of these campaigns is likely to win the war. And none directly affect Japan's primary adversary. Japanese propaganda notwithstanding, Japan cannot bomb New York and force the Americans to come to terms!



Japanese bombing therefore tends to use AAF. Bombing China can push the Nationalists over the edge, but more often doesn't accomplish much; the losses can be covered by Western Allied BRP grants. Plus there are BRP and opportunity costs to using AAF for this purpose. Japan may also sometimes use AAF to bomb the India or Australia box (assuming they can get close enough) to help stretch Britain's BRPs to the breaking point. But before committing resources to such a pro-German strategy, the Japanese should be sure it will help them!

Russia

While Russia can create strategic bombers, it diverts RPs from other projects. Fear of a German attack usually leaves such offensive weapons in the drawer in favor of more versatile AAF. If Germany commits early to an anti-British strategy, it may be possible for Russia to develop strategic bombers, although there are many other, usually more effective, ways for Russia to put pressure on Germany. Similarly, using Russian AAF to bomb German targets is rare.

Conclusion

Bombing constitutes an important part of certain strategies. Bombing is one of the first ways the Western Allies can take the fight to Germany. While German bombing can produce nasty surprises, both Germany and Japan usually do better to prepare for the inevitable Allied bombing campaign against them later in the war.

KAMIKAZES

Thunder Gods

by Greg Wilson

The kamikaze rules in *A WORLD AT WAR* are something not every player has had the joy of experiencing. Either they play only the European theater, or the war in the Pacific ends (one way or another) before reaching the point where the Japanese player would have a chance to use kamikazes. Any prospective Japanese player should review the rules in order to make sure they are aware of some of the special nuances of the kamikazes, although they will hopefully have several game years before it matters.



Invoking the Kamikaze Rule

The Japanese player may invoke the kamikaze rule at any point he wishes. However there are some ramifications to consider.

- It will no longer be possible to construct/rebuild lost NAS as the rebuilding rate will now be refocused to the production of kamikaze units. Empty carrier decks will remain empty for the rest of the game.
- All surviving elite NAS will be converted to regular Japanese naval air units. Without elite NAS (or an Air Nationality DRM increase), the Japanese cannot conduct a maximum carrier air strike with 12 air squadrons.

Neither of these considerations is very limiting in

the end game, as Japan is not likely to have many elite NAS (or carriers!) left. The Japanese player just needs to discern when they have reached the point where there is more to gain from creating kamikaze units than from continuing to rebuild NAS.

The most important consideration is that since kamikazes may only base in Japan, there is little point in creating them until the American player is in a position to threaten the Home Islands.

Converting Air to Kamikazes

Before you can construct kamikazes you need to create them by converting them from existing AAF or NAS at a rate of twice the Japanese naval air training rate. Many games see the Japanese Naval Air Training (NAT) rate increased to six or seven, with a resulting endgame dividend of an increased kamikaze conversion rate. For example, if the Japanese NAT rate is six, then you can initially create a pool of twelve kamikaze squadrons.

Each AAF can be converted into three kamikazes, while NAS is converted on a one-for-one basis.

Given the choice, the Japanese player is almost always going to want to convert AAF, rather than NAS, to kamikazes. In addition to NAS being able to fly from the few carriers that might remain, unbuilt AAF count against the Japanese resistance level while unbuilt NAS do not. What AAF the Japanese have left on the board in 1945 is likely to get zapped by roving American carrier patrols, so converting these AAF to kamikazes is one way to permanently remove their potential negative impact to the Japanese resistance level. Even if the Japanese player cannot afford to

Easy for you to say ...

“Today’s mission will not be an easy one! But brave and resolute action will scatter even devils. With your passionate spirit of martyrdom, you will be able to overcome any kind of difficulty! You will succeed! Keep this conviction strong in your minds!”

Commander Okamura speech to departing First Kamikaze Ohka Special Attack Unit (March 21, 1945)

build air units, it is certainly better to convert unbuilt AAF to kamikazes than to leave them as unbuilt AAF. If the kamikazes can actually be built, so much the better!

Kamikaze Basing

While kamikazes may only operate four hexes from Japan, they are similar to interceptors in that they are everywhere and nowhere. Kamikazes can fly from any city or airbase in Japan, but are not actually on the board and therefore cannot be countered by American carrier task forces (TFs). This will likely leave the kamikazes the only Japanese air units that can operate out of the Home Islands. All other air units based in Japan are vulnerable to American carrier TF patrols.



Spring 1945:
Japan defends against a U.S. invasion

“Use them to lose them!”

After building the initial kamikazes force pool to full size, the only way the kamikaze force pool can be increased is by attacking and losing all the available kamikazes in the initial pool. Once the Japanese have expended their initial crop of kamikaze units they not only get to double the size of their pool for the next turn, but the subsequent generations of kamikazes attack more effectively, obtaining a +1 modifier for each succeeding generation.

Given a chance to attack American ships, the Japanese player should normally pounce with his entire kamikaze force. Provided the Japanese have or can build the air units to convert to kamikazes, even a sole American submarine that defensively patrols a

little too close to Japan can be a target for Japan’s entire kamikaze force. That one attack allows the next turn’s kamikazes to perform even better. Apparently practice does make perfect, even for kamikazes.

Using Kamikazes

Usually the best time to attack with the kamikazes is when there is a chance of hitting an American combat group carrying invading ground units, especially marines. With enough hits on light ships in such a combat group, the Japanese may prevent or at least reduce the odds of the seaborne invasion. Another good opportunity is to try to disrupt the supply line to a captured Okinawa; this might buy Japan a turn if the Americans cannot use Okinawa as an operational base.

Unfortunately, though, kamikazes are at best an unpredictable weapon. As with submarine attacks you do not get to choose which ship you wish to attack; each surviving attacking kamikaze randomly selects its target. This means one ship might not be attacked, while another attracts a whole swarm of kamikazes and is sunk several times over.

The only choice the Japanese player gets to make is the combat group that his kamikazes attack, but even this ‘choice’ is likely to be a guess. The Japanese player rarely has the search dice and search results needed to pinpoint his best targets.

Each targeted combat group is limited to a total of 15 attacking kamikazes per naval combat round (or per hex outside of naval combat), and these 15 may have to fight through American air cover, combat air patrol, and air defense. But whatever kamikazes get through these obstacles may take out several ships. Each kamikaze squadron attacks as three squadrons on the Naval Attack Table. Damaging an American ship is good enough! When the turn counter sits anywhere in the column that says “1945” at its top, a damaged ship is effectively out of the war.

A common paradox found in A WORLD AT WAR therefore applies: kamikazes are a serious threat to the final American operations near and in Japan, but by the time they can be used, Japan is so weakened that it is difficult to maintain the threat. Perhaps not surprisingly, kamikazes are often a one-time weapon in more ways than one!