

Down in Flames Supplemental Rules

1. General Rules and Concept. The rules below are meant to be used as “house rules” to supplement the Down in Flames rules system for World War II air-to-air combat. Unless specifically stated below, all the rules in the Down in Flames rulesbooklet are in effect. These rules supplement the original Down in Flame rules, as published by GMT Games, rather than the version of the rules published by Dan Verssen Games. These supplemental rules are not endorsed by, sponsored or sanctioned in any way by the author or publishers of any version of the Down in Flames rules.
2. Altitude. Rather than the altitude levels used in Down in Flames, altitude is tracked in levels of 2,000 feet. Levels are numbered, with 1 being the lowest and the highest being determined by the aircraft in the game with the highest ceiling. Thus, an aircraft with a maximum ceiling of 36,000 feet could be at any altitude level from 1 to 18.
 - 2.1. Aircraft may dive either 1 or 2 levels. Leaders gain 1 card per level dived, unless a rule specifically applicable to the Leader’s aircraft type states otherwise.
 - 2.2. Aircraft may climb 1 level, up to their maximum ceiling. Leaders must discard 2 cards when climbing 1 level, unless a rule specifically applicable to the Leader’s aircraft type provides otherwise.
 - 2.3. Use a D20 set next to each Element to show the Element’s altitude. For altitudes above 20, add a D6 showing the additional altitudes.
 - 2.4. Altitude levels affect an aircraft’s Agility, Speed and Horsepower ratings, as shown on the aircraft’s data card.
 - 2.5. Players can roll D20 to determine the starting altitude of all aircraft in a dogfight. Alternatively, players can bid for the starting altitude, with each player writing his or her preferred starting altitude and the number of victory points that he or she is willing to concede to start at that altitude. If two bids tie, dice to see which bid prevails.
 - 2.5.1. Not all aircraft are capable of reaching altitude level 20. A game cannot begin at an altitude higher than can be attained by all Leaders in the game.
 - 2.5.2. Some aircraft can reach altitudes higher than altitude level 20. Regardless, a game cannot begin at an altitude higher than level 20.
 - 2.6. Vertical Rolls. In the standard Down in Flames rules, VERTICAL ROLL cards played as response cards did not result in a change in altitude. In these supplemental rules, they may.
 - 2.6.1. A VERTICAL ROLL card played as a response card will result in a change in altitude unless it is negated by an ACE CARD or another VERTICAL ROLL card.

- 2.6.2. When playing a VERTICAL ROLL card as a response card, the player must specify whether the Leader or Wingman for which the card is played is climbing or diving.
 - 2.6.3. If the VERTICAL ROLL card is not negated, the Element including the Leader or Wingman playing the card changes altitude immediately, as if the VERTICAL ROLL was played as an attack card.
 - 2.6.4. An enemy Element engaged with the Element changing altitude may follow. They follow in accordance with the rules for following Elements playing a VERTICAL ROLL card as an attack card.
 - 2.6.5. A Neutral enemy Element may also follow the altitude change if the Leader or Wingman of that Element played the last IN MY SIGHTS or OUT OF THE SUN card prior to the Vertical Roll card being played. The enemy Element does not have to discard any cards (other than any associated with climbing a level) when following.
3. Combat System – Fighters and Light Bombers. These house rules use an odds-based combat system rather than the system used in Down in Flames. In connection with these rules, all fighter and light bomber aircraft have new defensive strengths and new values called “Hit Values” or HVs. An aircraft’s Hit Value represents the damage that can be caused by 1 “hit” from its weapons. Some aircraft have two hit values, separated by a slash. Their use is explained below in section 10.15.
- 3.1. With certain exceptions noted for specific aircraft, all Leaders have a burst value of 1. This burst value is modified for position as provided in the standard Down in Flame rules, giving a total of 2 bursts when Advantaged and 4 bursts when Tailing.
 - 3.1.1. Aircraft with early gunsights have a burst value of 0. They receive a +1 burst bonus for being Advantaged and a +4 burst bonus for tailing.
 - 3.1.2. Leaders with gyro gunsights or with pilots who received advanced training in deflection shooting receive a +2 burst bonus for being Advantaged rather than +1.
 - 3.2. Players play IN MY SIGHTS and OUT OF THE SUN cards as provided in the Down in Flames rules. When the play of an IN MY SIGHTS or OUT OF THE SUN card is successful, proceed as follows.
 - 3.2.1. Note the number of hits scored.
 - 3.2.2. Multiply this number by the Hit Value of the firing aircraft.
 - 3.2.3. Divide the result by the Defense strength of the target aircraft to determine the odds.
 - 3.2.4. If the odds are greater than 1:1, drop all fractions.

- 3.2.5. Roll one D6. If the result is less than or equal to half the odds, the target aircraft is shot down. If the result is less than or equal to the odds, the target is damaged.
- 3.2.6. For odds of 1:1, roll again if a 1 is rolled. On a 1-3, the aircraft is shot down; on a 4-6 it is damaged.
- 3.2.7. For odds of 1:2 roll again if a 1 is rolled. On a 1, the aircraft is shot down; on a 2 or 3, it is damaged.
- 3.2.8. For odds of less than 1:2, roll again if a 1 is rolled and the aircraft is damaged on a 1.
- 3.2.9. Example: a Spitfire with a hit value of 8 is attacking a Bf 109 with a defense of 6. The Spitfire attacks successfully with a 1 burst, 2 hit card. The odds are 16 to 6, which is a 2:1. The Bf 109 will be damaged on a roll of 2 and shot down on a roll of 1. Had the attack resulted in 3 hits, the odds would have been 4 to 1, resulting in damage on a roll of 3 or 4 and a shoot down on a roll of 1 or 2.
- 3.2.10. A player may elect to aggregate hits from separate In My Sights or Out of Sun cards together to increase the odds of an attack. For example, a player could play a 1 hit card and a 2 hit card and then calculate the odds of the attack based on 3 hits. For hits to be aggregated in this way, the cards must be played one immediately after the other. If any card is negated, the entire attack is negated. The attacking player announces that hits from a card will be aggregated with previous cards as the card is played.

3.3. Gunner fire has a Hit Value of 8.

4. Combat System – Medium Bombers and Heavy Bombers. Combat is resolved differently for attacks on Medium and Heavy Bombers.

- 4.1.1. Burst ratings are determined based on a Leader's Burst as described above, as modified by the standard Down in Flames rules for attacking bombers. Wingmen attack Bombers as described in the standard Down in Flames rules, except that a Wingman may not in a single turn play more IN MY SIGHTS and OUT OF THE SUN cards than its Offense rating.
- 4.1.2. The Hit Values described above are used, but the odds based system is not used.
- 4.1.3. Instead, every 8 points of Hit Value scored against a Medium or Heavy Bomber target results in the target taking 1 point of damage.
- 4.1.4. When a bomber takes damage points equal to at least half of its defense rating, it is damaged.
- 4.1.5. As in Down in Flames, damaged Medium and Heavy Bombers drop out of their formations. There is no other effect for damaged Medium and Heavy Bombers.

- 4.1.6. When a bomber takes damage point equal to its defense rating, it is shot down.
 - 4.1.7. An attack by a Hit Value 4 through 7 scores a hit on a D6 roll of 3 or less. Apply the same rule for “left over” Hit Value points after those points are applied in multiples of 8.
 - 4.1.8. Example: An Fw 190A-8 successfully attacks a B-17G with a 3 hit card. The Fw 190 has an HV of 20, and so attacks with 60 HV. 56 HV cause 7 points of damage. Roll D6 to see if the remaining 4 HV cause an additional point of damage. They do on a roll of 1-3.
 - 4.1.9. Turret defense fire has a Hit Value of 8.
 - 4.1.10. Note: if the optional ammunition rules are used, always roll D6 or D12 to check for ammo depletion, even for attacks that are even multiples of Hit Value points.
5. Damage Effects. Damaged aircraft are affected in the following ways.
- 5.1. For Leaders:
 - 5.1.1. Reduce their Horsepower rating by 1, but not below 1.
 - 5.1.2. Reduce their Agility rating (see below) by 2 if more than 4. Otherwise, reduce it by 1 but not below 1.
 - 5.1.3. Reduce their Speed rating by 1, but not below 1.
 - 5.2. For Wingmen, reduce their total card draw by 1 card. If a Wingman’s defense card draw is greater, reduce this by 1 card. If not, reduce the Wingman’s offense card draw by 1 card.
 - 5.3. For Formation aircraft, damage has no effect other than the effects provided for in the Down in Flame rules.
 - 5.4. Damaged aircraft that are damaged a second time are shot down.
 - 5.5. When using these rules, count the “Fuel Tank” card as a 4 hit card if it is played against a Fighter or Light Bomber target.
6. *Optional: D12 Combat System. Players who want a bit more granularity at the expense of a bit more math may use a D12 rather than a D6 with this supplemental combat system. When a D12 is used, the following rules are in effect*
- 6.1.1. *A roll equal to or less than twice the odds damages an aircraft.*
 - 6.1.2. *A roll equal to or less than the odds shoots down the aircraft.*
 - 6.1.3. *Odds are rounded down to the nearest half-odds rather than the nearest whole odds.*
 - 6.1.4. *For odds of 1:2, roll the die again if a 1 is rolled. A result of 1 through 6 shoots down the target; 7 through 12 damages it.*

- 6.1.5. *For odds of less than 1:2, roll the die again if a 1 is rolled. A result of 1 or 2 shoots down the target; 3 through 6 damages it; 7 through 12 indicates that the attack had no effect.*
- 6.1.6. *Example: a Spitfire with a hit value of 8 is attacking a Bf 109 with a defense of 6. The Spitfire attacks successfully with a 1 burst, 2 hit card. The odds are 16 to 6, which is a 2.5:1. The Bf 109 will be damaged on a roll of 3 through 5 and shot down on a roll of 1 or 2. Had the attack resulted in 3 hits, the odds would have been 4 to 1, resulting in damage on a roll of 4 through 8 and a shoot down on a roll of 1 through 4.*
- 6.1.7. *When using a D12 with the combat system for Medium and Heavy Bombers, roll for every 2 “left over” Hit Value points. 2-3 HV points score a damage point on a D12 roll of 1-3, 4-5 HV points on a roll of 1-6, and 6-7 HV points on a roll of 1-9.*
7. *Optional: Air to Air Rockets. The Luftwaffe used unguided air to air rockets to attack large formations of heavy bombers. The rockets were used as stand-off weapons, launched in to bomber formations from behind.*
- 7.1.1. *Bf 109G-6, Fw 190A-6 and Bf 110G-2 Leaders and Wingmen can carry air-to-air rockets.*
- 7.1.2. *Each aircraft carrying rockets may make 1 rocket attack per game. They may make the attack by playing any IN MY SIGHTS and OUT OF THE SUN card successfully against a Heavy Bomber target. The attacking fighter is not subject to counter-fire. It may play a Maneuver or Half Loop card to attempt to select a specific bomber target, subject to responses from escorting fighters. Its attack is subject to being spoiled.*
- 7.1.3. *A rocket attack by a Bf 109 or an Fw 190 hits on a D6 roll of 1. A rocket attack by a Bf 110 hits on a D6 roll of 1 or 2. An attack destroys any bomber it hits.*
- 7.1.4. *Subtract 1 from the Agility and Speed ratings of any aircraft carrying air to air rockets. These aircraft revert to their normal Agility ratings once they have made a rocket attack, but retain the detriment to their speed.*
8. Agility and Speed. *These supplemental rules use the concepts of Agility and Speed in place of the Performance ratings of the Down in Flames rules. See the “Designer’s Notes” below for the thinking behind this change.*
- 8.1. *All fighter aircraft have an Agility rating and a Speed rating. These are found on the aircraft’s data card. Note that both Agility and Speed vary with altitude.*
- 8.2. *At the end of its turn, a Leader may hold cards in its hand equal to the greater of its Agility or Speed ratings.*
- 8.3. *If a Leader’s Agility rating is greater than its Speed rating at its altitude, it must always retain cards in its hand equal to the difference between the two ratings.*

For example, an A6M2's Agility Rating at altitude level 2 is 9 and its speed rating is 6. It can hold up to 9 cards in its hand but may never have less than 3 cards in its hand.

8.4. If a Leader's Speed Rating is greater than its Agility rating at its altitude, its Agility rating limits the number of Agility Cards that it can play in a turn while its Speed rating limits the total number of cards that it can hold in its hand at the start and end of its turn. Its Agility rating only limits the number of Agility Cards that it can play, not the total number of cards that it can play in a turn.

8.4.1. "Agility Cards" include the following: MANEUVERING, TIGHT TURN, BARREL ROLL, HALF LOOP, SCISSORS, ACE PILOT cards played in response to an Agility Card, and (in some cases) VERTICAL ROLL cards. VERTICAL ROLL cards do not count as Agility Cards if played when diving.

8.4.2. Use 1 or 2 D6 on the Leader's aircraft card to track the number of Agility cards that it can play in a turn. Note that the play of Agility Cards must be tracked only when a Leader's Speed rating exceeds its Agility rating.

8.4.3. Agility Cards discarded (for example, due to climbing or damage) do not count as being played.

8.4.4. For example, a P-51D-10 Leader at altitude level 18 has an Agility Rating of 5 and a Speed rating of 8. It may hold up to 8 cards in its hand, but may play no more than 5 Agility Cards in the course of a turn.

8.5. If an altitude change results in a Leader holding more cards in its hand than permitted, it must either play or discard enough cards by the end of its move to bring its hand within the permitted limit.

8.6. The "Agile" special characteristic from "Zero!" is not used when these supplemental rules are in use.

9. Pilots and Aircraft Ratings. These supplemental rules do not use the pilot ratings from Down in Flames. They also place additional restrictions on loaded aircraft.

9.1. Pilot Characteristics. Pilots range in quality from recruit (the worst) to ace (the best). They also may have special characteristics.

9.1.1. Recruit Leaders are restricted to holding 2 cards fewer than regular Leaders, and have their Burst rating reduced by 1.

9.1.2. Recruit Wingmen have their offense and defense ratings each reduced by 1 card.

9.1.3. Green Leaders are restricted to holding 2 cards fewer than regular Leaders.

9.1.4. Green Wingmen: if their defense rating is greater than their offense rating, it is reduced by 1. Otherwise, their offense rating is reduced by 1.

9.1.5. Regular Leaders and Wingmen hold or draw cards and have Bursts as generally provided in these rules.

- 9.1.6. Veteran Leaders may hold 1 more card in their hands than the rules would otherwise permit, in all situations.
- 9.1.7. Veteran Wingmen: on even numbered moves, they may draw 1 more card than their rating. If their offense rating is less than their defense rating, they may draw 1 additional offense card. Otherwise, they may draw 1 more defense card.
- 9.1.8. Ace Leaders: increase their aircraft's Agility, Speed and HP ratings by 1. They also benefit from the ability (described in the Down in Flames rules) to declare any card to be an ACE PILOT card once per game.
- 9.1.9. Crack shots: Leaders may have a "crack shot" ability in addition to their experience. This gives them 1 additional Burst per turn. They also are not subject to the optional ammunition rule in Section 10.15.
- 9.1.10. Keen eyesight: as provided in the Down in Flame rules. In addition, regular or veteran Leaders with Keen Eyesight may start their first turn as if they have just successfully played a MANEUVERING card against the opposing aircraft of their choice.
- 9.1.11. Players should keep pilot characteristics secret (noting them on a sheet of paper) until they have to be revealed in combat.
- 9.2. Loaded Condition: In addition to the handicaps in the Down in Flame rules, Light Bombers and Fighters carrying bombs or torpedoes also incur the following penalties.
 - 9.2.1. Their Agility rating is reduced by 2 if more than 4, and is otherwise reduced by 1. It is not reduced to less than 1.
 - 9.2.2. Their HP rating is reduced by 1, but not to less than 1.
 - 9.2.3. Their Speed rating remains unchanged.
 - 9.2.4. Damaged Fighters and Light Bombers automatically jettison their bombs or torpedoes, with the result that loaded aircraft penalties are not cumulative with the performance penalties for damaged aircraft.
- 9.3. See Section 5 for performance penalties for damaged aircraft.
- 10. Special Aircraft Characteristics. Some aircraft have special characteristics noted on their data cards. This section explains the meaning of those special characteristics.
 - 10.1. Quick Climb. Only 1 card lost per level climbed rather than 2.
 - 10.2. Quick Dive. Two cards gained per level dived rather than 1.
 - 10.3. Slow Dive. Leaders and Wingmen cannot follow VERTICAL ROLL played as a dive unless the aircraft playing the card also has a slow dive characteristic.
 - 10.4. Dive Limit. The aircraft can only gain 1 card from diving, even if it dives 2 altitude levels.
 - 10.5. Slow Climb. The aircraft must discard 3 cards rather than 2 when climbing 1 level.

- 10.6. Quick Bank. Leaders can play SCISSORS cards without counting them against maneuver card limits.
- 10.7. Slow Bank. Leaders and Wingmen can only play SCISSORS cards in response to TIGHT TURN cards unless they are played against another slow bank aircraft. All Medium Bombers are considered slow bank aircraft for this purpose.
- 10.8. Simple Sight. The aircraft lacks a reflector gunsight: 0 bursts if Neutral, 1 burst if Advantaged, 4 bursts if Tailing.
- 10.9. Gyro Sight. The aircraft has a gyro gunsight: 1 burst if Neutral, 2 bursts if Advantaged, 4 bursts if Tailing.
- 10.10. Beam attacks. The pilot is trained in firing from the side of a target. The aircraft receives a +2 bonus to bursts (rather than +1) when Advantaged.
- 10.11. Thach Weave. Where 2 or more elements of the aircraft type are in play, the following rules apply to them.
- 10.11.1. Any aircraft in either of the Elements may respond to an OUT OF THE SUN card with a TIGHT TURN.
- 10.11.2. Provided that it is not otherwise engaged, an Element can attack an enemy Leader engaged with a friendly Element of the same aircraft type.
- 10.11.3. Players with the Thach Weave should bid on the ability to use it, saying how many victory points they are willing to pay. If the opposing player accepts the bid, the Thach Weave can be used.
- 10.11.4. This rule represents the mutually supporting formation maneuvers developed by Jimmy Thach, a US Navy aviator. Thach developed these tactics for the F4F-4 and first used them during the Battle of Midway. In essence, Thach had 2 elements of F4F-4s fly on parallel courses within visual distance of each other. When 1 element spotted Zeros attacking the other element it would radio a warning. The 2 elements would then turn towards each other, giving the unengaged element the opportunity to shoot at the Zeros chasing the engaged element. After the 2 formations crossed paths they would again turn to parallel courses – hence the “weave.”
- 10.12. Hurricane IIC Special Firing Rule. The Hurricane IIC’s weapons can be fired at a Hit Value of 8 or 16, at the owning player’s option. If a Hit Value of 16 is used, immediately discard 1 card from the firing aircraft’s hand. This represents the formidable recoil of 4 20mm cannons and their effect on the light Hurricane airframe. A Hurricane IIC Wingman always uses a Hit Value of 8.
- 10.13. Beaufighter IF Special Firing Rule. The Beaufighter IF can never score more than 2 hits per attack card, regardless of the number of hits called for on the card. This represents the Beau’s uncorrectable tendency to drop its nose due to the recoil forces of firing.
- 10.14. Agile. The “Agile” special characteristic from “Zero!” is not used when these supplemental rules are in use.

10.15. Optional: Ammunition Rule. *Some Hit Values have 2 numbers, separated by a slash. The left-hand number is the Hit Value used normally. The right-hand number represents the Hit Value of the aircraft after some of its weapons have used all of their ammunition. If this rule is in use, roll D6 after any attack using a left-hand Hit Value that results in a 1 being rolled. If the additional roll is less than or equal to the number of bursts in the attack, the aircraft must use its right-hand Hit Value for all further attacks. Mark the aircraft card with any convenient marker to reflect this. Players may voluntarily elect to use the right-hand hit value for any specified IN MY SIGHTS or OUT OF THE SUN card, so foregoing the risk of having some weapons run out of ammunition. If the optional D12 combat system is used, check for ammunition depletion on a D12 roll of 1 or 2.*

11. Wingmen. All of the Wingman rules in Down in Flames continue to apply, although some Wingman values have changed and new Wingman values have been supplied for new aircraft types. The rule decreasing Wingman ratings at higher altitudes is not used in when these rules are in use. See the aircraft data cards for Wingman values.

Designer's Notes. I admit it. As a kid, I always wanted to dogfight my model airplanes – mostly 1/48 scale Monogram kits, but Revell 1/76 scalars in a pinch. And I have not grown up since. I have ever been a sucker for air war games of all types and all eras. But I have never found a game that, to my mind, really conveyed the essence of World War II plane-on plane aerial combat.

I have certainly enjoyed the Fighting Wings series of games. In particular, version 2.0 of the Fighting Wings system seems to do an excellent job of portraying the physics of flight and the details of aircraft performance. However, that portrayal comes at the price of intricate mechanics that can at times make the game seem more like a physics experiment. It is relatively simple to think “I’m going to flip over and dive on that guy,” but considerably more complex to implement that thought in time and space.

The Down in Flames series of games lies at the other end of the spectrum. The DiF rules abstract air-to-air combat while retaining its essential characteristics. The crucial concept of aircraft energy is portrayed by card hands. The more energy an aircraft has, the more cards it can have in its hand. As cards are played, energy is used and the player has to decide how many cards to play and when to play them. The randomness of the card draw simulates the chaos of air combat. Just as in air fighting a pilot could just be in wrong place at the wrong time, so in the game some attacks just cannot be remedied without the right cards in hand. The limited size of card hands also forces players to choose between holding offensive or defensive cards. This mirrors the actual event, where pilots had to balance aggression and prudence. Finally, the system’s abstracted rules for wingmen provide tactical choices without bogging the game down. All in all, DiF is an elegant rules package, and there is a lot to be said about elegance when portraying a fast flowing tactical situation.

All that said, I never came completely to terms with all of DiF’s abstractions. I thought that DiF was a great chassis for simulating World War II dogfights, but that that chassis could do with some tweaking. And so I finally rolled up my sleeves and did some tweaks.

This rule set tweaks three main aspects of the game: altitude, aircraft characteristics, and the combat system.

Depending on the version, the DiF rules have only three or five generic altitude levels. All aircraft can fly at all altitude levels, and (with the limited exception of “turbo” aircraft) being at a particular altitude level affects all fighter aircraft in exactly the same way. But in the real world of World War II aircraft, different aircraft performed differently at different altitudes. Some were better at lower altitudes, some were better at higher

altitudes, and some were good “all rounders.” And some aircraft could fly higher than others. Finally, assuming that DiF game turn is somewhere between 10 and 20 seconds, no aircraft could go from its minimum altitude to its maximum altitude (or vice versa) in two to four game turns.

All this led me to introduce 2,000 altitude levels into the game. Maximum altitudes for most World War II aircraft were under 40,000 feet, so an aircraft’s altitude level can be easily tracked with a twenty sided die. Aircraft could typically climb one level or dive one or two levels in the course of a game turn, so the change takes the game a bit closer to concrete reality. And the increase in altitude levels permits individual aircraft performance to be portrayed in more detail. Most aircraft now lose 2 cards when climbing and gain only one while diving, so combat tends to realistically trend downwards. With aircraft capabilities now individually tracked at 6 or more altitude levels, this modification also builds in a greater ability to distinguish between aircraft performance at different altitudes.

Next, DiF uses a combat system in which (with the exception of a single instance) aircraft gradually accrue damage. Players know in advance how much damage an attack will cause and can take that into account when determining which attack to counter. An aircraft’s ability to inflict damage is measured on a scale of 0 to 3. My impression of World War II fighter combat is different. First, and most obviously, differences in aircraft armament translated into far more than four possible levels of weapons effectiveness. Second, and more importantly, no pilot could tell the effect that a particular attack could have on his aircraft. It could be a complete miss or instantly lethal. Extending this, fighter pilots could not compare the damage that their aircraft had taken or would take to some set maximum level of sustainable damage.

My response was to replace the fighter combat system with an odds-based system that gives just two results: damaged and shot down. Under the new system, almost any attack could be fatal and most attacks could miss entirely. This wider range of results brings more luck into the game, but I think that is in keeping with the luck factor in actual combat. The new system also permits fine-tuning of aircraft defensive strength and weapons effectiveness. Admittedly, some of this is “lost in the wash” of the odds system, but it has enough of an effect to show differences between aircraft. A player can still decide to absorb an attack, but now there is generally a slight risk of total destruction.

For formation aircraft (medium and heavy bombers), I retained a “bar of soap” combat concept to mirror the image of damaged bombers staggering to stay in formation until cumulative damage takes its toll and they sink slowly earthwards. It does, however,

play off the new values for weapons effectiveness. For these heavy aircraft, aerial combat was more about the capacity to absorb punishment than the ability to avoid it.

The altitude and combat modifications permit more variation between aircraft by introducing more altitude levels and more gradations in aircraft weapon effectiveness. My final modifications takes this further. First, I now introduce the twin concepts of agility and speed in place of DiF's concept of performance. Think of agility as the ability of an aircraft to cram the highest number of maneuvers into the speed on hand. Aircraft with high agility ratings can sustain high rates of turn, even at relatively low speeds, without falling out of the sky. Speed is the aircraft's ability to hoard energy for use in maneuvers. Those maneuvers could be turns, but could also be climbing and diving.

Agility and speed act as limits on each other. A high agility, low speed aircraft may have lots of cards in its hand, but it can only play them up to the limit of its speed rating. A low agility, high speed aircraft may also have lots of cards, but restrictions on its ability to play cards. Splitting the performance value in this way allows the game to simulate slower, more agile aircraft (think Japanese Zero) and faster, less maneuverable aircraft (think German Fw 190).

In addition to splitting the performance rating into agility and speed, I have also introduced a series of special characteristics for aircraft. Each characteristic is meant to add some flavor to an aircraft's performance, adding some historical details to the game and encouraging historical tactics.

Bottom line: I have tried to preserve the excellent concepts in DiF while adding some more historical accuracy and some additional aircraft details. I have tried to do this without adding too much complexity to the system or bogging it down in unrewarding details. I hope that the result adds some enjoyable depth to an already excellent game.