

## Fighting Wings - "Quick-Start" Rules (3.5.1) - Fall 2010

**1.1 Introduction:** These rules allow players to sample the *Fighting Wings* game system at a simpler level than with the full rules.

**1.2 Scale:** One game turn is 4 seconds of time. One map hex is 100 yards. Each aircraft (A/C) counter is one airplane. Each A/C flight point (FP) is 50 mph of speed, each half flight point is 25 mph of speed.

**1.3 Sequence of Play:** Each turn is divided into *Initiative*, *Movement*, & *Combat Phases*. All activities allowed in one phase must be completed before starting the next. After the *Combat Phase*, start a new turn.

**1.4 Key Concept:** The game is played in three dimensions. A/C have a specific location defined by their *map position* and *altitude*, and a specific orientation defined by their *facing* and *flight attitude*. A/C may be in level, climbing or diving flight. Some may be at higher or lower altitudes than others. Players must mentally visualize the vertical relationship between A/C. The horizontal relationship will be visible on the game map.

**1.5 Map Position:** The map hex grid is used to position A/C counters. Counters can be in the center of a hex or placed on one of the six hex side lines that define a hex (but only if faced parallel to the line).

**1.6 Altitude:** Altitude is divided into 1,000 foot "levels", 100 foot "increments" and coded "bands". A/C performance numbers, as depicted on A/C data cards (ADCs), vary by altitude band. Altitude bands are identified by two-letter codes as follows:

UH+	= Ultra-high	EH	= Extremely high
VH	= Very high	HI	= High
MH	= Medium high	ML	= Medium low
LO	= Low	VL	= Very low

Altitude is recorded on a log sheet as follows: "Thousands dot hundreds" (i.e., ".21" = 2,100 feet, or two levels and one increment).

**1.7 Facing:** The nose of the A/C top view on a counter denotes the direction it is facing. A/C must always face a hex side or one of the six junctures between hex sides. This results in 12 allowed facings, each 30° apart from the next & labeled with a compass heading (see the compass rose in the flight example diagram on page 3. (N = North, NNE = North by Northeast, NE = Northeast, E = East, etc.). A/C always advance across the map in the direction they are facing when moving horizontally.

**1.8 Flight (nose) Attitude:** An A/C's attitude indicates its pitch angle, which determines how far it can move horizontally and vertically in a game turn. There are seven base attitudes: *level*; *shallow*, *steep* or *vertical climbs*; and *shallow*, *steep* or *vertical dives*. When upright or inverted bank angles are considered, 14 defined attitudes are possible. The *Flight Attitude Diagram* (Page 5) shows 12 positions but vertical attitudes can be either upright or inverted depending on angle of bank (for 14 total attitudes). See rule 3.1 for flight attitude log sheet codes.

**1.9 A/C Logs:** An A/C's start hex, facing, altitude, speed, angle of bank and flight attitude is recorded on an "A/C Log sheet" each game turn. One log is kept for each A/C in play. The scenarios provide the initial set up data for the first game turn, and each player records changes resulting from movement each turn thereafter on the log sheet.

**2.0 A/C Data Cards (ADCs):** The information needed to fly an A/C is found on its data card. The sections to be familiar with for these rules are the *A/C Performance Chart* which lists an A/C's speed limits, the *Power versus Speed Chart* which lists power available, banking and side slip requirements, and the *Fire Power Chart* which details each A/C's weapons. The use of each section of an ADC is explained in the rules below. Items on an ADC not mentioned in these rules may be ignored.

**2.1 Speed & Flight Points:** How fast an A/C can fly at different altitudes is shown on its ADC. Take any ADC and find the *A/C Performance Chart*. At the far left is an altitude column listing the different bands. To the right are three columns labeled minimum, maximum and maximum dive speed. The numbers in each column are in terms of flight points.

An A/C's start speed is the flight points (FPs) it has for moving in a game turn. FPs can be expended as horizontal FPs (HFPs) or vertical FPs (VFPs). Each HFP expended moves the A/C one hex or hex side on the map in the direction it is facing. Each VFP expended changes A/C altitude by 300 feet up or down if climbing or diving, respectively, but does not move it across the map. All full FPs must be expended each turn.

For turn, bank & slip requirements, A/C SPEED is referred to, for all flight attitude FP proportions and altitude changes, total FPs are used.

**2.2 Half FPs:** The smallest speed increment tracked is 0.5 (a half FP). Half FPs cannot be expended so they are carried forward until their A/C's start speed includes a 0.5, upon which, the two are added to provide another full FP to use.

**2.3 Speed Changes:** Engine thrust and diving cause A/C to speed up. Turning, slipping, climbing and being too fast cause A/C to slow down. This is measured by accumulating acceleration points (accel) and deceleration points (decel). At the end of each turn all decel points earned are subtracted from all accel points earned. If the remainder is positive, speed is gained; if negative, speed is lost. For each 5 points of difference, increase or decrease A/C speed, as required, by 0.5. This is the new start speed for the next game turn.

**Accel & Decel Carry:** If, after making all possible speed adjustments, less than 5 accel or decel remain, note this in the "accel carry" or "decel carry" space of the A/C log sheet for the following game turn. These points are then added to any accel or decel earned in that turn. A list of the different accel and decel points are given later.

**Max Level Speed Limits:** If starting a game turn above max level speed, engine power = 0. If starting at or above max level speed, A/C may not accelerate past max level speed or carry any left-over accel points to the next turn unless they also started or ended the turn in diving flight.

**2.4 Horizontal Maneuvering:** A/C may change facing as they expend flight points in movement by turning. Before turning A/C must be established in an appropriate left or right angle-of-bank.

**2.5 Angles-of-Bank:** There are six defined bank angles; three upright and three inverted. They are (log code): *Wings Level* (LV), *Left Bank* (LB), *Right Bank* (RB), *Inverted Left Bank* (IL), *Inverted Right Bank* (IR) and *Inverted Level* (IV). Changing bank angles from an existing one to an adjacent one requires A/C to roll left or right for a period of time counted in terms of continuous FPs expended in movement, after which the new bank angle is in effect. The no. of FPs needed is found in the "Banking FPs" line of the *Power vs. Speed Chart* of an ADC under the appropriate speed column for the A/C. A/C in LB, IL, RB or IR banks may turn in the direction of the bank. Rolling between LB and IL, or RB and IR is allowed while turning, in all other cases banking and turning may not be mixed. Depending on an A/C's speed and the rate selected, one or more facing changes may be possible in a single game turn. Bank angle also defines a flight attitude as upright or inverted.

**2.6 Turn Rates:** There are five turn rates defined: EZ (easy turn); TT (tight turn); HT (hard turn); BT (break turn) and ET (emergency turn), each representing increasing levels of G force. A particular turn rate may only be used if the A/C has sufficient speed for it. EZ turns are allowed at any speed  $\geq$  the A/C's minimum level speed.

Higher turn rates require a minimum speed as listed on the *A/C Performance Chart* in the columns labeled TT to ET. Cross index the altitude band the A/C is in with the desired rate to find the minimum speed required. If the A/C does not have that speed, it cannot use that rate.

**2.7 A/C Turn Chart:** Turning requires A/C to expend, in movement, contiguous FPs  $\geq$  the number listed in the *A/C Turn Chart* at the intersection of the selected rate with the A/C's speed. Once sufficient FPs are expended over one or more game turns, the A/C's facing may be changed to the adjacent one in the direction the A/C is banked.

**Hex sides & Turns:** If on a hex side when changing facing, shift A/C to the hex adjacent to that hex side in the direction of the bank before changing facing. Changing facing ends turning and a new turn must be started to face again. On the *Turn Chart*, an entry of "60" or "90" allows 2 or 3 facing changes, respectively, for each FP expended.

**"Move-to-Face-rule"** - If an A/C starts a game turn already meeting its turn FP requirement, it must still expend at least 1 FP before facing.

### 2.8 Turn Restrictions:

**ET Rates** - A/C using "ET" rates may not fire guns in the same game turn and must roll a D10 at end of their move to check for over-stress. If  $\leq 1$  rolled, a wing spar critical hit is incurred (-1 per existing wing spar hit, or ET facing  $> 1$  done in game turn).

**Neg-G** - If a transition invokes Negative-G effects, turning is not allowed that game turn and any turn carry from a previous turn is lost.

**Vertical Flight** - A/C starting in vertical attitudes that do not transition (3.0) may not turn, but may use Vertical Rolls (4.4) to change facing.

**Abandoning Turns & Rolls** - Turns & rolls may be dropped at any

point (lose all carry) but the decel incurred to start a turn is kept.

**2.9 Flight Proportions:** A/C in climbs or dives have a mandatory altitude change (MC) forced on them at the start of their move to reflect vertical momentum from their start attitude. The number of VFPs an A/C can or must play depends on its average flight attitude (AFA). An A/C is allowed to adjust altitude at the end of its move through an optional altitude change (OC).

MC and OC are separate from, and in addition to, altitude changes caused by spending VFPs. The amount of altitude change caused by MC, VFPs and OC, is defined as a portion of the A/C's total FPs (speed + any half carry) in the *Flight Proportions Table*, which is used as follows:

**MC** - Cross index A/C's start attitude with the MC column to find a fraction with a "+" sign. Next, cross index that fraction with the A/C's total FPs on the Fractional Values Table (FVT). The result rounded up (indicated by plus sign) is the amount of 100' increments the A/C is forced to gain or lose while in a climb or dive, respectively.

**VFPs** - Cross index the A/C's average flight attitude (AFA, see 3.4) with the VFPs column to see what range of FPs must be VFPs. As above cross index the selected fraction with total FPs.

**OC** - Cross index A/C's end attitude with the OC column to find a fraction with a "-" sign. Next, cross index that fraction with the A/C's total FPs on the FVT. The result rounded down (indicated by minus sign) is the amount of 100' increments the A/C may choose to adjust altitude by. If climbing or diving, the adjustment may only be in the same direction as the attitude (i.e., up for a climb). If end attitude is level flight, it may be either up or down and the value is always rounded up.

**3.0 Vertical Maneuvering:** A/C change flight attitude (pitch) by declaring a "transition" at the start of their move. The amount of change depends on the turn rate used. For ease of play, attitude changes occur instantly and an average flight attitude (AFA) is defined which is used for movement proportions (HFP & VFPs).

### 3.1 Flight Attitude Log Codes:

VC = vertical climb	STC = steep climb	SHC = shallow climb
LVL = upright level	INV = inverted level	
VD = vertical dive	STD = steep dive	SHD = shallow dive

**3.2 No transition:** If a transition is not done, the start, average and ending attitude will be the same (exception - see gravity effects).

**3.3 Inverted Attitudes:** *Flight Attitude Diagram* codes in "( )" are inverted attitudes. On the A/C log, use an "I" before a code to indicate inverted attitudes (example: ISHD = inverted shallow dive).

**3.4 Transition Procedure:** Refer to the *Flight Attitudes Diagram*. It is composed of two circles, each depicting 12 possible nose positions. When pulling the nose up the outer-circle is used. When pushing the nose down the inner circle is used. The procedure is as follows:

Decide if a pull or push transition will be used and refer to the appropriate circle of the *Flight Attitudes Diagram*. Select a turn rate allowed by the A/C's speed and note the number of attitude changes allowed by that rate. Count around the circle, in the direction the A/C side view is pointed, that number of flight attitude steps to find the ending attitude.

- Push transitions are limited to a maximum rate of HT-2.

**3.5 Average Flight Attitude (AFA):** When transitions are used, the attitude half way around the circle, between A/C's start attitude and its end attitude is its AFA. For an odd number of attitude changes, round the half forward (i.e., toward the end attitude) - unless passing through or exiting vertical flight while diving, or using EZ or less rate transitions in any direction - then round it back toward the starting attitude.

**3.5.1 AFA VFP Restriction** - If a transition of 2 or more steps is used, the maximum VFPs allowed by the AFA must be taken, unless the AFA is vertical, in which case, the normal range of VFPs allowed is used.

**Example:** An A/C at speed 6.0 does a BT-3 pull from an "ISHD" to a "STD" with mandatory reversal. AFA will be ISTD (1.5 steps, rounded back to 1) and the A/C must use 3 VFPs (half of 6.0).

**3.6 Gravity Effects:** Gravity can add 1 step of attitude change to some downward transitions, see Flight Attitude Diagram notes for details.

**3.7 Mandatory Direction Reversals:** These occur any time an A/C does a transition which has it pass through a vertical attitude or, when an A/C starts in a vertical attitude and does one of the following transitions:

Start Attitude	Transition type causing Reversal
Upright Vertical Climb	Pulls toward inverted climb attitudes
Inverted Vertical Climb	Pushes toward upright climb attitudes
Inverted Vertical Dive	Pulls toward upright dives
Upright Vertical Dive	Pushes toward inverted dives.

**3.8 Optional Direction Reversals:** If an A/C ends its move in a vertical attitude and VFPs used were greater than HFPs, it may choose to do an optional direction reversal.

**3.9 Executing Reversals:** Reversals are executed at the end of the A/C's move when caused by transitions through a vertical attitude or taking an optional reversal. Reversals are executed at the start of an A/C's move if leaving a vertical attitude by a transition type that causes a mandatory reversal. The act of reversing is accomplished by flipping the A/C's current bank angle between upright and inverted (i.e., LB to IL) and changing its facing by 150 to 180 degrees in either direction resulting in a new facing 5 or 6 headings around the compass from the original. If reversing while on a hex side, and only taking 5 facing changes, the plane falls into the hex on the side of the hex side in the direction of the facing change. If on a hex side and making 6 facing changes, the A/C may remain on the hex side or fall into the adjacent hex in the direction of facing.

**4.0 Flying:** When it is an A/C's time to move, complete the following steps while recording required information on its log sheet.

### A/C Flight Procedure Summary

- Select engine power, note "accel" taken or any idle speed change.
- Note mandatory altitude change (MC) required by starting attitude.
- Select a transition rate to a new flight attitude if desired.
- Determine A/C's average flight attitude (AFA) & determine ratio of horizontal and vertical FPs allowed or required by the AFA.
- Change A/C position by expending flight points (FPs). All available full FPs must be expended each turn. Carry any half FPs forward.
- Note optional altitude gain or loss (OC) taken from ending attitude.
- Note "decel" from maneuvering or climbing, "accel" from diving.
- Determine new start speed for next game turn.

### 4.1 Accel & Decel Point Summary:

**Climbs and Dives:** Each altitude increment (100') dived or climbed gains 1 accel or 1 decel point, respectively. If starting in a climb, suffer the climb decel penalty listed on the ADC (general info-section). If starting in a dive, gain the dive accel bonus listed on the ADC (same section).

**Engine Power:** Cross index the A/C's starting altitude band with the appropriate speed column of the its ADC's *Power Versus Speed Chart*. There may be one number, or two separated by a slash. If start speed at or below maximum level speed, any amount of accel, from 0 to the highest number shown, in 0.5 point steps, may be taken. **Exception:** If start speed > max level, accel from power = 0.

**Idle Power Effects:** Idle power may be chosen instead of normal power. Idle power provides 0 accel, and immediately reduces the A/C's speed by 0.5 before it commences moving. All flying effects and requirements are based on the new start speed.

**Turns and Transitions:** For each 30° of facing change started, or each 30° of attitude change performed (including extra attitudes provided by gravity), add the decel number found in parenthesis next to the turn rate column title on the ADC. Note that EZ rates are not listed. They incur half the listed TT rate decel (keep fractions).

**Over Speed Decel:** If an A/C's start speed is over its max allowed level flight speed, over speed decel is incurred per this formula:

$$\text{Over speed decel} = 2 \times (\text{start speed} - \text{max listed level speed}).$$

**Example:** If max level speed = 7.0 and current start speed = 8.5, over speed decel =  $2 \times (8.5 - 7.0) = 2 \times 1.5 = 3.0$  decel.

- **Idle Over Speed Decel:** If idle power used, the over speed decel formula =  $2 \times (\text{adjusted start speed} - 1/2 \text{ max listed level speed})$ .

**4.2 Special Moves:** Side slips, vertical rolls, snap rolls, hammerheads and transition induced facings are special maneuver options.

**4.3 Side Slips:** With a *Slip*, A/C may displace from their current hex or hex side to the hex or hex side forward and to either side of their flight path, respectively. The side slip FP requirement is listed underneath the

banking requirement. Once this requirement is met in FPs of movement, over one or more game turns, the A/C may be shifted as shown on the moves diagram on page 4 by expending another HFP (not VFP).

**Slip Restrictions:** A/C must be in an upright bank to start a slip. Slip related FPs may not be used for rolls or turns. Starting a slip incurs HT rate decel. A +30 shot modifier applies if slipping was used.

**4.4 Vertical Rolls (VRs):** If an A/C does a transition and its end attitude is vertical it may change facing both through normal turning or through VRs. Both actions may be performed in one game turn, but, FPs used for one (turns or VRs) may not be used for the other. If no transition is used and an A/C in vertical flight may only change facing with VRs.

**VR Procedure & Limits:** Declare a VR upon starting a roll to a new bank angle. At least one VFP must be included in each VR for it to count. When the new bank angle reached, change facing by up to 90° in the direction of roll if diving; and in the direction opposite roll if climbing. If an A/C transitioned more than one step to reach vertical, VRs are limited to FPs expended after the first half of its move (rounded up) is done.

**4.5 Snap Rolls:** A snap roll allows an A/C to reduce its banking FP requirement by 1 (but not to < 1). For each snap roll started, 3 decel points are incurred and +10 applies to any shots taken.

**Snap Roll Restrictions:** Turning FPs may not be combined with snap roll FPs. Snap rolls, once started, cannot be abandoned. A snap roll is in effect until a new bank angle is reached.

**4.6 Hammer-Head (HH) Maneuver:** The A/C is taken into a vertical climb and the rudder is used at the point of stalling to flip it sideways to reverse direction from a vertical climb to a vertical dive.

**Hammerhead Procedure:** This is two-game-turn process.

- a. End the A/C's move in a vertical climb at the A/C's listed (or damage adjusted) minimum speed  $\pm 0.5$ . Declare HH attempt.
- b. At start of next move, roll percentile dice, add the pilot shot modifiers from Combat Table. The attempt = the A/C's transition.
- c. A result  $\leq 60$  = success. If so, change facing by 180°, and flight attitude to a vertical dive. Select bank angle of the player's choice. Start speed = A/C's minimum speed. Fly from there.
- d. A result is  $> 60$  = failure, A/C remains in last attitude & bank. Start speed becomes its minimum  $-0.5$  (it is stalled, see below).

**Hammerhead Restrictions:** A/C may not fire weapons on the turn the attempt is declared. Any turn, roll or maneuver carry for the following turn is forfeit. Only half FPs, accel & decel may be carried out of the attempt.

**4.7 Transition Induced Facings:** A/C which start in a turning bank angle, and which remain banked in the same direction (left or right) the entire turn (rolling between upright or inverted banks is okay) may take a free facing change (no FP cost or decel charge), as described below, if they transition 2 or more steps, **into, through, or out of** steep or vertical flight attitudes. This reflects flight path geometry effects in an oblique turn.

**Executing a Transition Induced Facing:** The free facing change may be taken upon the expenditure of any FP after the first half (rounded up) of the A/C's move. If using a "pull" transition, the facing change must be in the same direction as the bank direction. If using a "push" transition, the facing change is in the direction opposite the bank direction. This free facing change may be combined with facing changes from normal turns.

**4.8 Bad Flying:** Collisions, stalls, forced idle power and diving too fast are examples of bad flying events.

**4.9 A/C Collisions:** Collisions between A/C are possible if two or more A/C end a turn in the exact same position, or if an A/C fires at another from range = "0" and the target is not destroyed.

**Resolving Collisions:** The last A/C to move to the position, or each A/C firing at range "0" rolls a D10. On a 1 or less, a collision occurs. (-1 for each A/C over 2 in that position). If a collision occurs, shooters collide with their target, otherwise ,randomly determine which A/C the last moving A/C collides with. Collisions destroy both A/C (crews killed).

**5.0 Stalling:** If an A/C's start speed is below its minimum level speed it stalls. If stalled, it cannot transition, turn, roll or do anything except choose power. Its end attitude is automatically a STD, and its average flight attitude is a VD, (spend VFPs first). If its speed was less than 1.0 when it stalled, it becomes 1.0. It gains or loses altitude increments normally via MC, VFPs and OC. It gains accel normally from diving and power. When its start speed is at or above its minimum speed it can fly and move normally again with a start attitude of steep dive.

**5.1 Non-Fuel Injected Engines & Forced Idle:** A/C with the term "No F.I." appearing in the engine description of their ADC are forced to use idle power due to fuel starvation on the game turn following the one in which either of these two conditions are met:

- 1. Inverted Flying:** They spend an entire game turn in an inverted attitude and do not do either a pull transition or any turns.
- 2. Negative-G Pushes:** If they do any push transition with a start or average attitude being in the "against gravity" sector of the *Flight Attitudes Diagram*, or if they do a push transition of > one step.

**5.2 Dangerous Dives:** If start speed is > max dive speed, roll a D10. If roll= 9+, A/C is destroyed (+1 mod. per wing spar or tail structure hit).

**5.3 Fixed Gun Combat:** A/C with fixed guns (**N** (nose) or **W** (wing) coded weapons on the *Fire Power Chart* of the ADC) use these rules. A target must be in both the shooter's horizontal and vertical fields-of-fire and within the range of the guns to be attacked. The horizontal field-of-fire is shown in the diagram on page 4 for A/C facing hexes, hex junctures and on hex sides. The vertical field-of-fire is as follows:

- Shooter in level flight:** Target  $\leq 100$  feet higher or lower per two hexes or less of range & at same altitude if a same hex attack.
- Shooter in shallow flight:** Target at least 100 feet away per 3 hexes or less of range, not more than 200 feet away per hex of range and same altitude to 100 feet away for a same hex attack.
- Shooter in steep flight:** Target 200 to 600 feet away per hex of range, and 100 to 300 feet away for a same hex attack.
- Shooter in vertical flight:** target  $\geq 100'$  away if in same hex (shooter facing unimportant) or at least 600 feet or more per hex away and in horiz. field-of-fire as defined by facing.

**5.4 Gun Ranges & Firepower:** The ADC *Firepower Chart* lists the attack strength each group of guns has at different ranges. All or some of the guns may be used in an attack. To determine range to a target, count the horizontal hexes to the target and add one for every full 300 feet of altitude difference between the shooter and the target.

**5.5 Resolving Gun Attacks:** See the procedure on page 6 to calculate odds and then roll percentile dice (01 to 100 using two 10 sided dice, one for single digits and the other for 10s). Apply appropriate modifiers for highest turn rate used that turn, wing gun harmony effects, etc. Cross index the modified percentile result with the combat odds to find the number of hits inflicted. An A/C has two damage factors.

When cumulative hits exceed the higher damage factor, the A/C is destroyed. When cumulative hits exceed the lowest damage factor, it is severely damaged and suffers the following effects:

**Severe Damage Effects:**

- +0.5 to all minimum level and turn speeds. ET turns destroy A/C.
- -1.0 to all maximum speeds. +1 to all bank and slip requirements.
- +2 to any dangerous dive rolls. +2 decel per game turn.
- +15 modifier to shots.

**5.6 Critical Hits:** Compare the number of hits inflicted in a single attack with the lowest critical hit rating of any of the guns fired. For each multiple of that rating inflicted in hits, roll once to determine where the critical hit occurred and again to determine what the results of that type of critical hit was. Immediately apply the results to the target.

**6.0 The Playaids:** Please note that the charts on the next few pages may have additional information not contained in this rules text.

## 7.0 Optional Rules:

**7.1 Pilot Quality:** There are four levels of quality: Recruit, Green, Regular and Veteran. In addition, pilots may be aces or crack shots. Pilot quality provides modifiers to the shot die rolls as listed on the gun charts and to initiative rolls as shown on page 4 in the Sequence of Play.

**Restrictions:** Recruits may not slip, do optional reversals, use BT or ET rates, or tail enemy A/C. Green pilots may not use ET rates or tail enemy A/C. Both may still tail friendly A/C.

**7.2 A/C Protection:** Some A/C have engine, fuel tank or cockpit protection modifiers listed on their ADC representing armor or self sealing tanks. Add these modifiers to critical hit result rolls against those areas.

**7.3 Ammo:** Each gun group has an ammo rating. Each shot uses up one point of ammo. Treat a half point as a full point in these rules.

## PLAYING THE GAME

**Set Up:** Place A/C counters on the map according to the selected game scenario. Begin play following the sequence of play given below.

**1. Initiative Phase:** Determine in what order A/C will be moved. Each player rolls a D10 for each A/C in his control. The lowest modified roll moves first and so on. Players with ties must reroll until the tie is broken. Pilot quality modifiers do not apply to tie-breaker rolls.

**Modifiers:** Recruit -4, Green -2, Veteran +1, Ace +1

**2. Movement Phase:** In this phase players move their A/C about the map as allowed by the flight rules in the order established by initiative.

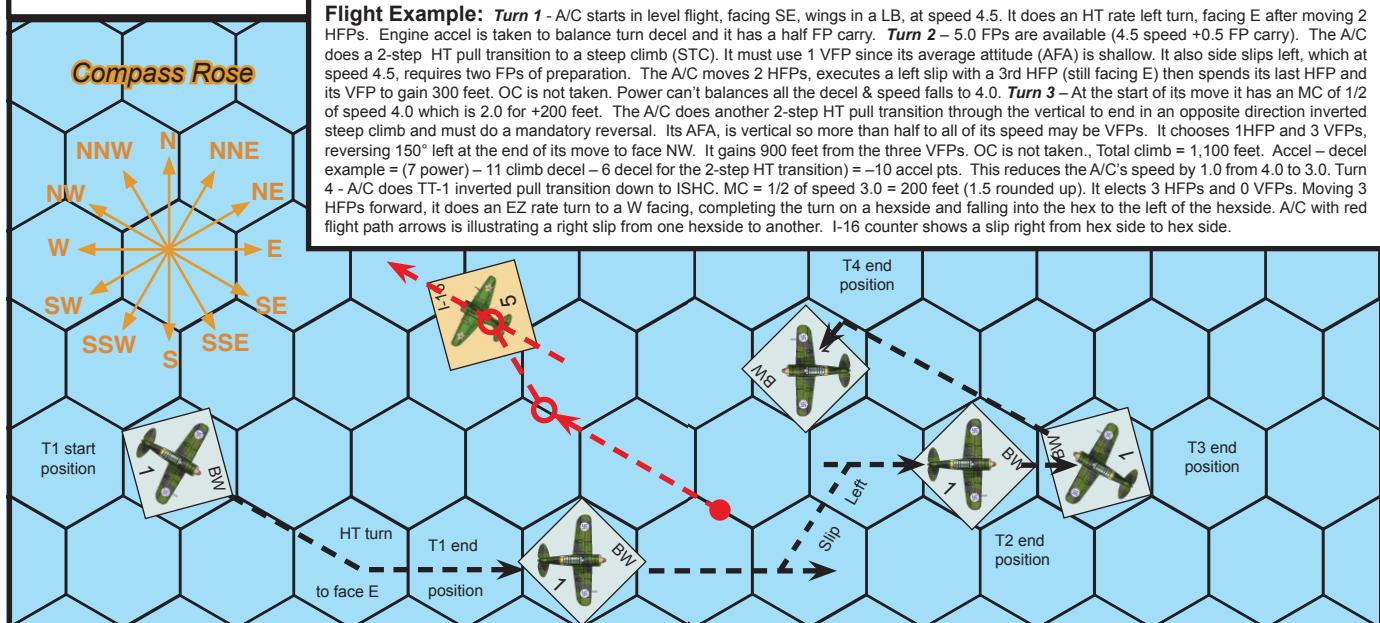
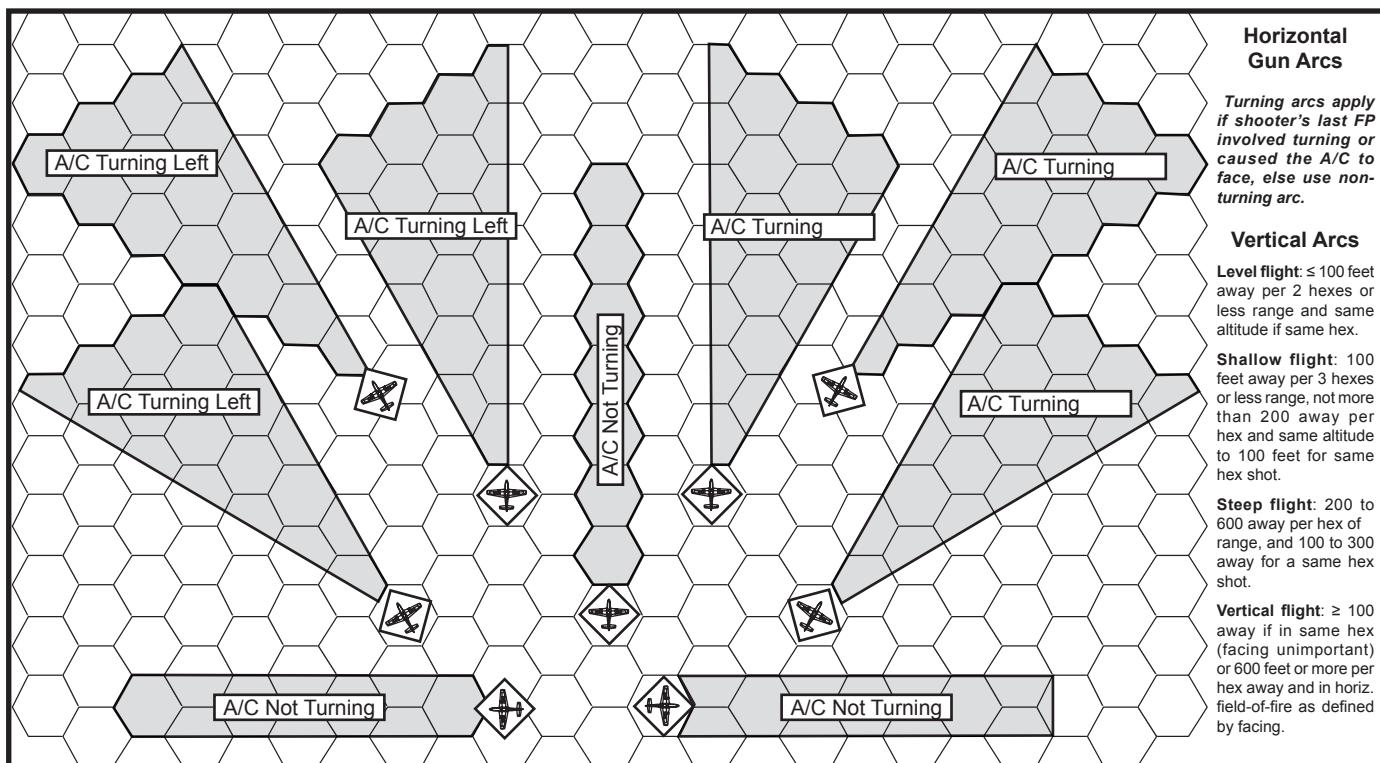
**3. Combat Phase:** After all movement is completed, players may conduct fixed gun attacks against an eligible enemy A/C in their A/C's field-of-fire. Damage results are not applied until all A/C have fired.

**Tailing Exception to Initiative:** A/C meeting all of the following criteria may declare tailing of an enemy or friendly A/C, thus adopting its initiative no. and moving immediately after it does:

1. The tailed A/C is within a horizontal wedge equal to both the tailer's left and right turning field-of-fire gun arcs combined from the tailer.
2. The tailer is within a wedge equal to the reciprocal of those same arcs but emanating from the tailed A/C's tail and is within 8 hexes of range to the enemy (counted as for gun shots).
3. Tailer must not be in same hex as tailee, unless in a vertical climb, and below a tailee in any type of climb by at least 300 feet, or in a vertical dive, and above a tailee in any type of dive by at least 300 feet. Note - tailing is not allowed at range 0.

**Victory Points (V.P.s):** Each A/C has two V.P. numbers. The lower number is awarded to the enemy side if the A/C is severely damaged by the end of play. The higher number is awarded if the A/C is shot down by the end of play. If both occur, only the higher number applies. 1 VP is also earned for each critical hit put on an enemy A/C, severe damage and critical hit V.P.s may not to exceed the shot down V.P. number of that A/C. The side with the most points at the end of play is the winner.

**Planet Earth:** Any A/C descending to altitude 0.0 or below immediately crashes and is removed from play.



## Quick Start - Fighting Wings Flight Tables

**A/C TURN CHART** (Banking - A/C must be in LB or ILB to turn left, RB or IRB to turn right)

A/C SPEED in FPs	EASY “EZ”	TIGHT “TT”	HARD “HT”	BREAK “BT”	EMERG. “ET”	SCALE MPH
1.0 - 1.5	1	60	90	NA	NA	50 - 75
2.0 - 2.5	2	1	60	90	NA	100 - 125
3.0 - 3.5	3	2	1	60	90	150 - 175
4.0 - 4.5	4	3	2	1	60	200 - 225
5.0 - 5.5	6	4	3-2	2-1	1	250 - 275
6.0 - 6.5	8	6	3	2	2-1	300 - 325
7.0 - 7.5	10	7	4	3-2	2	350 - 375
8.0 - 8.5	12	8	5	3	3-2	400 - 425
9.0 - 9.5	15	9	6	4	3	450 - 475
10.0 - 10.5	18	10	8	5	3	500 - 525
11.0 - 11.5	22	12	9	6	4	550 - 575
12.0 - 12.5	26	14	11	7	5	600 - 625

1. **Procedure** - Cross index A/C SPEED with turn rate to find the FPs required per  $30^\circ$  of facing change. Turn decel is incurred per  $30^\circ$  of facing change. No shots if ET rate used.
  2. **"90" or "60" entries** indicate max allowed facing change in degrees per FP.
  3. **"3-2" or "2-1" entries** indicate a split turning FP requirement; the left no. is for the first facing change and the right no. for the next facing. The cycle repeats for continuous turn at that rate.

## **FLIGHT PROCEDURES SUMMARY**

**A. Use throttle:** If at or below maximum level speed, take from 0 to highest no. shown on *Power vs. Speed Chart* for A/C's speed range and altitude. If idle, -0.5 to speed. If above max. level speed, power = 0.

**B. If Stalled:** No turns, rolls or transitions. Choose power. End attitude is STD, AFA is VD, (spend VFPs first). If speed < 1.0 when stalled, it becomes 1.0. Lose altitude normally (MC & OC per normal rules). Gain accel normally from diving and power. If A/C start speed  $\geq$  minimum it can fly normally again with a start attitude of steep dive.

**C. Choose Flight Attitude:** Remain in same attitude, or transition to new attitude. If transitioning, see procedure at right.

#### D. Execute A/C Move:

- Apply mandatory altitude change (MC) immediately.
  - Expend FPs in compliance with *Flight Proportion* restrictions of AFA. (HFPs & VFPs may be mixed in any order). If transition > 1 step, max VFPs for AFA must be used unless AFA is vertical.
  - Take optional altitude change (OC) at end of move if desired.
  - Each VFP expended changes altitude by 300 feet.
  - If transitioning through the vertical, or if using an optional reversal, do reversal at end of move. If starting in vertical attitude and a reversal is mandatory, reverse at start of move.

**E. Determine Speed Change:** A/C gains or loses 0.5 speed per 5 accel or decel left. Record on flight log - A/C's new attitude, altitude, speed, bank angle and any 0.5 FP, accel or decel carried forward.

## **FLIGHT PROPORTIONS TABLE**

Flight Attitude	Mandatory Changes (MC)	VFPs Allowed (Rest are HFPs)	Optional Changes (OC)
Level	None	None	± up to 1/4 +
Shallow	1/3 +	0 or 1 FP as VFP**	up to 1/3 -
Steep	1/2 +	1 to $\leq$ 1/2 of total FPs	up to 1/2 -
Vertical	1/3 +	$\geq$ 1/2 of total FPs	up to 1/3 -

**Notes:** \*\* No VFP if speed  $\leq$  2.0.

1. Use Total FPs (speed + half FPs) for all calculations on this table.
  2. Fractions indicate change in 100' alt. increments = to that portion of A/C's total FPs ("+" = round fraction up, "-" = round down).
  3. Mandatory changes (MC) are based on START flight attitude.
  4. VFPs allowed / required are based on AFA (average flight att.)
  5. Optional changes (OC) are based on ENDING flight attitude.

**Fractional Values Table FP Rounding** - If start attitude is:

- Level or shallow, round VFP portion down, HFP portion up.
  - Stall, Steep or vertical, round VFP portion up, HFP portion down.

FRACTIONAL VALUES (FVT)				
No.	1/4	1/3	1/2	2/3
0.5	0.0	0.0	0.0	0.5
1.0	0.0	0.5	0.5	0.5
1.5	0.5	0.5	0.5	1.0
2.0	0.5	0.5	1.0	1.0
2.5	0.5	1.0	1.0	1.5
3.0	0.5	1.0	1.5	2.0
3.5	1.0	1.0	1.5	2.5
4.0	1.0	1.5	2.0	2.5
4.5	1.0	1.5	2.0	3.0
5.0	1.0	1.5	2.5	3.5
5.5	1.5	2.0	2.5	3.5
6.0	1.5	2.0	3.0	4.0
6.5	1.5	2.0	3.0	4.5
7.0	1.5	2.5	3.5	4.5
7.5	2.0	2.5	3.5	5.0
8.0	2.0	2.5	4.0	5.5
8.5	2.0	3.0	4.0	5.5
9.0	2.0	3.0	4.5	6.0
9.5	2.5	3.0	4.5	6.5
10.0	2.5	3.5	5.0	6.5
10.5	2.5	3.5	5.0	7.0
11.0	2.5	3.5	5.5	7.5
11.5	3.0	4.0	5.5	7.5
12.0	3.0	4.0	6.0	8.0

## **Flight Attitudes Diagram**

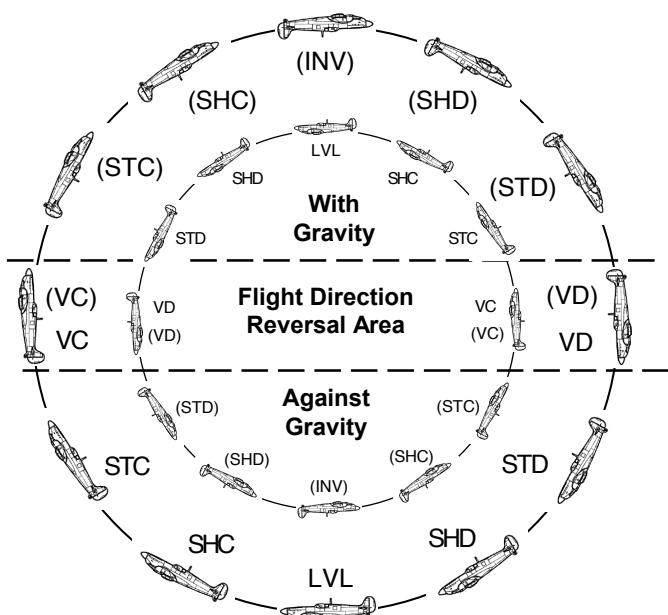
**Transition Procedure:** Find A/C's start attitude, select turn rate for a pull or push transition and count around *Flight Attitude Diagram* the number of attitudes steps given by turn rate to find ending attitude.

Transition Turn Rate = Flight Attitude Step Changes

**None = 0    EZ = 1    TT = 1    HT = 2\*    BT = 3    ET = 4**

- Outer circle shows flight attitude changes when pulling nose up.
  - Inner circle shows flight attitude changes when pushing nose down.
  - Average flight attitude (AFA) = attitude half way between start & end attitude (rounded forward, unless using  $\leq$  EZ rate, or exiting or passing through vertical while diving, then it is rounded backwards).
  - Push transitions limited to a maximum of HT=2.

**Gravity effects** - If start attitude and original AFA are in "with gravity" area, an extra attitude change is allowed (recalculate AFA); even if rate = "none" selected (decel still applies for this extra change). A push transition of > 1 step, or pushing  $\geq 1$  step against gravity, or an AFA in the against gravity area, invokes Negative-G. If so, turning is not allowed during move.



## Quick Start - Fighting Wings Combat Tables

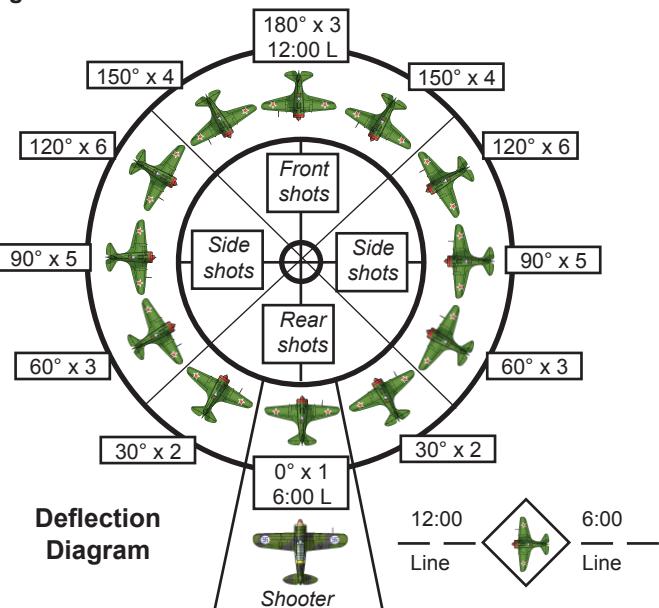
**Combat Procedure:** Use Deflection Diagram to fine deflection factor. Multiply A/C defense factor by deflection factor to get modified defense strength. Compare firepower at shot range to modified defense strength to get combat odds. Roll percentile dice on *Damage Table* for hits. Determine critical hits, if any. Range = 1 per hex, +1 per 300 feet of altitude between shooter and target.

**Deflection Aid Instructions:** Use deflection display & shooter vs. target heading difference on map to find initial deflection. If  $180^\circ$  to  $150^\circ$ , then "Front Shot". If  $120^\circ$  to  $60^\circ$ , then "Side Shot". If  $30^\circ$  to  $0^\circ$ , then "Rear Shot". Next - Adjust for pitch relationships between shooter & target as follows:

**Front Shots:** If both in level flight, or opposite steepness (e.g. SHC vs SHD or ISHD), no change. If both climbing or both diving, sum steps of each from level, move defl. toward-through  $90^\circ$  by sum. In all other cases, shift toward-through  $90^\circ$  by diff. in steepness (e.g., shallow vs steep = 1 diff.).

**Side Shots:** If both level, no change. If both climbing or diving, sum steps of each from level, move deflection toward  $0^\circ$  by half the sum rounded down. All other cases, move deflection away from  $0^\circ$  by half the sum rounded down.

**Rear Shots:** If both level, no change. If both climbing or both diving, move deflection away from  $0^\circ$  by difference in steepness. All other cases, sum steps of each from level, shift deflection away from  $0^\circ$  by sum.



### Gun Attack Percentile Roll - Die Roll Modifiers

**Special Lucky Shot Rule:** If cumulative modifiers will cause a percentile roll 01 to miss, a roll of 01 will still inflict 4 hits regardless of odds.

Recruit or Green pilot	= +30, +15	Each Snap Roll used	= +10	Target Size = $-05 \times \text{ADC modifier}$ (next to ADC def. no.)
Veteran or hero pilot	= -05 each	Firer used HT rate	= +10	Heading difference modifiers = Defense. Str. Multiplier
Ace or crack shot pilot	= -10 each	Firer used BT rate	= +20	*** NA if relative flight attitudes > one step apart.
Firer wounded or A/C inverted	= +20	Gun harmony effects: if range 2, 3 and if $\geq$ half actual guns fired are wing guns	= -15, -10	
Firing A/C severely damaged	= +15	Each range past gun harmony range 3 if $\geq$ half actual guns used are wing guns	= +10	
Firer in neg.-G or in or did slip	= +30	Shooter's 12:00 line superimposes target's 6:00 line with $180^\circ$ , $0^\circ$ heading diff.***	= -10, -20	

### COMBAT ODDS - DAMAGE TABLE

Percent Die Roll	(Shots at odds < 1-6 not allowed. Odds > 12-1 get -10 percent to die roll per odds over 12-1)												
	1-6	1-4	1-2	1-1	2-1	3-1	4-1	5-1	6-1	7-1	8-1	10-1	12-1
≤ 01*	4	4	5	6	7	8	9	10	12	14	16	18	20
02 to 05	2	3	4	5	6	7	8	9	10	12	14	16	18
06 to 11	1	2	3	4	5	6	7	8	9	10	12	14	16
12 to 22	-	1	2	3	4	5	6	7	8	9	10	12	14
23 to 39	-	-	1	2	3	4	5	6	7	8	9	10	12
40 to 59	-	-	-	1	2	3	4	5	6	7	8	9	10
60 to 76	-	-	-	-	1	2	3	5	5	6	7	8	9
77 to 87	-	-	-	-	-	1	3	4	5	5	6	7	8
88 to 93	-	-	-	-	-	-	2	3	4	5	5	6	7
94 to 96	-	-	-	-	-	-	-	2	3	4	4	5	6
97 to 98	-	-	-	-	-	-	-	-	-	-	2	4	5
≥ 99	-	-	-	-	-	-	-	-	-	-	-	-	-

#### A/C CRITICAL AREA HIT TABLE (D10)

D10	Area Hit	D10	Area Hit
≤ 2	Engine	6	Cockpit Area
3, 4	Fuel tanks	7, 8	Wings
5	Hollow space	≥ 9	Controls

#### Modifiers:

- 1 if final deflection =  $150^\circ$  or  $180^\circ$ .
- +1 if final deflection =  $30^\circ$  or  $0^\circ$ .
- 1 if multi-engine A/C.
- 1 if hit by front shot down 12:00 line.

**Notes:** Crack shots area roll  $\pm 1$  at range  $\leq 2$  or vs. bomber may pick area at range  $\leq 1$ . Double crack shots may pick area hit at range  $\leq 2$ .

#### CRITICAL HIT EFFECTS TABLE (D10)

Area Hit	1 or less	2 to 3	4 to 6	7 to 8	9 or more
Engine:	Eng. seizes	Eng. Fire!	Power loss	Power loss	Oil Leak
Fuel Tanks:	A/C blows up*	Fuel Fire!	Fuel Leak	Fuel Leak	No effect
Cockpit:	1 crew KIA	1 crew KIA	1 crew WIA.	Lose 1 N gun	No effect
Wings:	Wing breaks off*	Wing spar	+1 banks / slips	Lose 1 W gun	+1 decel
Controls:	Cables severed*	Tail structure	+1 banks / slips	No BTs, ETs.	Dam. cable

**Notes:** Double crack shots = -2 to effects roll. If all engines seized, all pilots killed, or an asterisk result occurs, A/C is destroyed. If "WIA" twice, a crewman is killed. Each *wing spar*, *tail structure*, *oil or fuel leak* and *dam. cable* hit provides a -1 mod. to subsequent rolls in that area. 2 *wing spar* or *tail structure* hits destroy an A/C. +1 decel is permanent from torn wing skin. Engine power loss reduces max accel by one fraction (i.e., from full to 2/3, 1/2, 1/3, 1/4, then eng. seized). For each fire, roll D10 at end of turn, (1= A/C blows up, 9 or 10= fire out). -1 if fuel fire. +1 if speed 8.0+.