

INSTANT THUNDER

FAST PLAY JET COMBAT

V1.1

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INSTANT THUNDER

INTRODUCTION

These rules provide an abstract representation of air to air combat between jets. They are designed to be equally suitable for solo as well as two players. The scale is individual jets.

EQUIPMENT

- A playing area marked out as a 13 x 4 grid (see below)
- Counters or models to represent aircraft, missiles and environmental markers (such as cloud)
- A simple log record detailing each aircraft.
- A pack of ordinary playing cards (jokers removed)

THE MAP

The gridded playing area represents the portion of the sky in which the combat takes place. It is a 13 x 4 grid marked as follows:

HRT													
CLB													
DMD													
SPD													
-	K	Q	J	T	9	8	7	6	5	4	3	2	A

The notations down the left hand edge are (in descending order of height) HEARTS, CLUBS, DIAMONDS and SPADES. The notation along the bottom edge represents individual playing cards and by cross referencing the two a location square is described (e.g. The top left hand square of the playing area is the King of Hearts).

The four rows are ALTITUDE BANDS. Thus, an aircraft located in the CLUB band is higher than one located in the DIAMOND band.

Within the bands the individual squares are also in descending order of height (from King to Ace). Thus, an aircraft in the Queen of Diamond square is higher than one in the 8 of Diamond square. However, both these aircraft would be lower than an aircraft in the 2 of Clubs square as the Club altitude band is higher than the Diamond.

The position of the aircraft in the game is important as it will be seen that a higher aircraft is in a position of advantage over a lower one.

The pack of cards also function as a random number generator and they have the following numerical values; King = 13, Queen = 12, Jack = 11 then face values down to Ace = 1.

Some game functions require the RANGE between opposing aircraft to be established. This is done by counting across the grid laterally (never up or down between altitude bands). If

counting between two aircraft do not include the square occupied by the counter but do include the square occupied by the target (e.g. *the range between aircraft located in the squares 10 of Hearts and 3 of hearts, is 7*).

Note that when counting laterally some of the end squares in each Altitude band are linked. The King of Spades is linked to the Ace of Diamonds; the King of Diamonds is linked to the Ace of Clubs and the King of Clubs is linked to the Ace of Hearts. The Ace of Spades and the King of Hearts are not linked in this way and lead 'off map'. Thus, aircraft in the King of Spades and the Ace of Diamonds are adjacent to each other (range 1). Aircraft in the squares 2 of Hearts and 9 of Clubs are 6 squares apart laterally.

AIRCRAFT CHARACTERISTICS

The basic flight abilities of an aircraft are expressed by two numbers. These are the VERTICAL (V) number and the lateral MANOEUVRE (M) number. The higher these numbers are, the more likely it is that an aircraft will be able to move on the grid after deployment.

MOVEMENT OPTIONS

When an aircraft has its movement phase the owning player must choose from the following options:

NO MOVEMENT

The player declines to move the aircraft. It remains in the deployment square. The movement phase is over for that aircraft.

If the player decides to attempt to move his aircraft then he can choose to move either vertically, laterally or both (in any order).

VERTICAL MOVEMENT (V)

This is an attempt to move the aircraft into a higher or lower altitude band. The player turns over a card. If the number is less than or equal to the aircraft's current V number then the manoeuvre is successful. The aircraft is moved directly up or down ONE level on the grid into the same numbered square. Note that an aircraft in the Hearts altitude band cannot climb and an aircraft in the Spades altitude band cannot dive. If the card drawn exceeds the V number then the vertical movement cannot take place this turn.

(Eg: An aircraft is located in the 9 of diamonds square. It has a V number of 5. The owning player declares a V move. He draws a card. It is a 4 of hearts. As this is less than the V number the player must now move the aircraft either up to the 9 of clubs or down to the 9 of spades. Had he drawn a higher card than a 5 then the vertical movement would have failed.)

LATERAL MOVEMENT (M)

This is an attempt to move an aircraft horizontally on the grid. The owning player announces the attempt and turns a card. If the number is less than or equal to the aircraft's M number then the attempt is successful. The aircraft is moved across the grid horizontally. The distance moved is between 1 square and the number drawn on the card, at the owning player's discretion. A successful M manoeuvre must always result in at least 1 square of lateral movement.

(Eg: An aircraft has an M number of 6. Its player announces an M manoeuvre. The card drawn is a 3 of diamonds. The owning player must move the aircraft 1-3 squares horizontally. Had the player drawn a 7 or more then no lateral movement allowed this turn)

Note that an aircraft moving horizontally may move into a different altitude band by moving off the end of a row (e.g. from Ace of Diamonds to King of spades). This is perfectly acceptable and does not preclude a V manoeuvre in the same turn.

COMBINING V and M MOVEMENT.

V and M attempts may be made in any order. There is no obligation to move. An aircraft may solely attempt one type or the other, both or none, at his discretion. A player does not have to specify in which direction any move will be made before he draws the card. However, a player must make clear what he is attempting to do before drawing the card. (It will be enough to announce "V" or "M"). If the attempt is successful that type movement must be taken BEFORE drawing a further card, if any.

EXAMPLES OF MOVEMENT.

i) Aircraft is located in the 6 of Diamond square. It has a V number of 4 and an M number of 7 (V4-M7). Player attempts a V move first. Card drawn is 10 of Spades. No V move. He then attempts an M move. Card drawn is 9 of hearts. No M move possible. Aircraft remains in place. End of turn.

ii) Aircraft in Q of Clubs. V5-M6. It attempts an M move and draws a 4 of spades. The aircraft must now move 1-4 squares horizontally. The player decides to move 3 squares left. The aircraft finishes in the 2 of Hearts square. The player now has the option of trying to dive into the 2 of Clubs square. He declines to attempt this. End of turn.

iii) Aircraft located in the King of Diamonds. V3-M5. He announces a V move and draws 2 of Spades). This allows him to climb or dive 1 Altitude band (which he is obliged to do). The aircraft dives into the King of Spades. The player then announces an M attempt. He draws 5 of hearts. He must now move 1-5 squares horizontally. The aircraft moves 2 squares to the left, finishing in 2 of Diamonds. End of turn.

iv) Aircraft located in 7 of hearts. V5-M5. He announces a V attempt (he can only dive at this altitude band). He draws a 2 of Spades and dives to 7 of Clubs. He then announces an M attempt but draws a 6 of spades. His M attempt has failed and the aircraft finishes in 7 of clubs. End of turn.

There are no obstacles whilst moving across the grid. Aircraft of either side may freely move into or through squares containing other aircraft. In theory an unlimited number of aircraft may occupy the same square at the end of a turn.

Aircraft may exit the grid via the King of Hearts or Ace of Spades square. They do so by expending a square of lateral movement to move off the grid. This may be a temporary exit (in which case the aircraft will be redeployed on the map next turn) or a permanent exit (aircraft may not return). The conditions which allow an aircraft to exit must be specified at the start of a scenario.

SEQUENCE OF PLAY

1. AIRCRAFT DEPLOYMENT
2. AIRCRAFT MOVEMENT
3. COMBAT
4. REMOVAL OF AIRCRAFT FROM THE MAP.

DEPLOYMENT.

For each aircraft in play draw a playing card from the deck. The aircraft are placed on the grid in the indicated square.

MOVEMENT

Each aircraft may attempt to manoeuvre on the grid in accordance with the movement rules. Movement is sequential. The aircraft at the LOWEST altitude moves first, followed by the next lowest and so on until the highest aircraft has moved, attempted to move or passed. Once the highest aircraft has completed its movement this phase is over.

COMBAT

Each aircraft may attempt a combat action in accordance with the combat rules. Combat is not simultaneous. Results are applied before moving onto the next aircraft. The aircraft at the HIGHEST altitude makes a combat action first (if possible or desired), followed by the next highest aircraft and so on down to the lowest. Once the final aircraft has taken a combat action (or passed) then the combat phase is over.

REMOVAL OF AIRCRAFT FROM THE MAP

All aircraft are removed from the grid in preparation for the next turn.

This completes one game turn.

FACING CONVENTIONS

If using models or counters to play the game the direction faced by an aircraft on the grid has no bearing on play. However, particularly in larger games, aircraft may be oriented in a standard way as a reminder to players.

When aircraft are deployed onto the grid they should be faced UP ('North' or '12 O'clock'). Once aircraft have completed their movement phase they should be faced RIGHT ('East' or '3 O'clock'). When an aircraft has taken a combat action (or has acted defensively thereby giving up its own combat action) then it should be re-faced UP.

Using this method it is clear which aircraft have moved, fired etc. without resorting to bookkeeping.

DAMAGE

Each aircraft is given a HIT POINTS value.

An aircraft may be damaged by enemy gunnery or missiles. Such damage is expressed in terms of Hit Points. A running record is kept for each aircraft of the number of Hit points sustained. When an aircraft receives Hit points totalling equal to or more than its hit point value it is shot down and immediately removed from the game.

An aircraft that receives half or more of its hit point total (round fractions UP) but not enough to shoot it down is CRIPPLED.

An aircraft which is damaged but has received less than half of its initial hit point value is unaffected.

EXAMPLE An aircraft with a Hit Point Value of 7 is shot down when it sustains 7 or more hit points. It is crippled by 4-6 Hit Points. It is damaged but otherwise unaffected by 1-3 Hit Points.

CRIPPLED AIRCRAFT

A crippled aircraft immediately has its V and M numbers halved (round up). If it has a Radar number this is also halved. In addition any gunfire from the crippled aircraft suffers a +2 modifier to the number of guesses required.

EXAMPLE An aircraft with a Hit point value of 7 receives 5 Hit points and is crippled. Its starting numbers are V5-M6. It also has a Radar number of 6. Immediately the aircraft is crippled its numbers become V3-M3. Its Radar number is reduced to 3. If, later in the game, it fires its cannons at a target then +2 is added in addition to any other modifiers for shooting.

COMBAT ACTIONS

As described in the sequence of play, an aircraft at a higher altitude has the opportunity of firing before a lower one.

Combat actions are voluntary. An aircraft is never obliged to fire.

Combat actions fall into two broad categories: GUNS and MISSILES.

GUNS

Jets may carry either CANNON or MACHINE GUNS.

Cannons have a lateral range of 3 SQUARES.

Machine Guns have a lateral range of 2 SQUARES.

This range does not include the shooter but does include the target. Range is always measured laterally, never vertically.

(E.g. An aircraft is located in the Ace of Clubs square. If armed with Cannon it may fire at a target in the 4/3/2 of clubs or K/Q/J Diamond Squares. If armed with Machine Guns it would not be able to reach the 4 Clubs or J Diamond Squares.)

Aircraft may not fire at a target in the same square as itself. Only one target may be fired upon by an individual aircraft per turn. If there is a choice of targets then the firer may select any as

desired. It does not have to fire at the closest. Aircraft do not block shots. Intervening aircraft are ignored.

If an aircraft is in the same square as an enemy aircraft then it may neither shoot nor be shot at.

If there is more than one friendly aircraft in a square then only ONE may shoot out (at the choice of the owning player).

If there is more than one potential target in a single square then the shooter may choose which target to engage.

SHOOTING PROCEDURE.

- Shooter nominates target.
- Shooter marks off one ammo from his log for that aircraft.
- Measure the range from shooter to target (maximum 3 for Cannon, 2 for Machine Guns).
- The target aircraft declares whether it is JINKING.

If the target jinks it is actively defending against the shooter by trying to spoil its aim. The target immediately draws cards against both its V and M numbers. If the cards drawn are equal to or less than the respective numbers then add 1 to the range for each such card. The target aircraft stays in the same square.

Regardless of whether the jinking attempt was successful or not the target aircraft loses its right to take a combat action this turn. (However, aircraft that have already fired earlier in the turn and are now fired upon may freely jink without penalty).

- The shooter will now have a target number. This being the range, plus any adjustment for successful jinking. The shooter draws a reference card from the pack. He must then correctly guess whether the next card drawn will be higher or lower in value. He continues to do this as long as he is correct. Once the number of correct guesses equals the target number then the shot is successful. If, at any stage in the sequence, the shooter makes an incorrect guess about the next card then the shot has missed and has no effect on the target.

- If an aircraft is fired on more than once in a turn and decides to jink it draws separate cards for each jinking attempt

EXAMPLE OF GUNNERY

An aircraft armed with cannon is located at Q of Clubs. It has a target located at 10 Clubs. This is within cannon range so the aircraft fires. The player marks off one ammo used.

The range to the target is 2 squares.

The target declares he is jinking (which means he foregoes the right to fire this turn). The target aircraft has a V number of 4 and an M number of 6. The target draws a card against his V number. This is the 5 of spades. This is a fail as it exceeds the V number (4). He then draws 2 of Hearts against his M number of 6. This is a successful jink and 1 is added to the range (had both draws been successful then 2 would have been added to range).

The target number for the shooter is 3 (2 for range, 1 for the jink). He needs to make 3 correct guesses to hit the target.

The shooter draws a reference card:

3 Clubs. First guess: HIGHER. Next card drawn is 10 Hearts. (1 Correct)

(The shooter then has to guess against 10 hearts)

Second guess LOWER. Next card drawn is 5 Diamonds. (2 correct)

(The shooter then has to guess against 5 Diamonds)

Third guess HIGHER. Next card drawn is 5 Hearts.

The third guess fails as the next card was not higher than a 5.

The shooter has missed the target.

Note that had the target not jinked and added 1 to the score then the shooter would have only required 2 correct guesses. In the example above this would have resulted in a hit.

EFFECT OF GUNNERY HITS

The aircraft lists show how effective its guns are. This is expressed as a negative number (e.g. -3, -4, -5 etc).

If gunnery results in a hit draw a card and subtract the gunnery effect number for the shooter. Any remaining result is the number of HIT POINTS scored on the target. If the resulting number is 0 or less then no damage has been inflicted.

EXAMPLE: An aircraft scores a cannon hit on a target. The shooter's gunnery effect number is -3. The shooter draws a card for damage. It is the 9 of Clubs.

6 hit points are scored on the target (9-3).

Had the card drawn been 3 or less then no damage would have resulted.

COMBAT ACTION PROHIBITIONS

If an aircraft has either:

- Jinked against incoming gunfire (whether successful or not)
- Engaged an incoming missile (whether successful or not)

or

- Suffered any damage this turn (1 Hit Point or more)

then it may not take a combat action this turn unless it has already done so.

COMBAT ACTION - MISSILES

Aircraft can use missiles to attack enemy targets. Missiles are either HEAT SEEKING (HS) or RADAR HOMING (RH).

An aircraft may not fire missiles and guns in the same turn, or fire both HS and RH missiles in the same turn. Both types of missile move across the grid laterally to try and reach their target square. Movement procedures are common to both types of missile and are covered under one heading.

An aircraft may not attempt to launch a missile if it is prohibited from using a combat action due to jinking, engaging an enemy missile earlier in this turn or because it has sustained damage earlier in this turn.

An aircraft may not attempt missile use if there is an enemy aircraft in the same square. If more than one friendly aircraft occupies the same square then only ONE aircraft in that square may take a combat action.

An eligible aircraft which wishes to fire a missile must first obtain a lock-on and the procedure for this differs depending on whether a HS missile or RH missile is to be used.

MISSILE LOCK ON - HEAT SEEKING

The aircraft nominates its intended target and declares a lock on attempt in its combat phase. The target may not be within the minimum range listed for that missile in the list (this is lateral range - never measure vertically when calculating range).

Once the aircraft declares a lock on attempt this counts as the combat action for that turn, regardless of whether the lock on is successful or not.

To obtain a lock on for HS missiles:

- Add the V and M numbers of the launching aircraft
- To this also add the missile Lock-On number from the performance list
- From this total deduct the target's V and M numbers
- If the target is in a HIGHER Altitude band add 1 to the score for EACH altitude band difference
- If the target is in a LOWER Altitude band deduct 1 for EACH altitude level difference.
- If the final total is 0 or less count it as '1'.
- If the final total exceeds 12 then consider it to be '12'

Using the final total draw a single card. If the value is equal to or less than the total then a lock on has been achieved. The aircraft may go on to launch a missile.

If the card is of a higher value then the attempt has failed.

EXAMPLE OF HS MISSILE LOCK ON ATTEMPT

An aircraft located at Jack of Diamonds has an enemy aircraft at 7 Clubs. The shooter is not prohibited from taking a combat action by any other events earlier in the turn. It tries to lock on a HS missile.

The Shooter has a V number of 4 and an M number of 6. The lock on number of the missile is 5. Add all these together for a total of 15. The target is one Altitude band higher than the shooter (CLUB v DIAMOND) so add a further 1 to the total, which is now 16.

The target has a V number of 3 and an M number of 5. Take these away from the total (16-8) for a final total of 8.

The shooter draws a card which is 6 Diamonds. The lock on is successful and a HS missile may be launched. If the card had exceeded 8 then the lock on would have failed and the shooter's combat action would be over.

MISSILE LOCK ON – RADAR HOMING

An aircraft wishing to use a Radar missile must obtain a lock on.

Providing the potential target is not within the minimum range of the RH missile and the shooter is not prohibited from taking a combat action the player nominates the intended target and checks for lock on as follows:

- Take the Radar Number of the firing aircraft
- Add 1 per Altitude band that target is higher or deduct 1 per Altitude band that target is lower.
- Draw a card and if the value is less than or equal to the total a Radar lock on has been achieved.

If successful the aircraft may launch a Radar missile at the target.

If the lock on attempt fails that terminates the shooter's combat action for that turn.

EXAMPLE OF RADAR LOCK ON ATTEMPT.

An aircraft located in 4 Clubs tries to lock on to a target in 9 Spades. The aircraft has a Radar number of 7. This is reduced by two because the target is two altitude bands lower (SPADES v CLUBS). The player needs to draw a 5 or less to secure a lock on. He draws 7 Diamonds and fails to get a lock on.

This terminates the combat action for that aircraft.

MISSILE LAUNCH

Both HS and RH missiles are represented by models, counters or some such marker. If the launching aircraft has locked on to its target the owning player then draws a card and lays it face up. This is the reference card for the missile's first turn of flight.

Once the reference card has been turned over the player must decide whether or not to launch a missile at the target. If he decides not to launch then the procedure is aborted. The combat action is terminated at this point.

If the player decides to launch then mark the use of one missile from the aircraft log. The target aircraft must be the one locked onto and cannot be changed. Place a missile marker in the same square as the launching aircraft

MISSILE MOVEMENT

Once launched the missile marker moves laterally across the grid to try and reach the square containing the target. Missiles never use vertical movement, although they may well change altitude bands during the course of movement by moving from linked squares (e.g. from King of Diamonds to Ace of clubs).

A missile has a number of 'turns of flight'. This is the number of cards (excluding the initial reference card) that may be used to move the missile across the grid. If a missile enters the same square as its target then a potential hit has been scored.

If the missile uses up its 'turns of flight' without reaching its target square it is removed from play.

On its first turn of flight the player draws a card and compares it to the reference card. The difference in value between these cards is the number of squares the missile moves toward its target. If there is no difference in value (i.e. the same value card is drawn) then the missile is removed from play. If the missile has not reached its target and still has turns of flight left then a further card is drawn and compared to the previous card for the number of squares to be moved. This continues until either the target is hit, the missile uses up its turns of flight without reaching the target or two cards of the same value are drawn.

EXAMPLE OF MISSILE FLIGHT: An aircraft located at 10 Diamonds has successfully locked on to a target at Q Clubs. The reference card drawn is a 4 of Spades. The player decides to launch a missile. He marks his log to reflect the missile usage and places a marker on the grid. The missile to be used has 3 turns of flight.

He turns over a card. It is 9 Diamonds. This is compared to the value of the reference card (4) to give a value of 5. The missile moves 5 squares, from 10 Diamonds to 2 Clubs. The player draws a second card which is Q of Hearts. The Queen has a numerical value of 12 and this is compared to 9 Diamonds to give a difference of 3. The missile moves 3 squares from 2 Clubs to 5 Clubs.

The player draws his third and last card (the missile has only three turns of flight). The missile is 7 squares away from the target. He draws the King of Spades (value 13). This is compared to the Queen of Hearts (value 12) which results in only one square of movement. The missile reaches 6 of Clubs and is removed.

The missile attack has failed.

MISSILE ATTACKS AND EFFECTS

If a missile successfully reaches its target then a potential hit has been scored.

The target aircraft must now declare whether it is ENGAGING the attacking missile. If he does so he will attempt to outmanoeuvre the missile, causing it to miss.

If the aircraft engages the missile, whether successful or not, then the target aircraft may not take a combat action of its own in this turn, unless it has already done so. An aircraft is not obliged to engage an incoming missile. This is a voluntary action. If an aircraft decides not to engage a missile then the missile has hit the target.

ENGAGING

The target aircraft selects either its V or M number (whichever is higher). This number is modified by the missile's own Manoeuvre number. The target draws a card. If the value of the card is equal to or less than the total V or M number used (as modified) then the target has successfully dodged the missile which is removed from play. If the number is exceeded by the card drawn then the dodge has failed. If attacked by several missiles in the same turn the target draws fresh cards for each dodge attempt.

MISSILE EFFECTS

If a missile hits then draw a card and modify by the missile's effect number. This is the number of hits scored on the target (if any).

EXAMPLE OF MISSILE ATTACK

A missile reaches its target square and attacks. The missile has a manoeuvre number of -2 and an effect of -3.

The target aircraft declares it is engaging the missile to try and dodge it. The target aircraft has a V number of 3 and an M number of 6. The M number is used in the attempt to dodge the missile. The M number is reduced to 4 as the missile has a manoeuvre number of -2.

The target needs to draw a card of 4 or less to dodge the missile. He draws a 7 of Spades. The attempt to dodge the missile has failed.

The attacking player draws a card for effect. This is the 9 of Hearts. It is reduced to 6 because the missile has an effect rating of -3.

6 Hit points are scored on the target. The target has an initial Hit value of 7 but has already sustained 2 Hit Points from cannon fire earlier in the game. The missile hit takes the score to 8 Hit Points, which exceeds the target's Hit Point value. The target is shot down.

ENVIRONMENT

Some squares may be designated as having an environmental feature which will impact on play.

CLOUD

A cloud square should be determined at the outset by drawing a card and placing an appropriate marker in the indicated grid square to designate it. Cloud squares may be

individual or linked adjacent squares which form a cloudbank. If a scenario specifies the presence of a cloudbank of, say, 4 continuous squares then only one card need be drawn. This indicates the leftmost square of the cloudbank and all other markers are placed accordingly.

An aircraft in a cloud square has the following effects:

- The aircraft may neither shoot, or be shot at, with guns or heat seeking missiles.
- An aircraft in a cloud square may shoot or be the target of radar missiles

Note that only aircraft actually in a cloud square are affected. Intervening cloud squares between a shooter and its target do not block shots.

THE SUN

The sun represents a blind spot for aircraft 'looking' into that square. It may be designated by drawing a card. However, the sun square may only be located in the HEARTS Altitude Band. Use the value of the card drawn to indicate which HEARTS square the sun is placed in.

Aircraft in the sun square may freely shoot out with any weapons as per normal rules.

If shooting at a target in the sun square apply the following:

- Heat-Seeking lock-ons suffer a -2 penalty for the attempt.
- Gunnery has a +2 modifier to the final guess number for a hit.

Sun and Cloud squares should normally be fixed throughout a scenario (that is they are not redeployed each turn, as aircraft are).

If a cloud square is placed in the same square as the sun then the cloud square has precedence.

This ends the basic rules...

OPTIONAL RULES

CREW QUALITY

Aircrew can be defined as being of different quality as follows:

ACE an experienced pilot who has scored at least 5 victories. Exceptionally, this may apply to an otherwise outstanding pilot who has been unable to achieve the necessary kills (possibly due to lack of combat opportunity)

EXPERIENCED a veteran pilot; well trained.

AVERAGE a competent pilot who has progressed normally to attain this level.

NOVICE newly qualified, inexperienced or inept.

In game terms the crew ratings have the following effects:

AVERAGE No effect.

EXPERIENCED Increase all aircraft performance numbers by 1. This includes V, M, special manoeuvre numbers and Radar rating. Additionally, when shooting cannon or machine guns deduct 1 from the number of guesses needed to score a hit (a final total of 0 indicates an automatic hit).

ACE as 'experienced'. In addition an ace pilot always deploys his aircraft last on the grid and has the choice of TWO cards when determining which square to use. If an Ace becomes a double Ace (by scoring another 5 kills) add a further card for each 5 victories. For example an Ace with 15 kills would have the choice of 4 cards when deploying each turn.

If there is more than one opposing Ace in a scenario then the players draw their cards in secret and decide which card to use. These are simultaneously revealed. In a Solo game the highest ranked Ace chooses last, otherwise cut cards for priority.

NOVICE all aircraft performance numbers, including Radar, are reduced by 1. Novice pilots may not perform any special manoeuvres and may attempt **either** an M or V manoeuvre in a turn, not both. When using cannon or machine guns, increase the target guess number by 1.

For multi crew aircraft the ability rating reflects the crew as a whole.

SPECIAL MANOEUVRES

Special manoeuvres are distinct flight actions that may move the aircraft across the grid in a specific way.

A player must declare the special manoeuvre at the appropriate point in the movement phase. The aircraft in question may not combine a special manoeuvre with normal V or M movement. Only one special manoeuvre may be performed/attempted in a turn.

Pilots rated as **NOVICE** may not use special manoeuvres.

Crippled aircraft may not attempt special manoeuvres.

The special manoeuvres are given their own numbers on an aircraft's performance listing. These are; **DISPLACEMENT ROLL (R)**, **ZOOM CLIMB/DIVE (Z)**. To perform the manoeuvre

requires the drawing of a card equal to or less than the number given. The special manoeuvre must be taken in full if the attempt is successful. Special Manoeuvre numbers are modified if a pilot is experienced or better (+1).

If the manoeuvre fails the aircraft remains in its deployment square. It may not attempt V or M movement in the same turn.

Special manoeuvre numbers play no role in jinking against enemy gunfire or engaging an incoming missile.

DISPLACEMENT ROLL (R)

This covers such manoeuvres as Immelmann turns, Split-S, Vertical Rolls etc. The aircraft moves vertically one altitude band (climbing or diving as desired) and then horizontally one square (left or right). This is the final resting square.

Displacement rolls may be used to exit the grid if the aircraft is eligible and the final square of movement would take the aircraft off the King of Hearts or Ace of Spades square.

ZOOM CLIMB/DIVE (Z)

Not all aircraft can perform these manoeuvres (which are normally appropriate to afterburner-equipped aircraft which can readily translate high energy states into vertical movement).

An aircraft that successfully performs a Zoom Climb is moved TWO Altitude bands UP the grid. A Zoom Dive moves an aircraft two Altitude bands DOWN the grid. No horizontal movement is allowed. The aircraft finishes in the same value square in the new altitude band.

FORMATIONS

Aircraft normally try to maintain some sort of tactical formation in the air to provide mutual support. The following rules reflect this in an abstract way.

At the end of a turn all aircraft are removed from the grid as normal. If the owning player wishes to create a formation or formations next turn he must draw a card for each aircraft to see if it is allowed to join a formation next turn. This applies even to aircraft that may have finished the previous turn in formation.

This depends on the owning player drawing a card for each aircraft and scoring equal to or less than the formation number for the aircraft. The formation number is determined by the aircrew quality on that aircraft as follows:

QUALITY	FORMATION NUMBER
NOVICE	6
AVERAGE	8
EXP/ACE	10

These numbers are HALVED if the aircraft is crippled.

If an aircraft fails the draw it must be deployed as a singleton next turn. Aircraft that pass their draw may create a formation (or formations) for deployment next turn. If an aircraft passes the formation draw it is not *required* to become part of a formation. It may still be deployed as a singleton if desired.

EXAMPLE OF FORMATION CREATION

A player has 4 aircraft. They are all average pilots and each need to draw 8 or less to be eligible to create a formation. Assuming two passed their draw the two aircraft could either create a two-ship formation or remain as singletons. The two aircraft that failed their draw must remain as singletons.

Had three aircraft passed the draw they could have formed a single three-ship formation or a two-ship with the other remaining as a singleton

PERMITTED FORMATIONS

A formation consists of 2, 3 or 4 aircraft. The formation must consist of at least 1 average or better ability crew. The aircraft must be of the same type (different marks of the same type are allowed).

A two-ship formation consists of two aircraft occupying either the same or adjacent squares (horizontally).

A three-ship formation will have two aircraft in the same square and a third in an adjacent square.

A four-ship formation will have two aircraft in each of two adjacent squares.

FORMATION DEPLOYMENT

To deploy a formation of aircraft draw one card. Any aircraft of the formation is placed in the indicated square. The remaining aircraft of the formation are deployed around this aircraft in any permitted formation. If the formation includes an ACE then more than one card may be drawn as per normal Ace rules and the owning player chooses the desired square for deployment.

If both sides are deploying formations then draw cards for the order in which opposing formations are deployed (*e.g. assign one side as 'RED' and the other as 'BLACK' and deploy a formation from the appropriate side as called for*).

Formations are deployed AFTER singleton aircraft.

EXAMPLE: A player has a formation of 4 aircraft. All pilots are average. He draws a 6 of Diamonds. He places one aircraft in the 6 of diamonds square. He places a second aircraft in the same square. The remaining two aircraft must be placed together in either the 5 Diamonds or 7 Diamonds square to form the permitted formation.

If the player had a two-ship formation in the above example then one aircraft MUST be placed in the 6 Diamonds. The other aircraft may be placed in either the 5, 6 or 7 Diamonds.

For a Three-ship formation one aircraft must be placed in the 6 Diamonds. The other two could be placed together in the 5 or 7 Diamonds or a second aircraft could be placed in the 6 Diamonds with the third deployed in the 5 or 7 Diamonds to complete the formation.

Aircraft deployed in formation still move and have combat individually and are never required to remain in formation. Formation only affects deployment.

Using formation rules it is possible for aircraft of opposing sides to deploy in the same square. In this case, the order of precedence for movement of aircraft in the same square is determined by crew quality. A novice would take its movement first, then average, then experienced then ace. If there is more than one aircraft with the same category of crew then draw a card for each to determine order: lowest goes first.

UNGUIDED AIR TO AIR ROCKETS (AAR)

This covers the use of dedicated AAR as well as Ground Attack Rockets that are used in an emergency against air targets.

Certain aircraft may carry a volley of rockets. They can be fired either as a full volley or as a half-volley against an eligible target. If fired as a half volley then only one such shot is allowed per turn. This preserves the remaining half volley for use later.

Normal combat prohibitions apply and AAR cannot be combined with any other form of shooting in a given turn.

PROCEDURE

The shooter nominates an enemy target. This must be at a range of 2 – 8 squares horizontally. The shooter announces whether he is firing a full volley or half a volley and notes his log accordingly.

The shooter then draws one or more cards from the deck. If any of the cards drawn is the same value as the range in squares to the target then a hit has been scored (e.g. if the target is at 6 squares then the shooter must draw a 6 to hit. Any other card is a miss).

The number of cards drawn depends on the ability rating of the shooter and the range to target as follows:

ACE / EXPERIENCED = 3 cards

AVERAGE = 2 cards

NOVICE / ANY CRIPPLED AIRCRAFT = 1 card

Add 1 card if the range is 2-3 squares.

If a hit is scored then draw a card for hit points. The target cannot jink against or dodge AAR.

The effectiveness of AAR is: Full Volley = -1 Half Volley = -3

Example of AAR

An aircraft in square 8 Diamonds is carrying a full volley of AAR. It has an enemy aircraft at 4 diamonds. The range to the target is 4 squares. The shooter is not prohibited from taking a combat action and declares a full volley shot at the target. He marks this off his log. The shooter is an average-rated crewman and there is no bonus for range. He therefore draws two cards. First card is Q of Hearts (miss). His second card is 4 Spades. This is a hit as it exactly equals the range to the target. He then draws for effect; 10 of clubs. This results in (10-1) = 9 Hit Points and the target is shot down.

Targets in a cloud square cannot be engaged by AAR. If the target is in a sun square deduct one from the number of cards to be drawn by the shooter. If this results in zero cards to be drawn then the shot cannot be taken.

PANIC

Aircrew rated as NOVICE have to test to see if they panic at certain times during the game.

Novice aircrew check whenever their aircraft is hit and sustains damage, but is not shot down.

Drew cards equal to the number of hits currently sustained by his aircraft (not just on this turn). If ANY of the cards drawn is a PICTURE card (K, Q or J) then the pilot/crew immediately ejects and the aircraft is lost. The aircraft scoring the Hit Point(s) that caused the panic is credited with the kill.

Note that crew only test for panic on the turn they SUSTAIN Hit Points.

MISSILE COUNTERMEASURES

Depending on the era and scenario, aircraft may carry countermeasures to try and decoy enemy missiles. CHAFF is used against radar missiles; FLARES are used against heat-seekers. Aircraft have a finite number of countermeasures and these are marked off when used.

Aircraft may release countermeasures at TWO specific times.

1) TO DEGRADE LOCK ON ATTEMPTS

An aircraft that **does not move out of its initial deployment square** (either because it passed or because it failed to achieve its intended movement) may release chaff, flares or both at the end of its movement phase (only one of each type may be released at this point).

During the combat phase of that turn any aircraft trying to lock-on a missile of the relevant type suffers a minus 2 penalty. Chaff does not affect heat-seeking lock-ons; flares do not affect radar lock-ons.

The penalty for heat-seekers is in addition to any penalty due to the target being in the sun square.

2) TO DECOY INCOMING MISSILES

If an aircraft is the target of an incoming missile then the target aircraft may release flares or chaff (depending on the missile type) to try and decoy it.

The target may release one chaff or flare after each movement of the missile tracking it (this includes an attempt to decoy a missile which enters the target square).

To see if the missile is successfully decoyed, draw a card for each countermeasure and compare this to against the 'decoy' number for the missile. If the card is less than or equal to the missile's decoy number then the missile has been decoyed and scores no damage. If the card is higher then the decoy has been ineffective.

If the aircraft is targeted by 2 missiles (i.e.: ripple fired) then both missiles test against the single decoy separately.

Note that the aircraft may have already deployed chaff or flares earlier in the turn to try and degrade lock on attempts. These do not count when testing for decoys.

Aircraft using chaff or flares to try and decoy missiles are not considered to have engaged the missile for the purposes of deciding whether it can take its own combat action.

EXAMPLE OF COUNTERMEASURES USAGE

An aircraft carrying countermeasures completes its movement phase by passing and remaining in its initial square and declares it is releasing chaff and flares. One of each type is marked off from the aircraft's log and suitable markers are placed by the releasing aircraft.

Later in the turn an enemy aircraft tries to lock on a heat-seeking missile. In calculating the final lock-on number the total is modified by -2 as the target aircraft has deployed a flare. Nevertheless the enemy manages to lock on and launches a single heat-seeking missile.

The launching aircraft is 11 squares away from the target. The missile has 3 turns of flight and has a decoy number of 3. Using the procedure described for missile movement the missile moves 5 squares on its first turn of flight. The target aircraft then releases 1 flare to try and decoy it. He needs to draw a 3 or less but fails. The target then moves 2 squares on its second turn of flight. Again, the target deploys a flare but draws more than a 3. On its third and final turn of flight the missile is scheduled to move 5 squares. It enters the target square. The target may release one more flare and draws an ace. This successfully decoys the missile, which is removed from play. The target is free to take its own combat action if possible as it has not engaged the missile.

Had the third flare also been unsuccessful the target would have had to decide whether to engage the missile to try and dodge it.

RIPPLE FIRED MISSILES

Ripple firing missiles allows an aircraft to fire two missiles in the same turn at the same target.

This option is only available to Experienced or Ace pilots. Other pilots may only launch one missile per turn.

Ripple fired missiles must be of the same type. They use the same lock-on result. Missiles do not have to obtain separate lock-ons.

When the reference card is turned over for missile movement the owning player decides whether to abort the launch or launch one or two missiles. If two missiles are launched they both use the original reference card for their first turn of movement, thereafter they use their own individual cards for movement. These track across the grid using normal rules.

Each individual missile uses separate cards when drawing for movement. Any dodge attempts are made separately against each missile.

EXAMPLE OF RIPPLE FIRED MISSILES

An attacking aircraft has 4 radar missiles and has locked on to a target. The reference card drawn is a 6. The pilot is 'experienced' and ripple fires two radar missiles. Both missiles draw a card. Missile 1 draws a 10 and moves 4 squares against the reference card (6). Missile 2 draws an ace (1) and moves 5 squares. For subsequent movement each missile draws against its own preceding card as a reference.

LONG BURST MACHINE GUN SHOTS

This is an option for MACHINE GUN armed aircraft only with average or better pilots.

If the shooter is at a range of 1 square it may declare a 'long burst' shot at its target. This uses 2 ammo points.

The following effects apply:

If the target declares it is jinking against the incoming fire then there is a -1 to each of its V and M numbers for determining whether the jink is successful.

If a hit is scored the effectiveness of the shooter is increased by 1 (e.g.: from -5 to -4)

Example

A machine gun armed F-86A with an average pilot is at range 1 and fires at a Mig15. The firer declares a long burst and marks off 2 ammo from his log. The Mig declares a jink against the incoming fire. The Mig has a V number of 3 and an M number of 6. These are reduced to 2 and 5 respectively for this jink. The Mig player draws a 6 of Hearts against his V number (fail) and a 6 of Spades against his (reduced) M number (also a fail).

The shooter needs one correct guess to score a hit. His reference card is 9 Diamonds. He guesses LOWER and draws 3 Clubs. A hit is scored on the Mig. The F86 has a normal effect number of -5 but this is increased to -4 due to the long burst. He draws 7 Diamonds for effect. This results in (7-4) 3 Hits on the Mig-15.

CRITICAL HITS

If a player succeeds in hitting a target, by whatever means, and draws an ACE for damage this signifies a 'Critical Hit' (instead of representing a value of '1').

The player immediately draws another card from the deck and scores the indicated value of Hit Points on the target (with no deduction). If this second card is also an ACE, however, the target is automatically shot down.

E.g. an aircraft scores a cannon hit on a target and draws the Ace of Clubs for damage. This is a Critical Hit and the player immediately draws another card. It is 6 of Diamonds. 6 Hit Points are scored on the target. Had the second card been another Ace the target would automatically be shot down.

'VIFF' – VECTOR IN FORWARD FLIGHT

Aircraft identified in the lists as being capable of VIFF are able to angle their engines in flight to produce tighter turns and sudden changes in altitude.

If an aircraft wishes to use VIFF the player announces this immediately prior to that aircraft's movement phase. For any movement attempt that turn the player adds 2 to the value of his aircraft's V and M numbers. If the aircraft attempts a 'R' special manoeuvre then 2 is also added to that number. An aircraft without a Z capability (indicated by an 'x' on the chart) gains a Z number of 2 if using VIFF.

Regardless of whether the attempted movement is successful or not, place a marker by the aircraft to indicate that it has declared VIFF.

For the rest of the turn the aircraft suffers the following penalties:

- If targeted by an enemy HS lock on the missile lock-on number is increased by 50% (round UP)
- If a missile attacks it and the VIFF aircraft engages then the basic V/M numbers are HALVED when determining the success of the dodge for a HS missile or reduced by -1 for a RH missile. (NOTE that these are the BASIC numbers, not the enhanced numbers for VIFF)
- If a VIFF aircraft jinks against incoming gunfire reduce the basic V and M numbers by - 1 to determine success.

If the VIFF aircraft attacks this turn then there are no penalties applied to the attack – use the basic V and M numbers if calculating HS lock-on. Its own gunnery is unaffected.

RH MISSILES - TARGETS IN CLOUD

(The basic rules allow a RH missile target in cloud to employ the full range of defensive measures against the incoming missile(s). This optional rule modifies this. It assumes that the target catches sight of the missile at the last minute.)

If the target of a RH missile is in a cloud square the following rules apply to defensive measures that it may employ against the missile.

- If the missile reaches the target square and is engaged then the target aircraft uses the LOWER of its V or M numbers to determine whether the missile is dodged. The relevant number is modified by the missile's manoeuvre number in the normal way (with a minimum of '1')
- If the target aircraft has chaff then it may deploy this as normal after its movement phase to try and degrade enemy lock-ons. However, it may only deploy chaff to try and decoy an incoming missile if it enters the target square. The target is therefore restricted to only ONE decoy attempt against a given missile.

Aircraft firing RH missiles OUT of a cloud square are not affected by any of the above.

EJECTION

In an individual scenario the fate of aircrew is of passing interest. If players are running a campaign then it may be of vital importance.

To see if aircrew survive then it is necessary to determine an 'Ejection Number'. Once this has been established then a card is drawn. If the ejection number or less is drawn then the aircrew has survived (this can be drawn separately for each airman if desired)

The Ejection Number depends on the circumstances of the decision or necessity to eject.

A player may VOLUNTARILY eject his aircrew at any time. He does so by merely announcing the fact. The other side gets full credit for a 'kill' in these circumstances.

When ejecting from a shot down aircraft the number depends on whether the shoot-down is as a result of progressive damage or an instant kill..

If the attack causing the shoot-down scores insufficient Hit Points to kill in its own right but causes the target's Hit Points to reach its limit then this is a 'progressive kill'.

If the attack, in itself, scores sufficient Hit Points to kill the target (regardless of previous damage) then that is an 'instant kill'.

The Ejection Number for success in a VOLUNTARY ejection is as follows:

Ejecting from Undamaged or lightly damaged (less than half Hit Point value) = 11

Ejecting from a crippled aircraft = 9

(The above numbers also apply to 'Panic' ejections)

Instant Kill = 6

Progressive damage = 7

AIRCRAFT	V	M	R-Z	RADAR	HITS	GUN	BASIC MISSILE LOAD	
							HS	RH
F-80 SHOOTING STAR	3	4	2-x		(7)	M8-5		
F-84 THUNDERJET	3	4	2-x		(6)	M8-5		
F-86A/F SABRE	3	6	2-x		(6)	M7-5	2xAIM9	
F-86D SABRE	4	6	3-2		(6)	R1*	2xAIM9	
F-94 STARFIRE	3	5	2-x		(6)	R2*		
F-9F PANTHER	3	4	2-x		(7)	C6-4		
VAMPIRE	3	4	2-x		(6)	C5-4		
METEOR	3	3	2-x		(6)	C7-4		
OURAGAN	3	4	2-x		(7)	C4-4		
MYSTERE IV	3	5	2-x		(7)	C4-3		
SUPER MYSTERE	4	6	3-2		(6)	C3-3		
HUNTER	3	5	2-x		(5)	C4-3		
GNAT/AJEET	3	6	2-x		(5)	C3-3		
SEPECAT JAGUAR	4	5	3-2		(6)	C3-3	2xAIM9	
A-4 SKYHAWK II	3	6	2-x		(7)	C3-3	2xAIM9	
A7 CORSAIR II	3	5	2-x		(7)	C4-3	4xAIM9	
MIRAGE III	5	6	4-3	6	(6)	C3-3	2xMAGIC	1x530
MIRAGE V	5	5	4-3	5	(6)	C3-3	2xMAGIC	1x530
KFIR (F-21C)	5	6	4-3	7	(6)	C3-3	2xSHAFRIR	1x530
F-100 SUPERSABRE	5	5	4-3		(6)	C4-4	4xAIM9	
F-5A/C FREEDOM FIGHTER	5	5	4-3		(6)	C6-4	2xAIM9	
F-5E TIGER II	5	6	4-3		(6)	C6-4	4xAIM9	
F-4 B,C,D,J,K,M PHANTOM II	6	4	5-3	6	(7)	C2-3^	4xAIM9	4xAIM7
F-4 E,F PHANTOM II	6	5	5-3	7	(7)	C3-3	4xAIM9	4xAIM7
F-4S PHANTOM II	6	5	5-3	7	(7)	C2-3^	4xAIM9	4xAIM7
F-14A TOMCAT	7	6	6-4	7	(7)	C4-3	4xAIM9	6xAIM54
F-14D SUPER TOMCAT	7	6	6-4	8	(7)	C4-3	4xAIM9	4xAIM120
F-15A EAGLE	8	6	7-4	8	(7)	C5-3	4xAIM9	4xAIM7
F-15C EAGLE	8	6	7-4	9	(7)	C5-3	4xAIM9	4xAIM120
F-16A FALCON "VIPER"	7	8	6-4		(6)	C3-3	4xAIM9	
F-16C FALCON "VIPER"	7	8	6-4	8	(6)	C3-3	4xAIM9	2xAIM120
F/A-18C HORNET	6	8	5-3	8	(7)	C3-3	4xAIM9	2xAIM120
MIRAGE F1C	6	6	5-3	7	(6)	C4-3	2xMAGIC	2x530
F35 DRAGEN	5	4	4-3	6	(6)	C3-3	2xAIM9	2xAIM7
JA 37 VIGGEN	6	5	5-3	6	(6)	C4-4	2xAIM9	2xSKYFLASH
F-102A DELTA DAGGER	5	5	4-3	7	(7)		2xAIM4	2 AIM4
F-104B,S STARFIGHTER	7	4	6-4	5(S)	(6)	C4-3	2xAIM9	2xAIM7(S)
F-106 DELTA DART	5	6	5-3	6	(7)	C2-3^	4xAIM4	2xAIM4
F-8C CRUSADER	5	6	4-3		(6)	C4-4	4xAIM9	
F-8E(N) CRUSADER	5	6	4-3	6	(6)	C4-4	(2xMAGIC)	(2x530)
F-105D THUNDERCHIEF	5	4	4-3		(6)	C5-3	2xAIM9	
MIRAGE 2000	6	7	5-3	7	(6)	C3-3	2xMAGIC	2x530
LIGHTNING F.1	6	6	5-3		(5)	C3-3	2xRED TOP	
MIG-15 FAGOT	3	6	2-x		(7)	C3-4		
MIG-17A FRESCO	3	7	2-x		(7)	C3-4	4xATOLL	
MIG-17F FRESCO	4	7	3-2		(7)	C3-4	4xATOLL	
MIG-17E FRESCO	4	7	3-2	5	(7)	C3-4		4xALKALI
MIG-19A FARMER	5	5	4-3		(7)	C3-4	4xALKALI	

Mig-19C FARMER	5	5	4-3		(7)	C3-3	4xALKALI	
Mig-19E FARMER	5	5	4-3	5	(7)		2xALKALI	4xALKALI
MIG-21 F/MF FISHBED	5	6	4-3	5(MF)	(5)	C2-5	4xATOLL	2xATOLL (MF only)
MIG-21J FISHBED	5	6	4-3		(5)	C2-4	4xATOLL	
MIG-23 FLOGGER	6	4	4-3	6	(6)	C2-4	4xAPHID	2xAPEX
MIG-25 FOXBAT	7	4	6-4	6	(6)		2xACRID	2xACRID
MIG-29 FULCRUM	7	6	6-4	7	(6)	C4-4	4xARCHER	2xALAMO
SU-7 FITTER	4	4	3-2		(6)	C2-4		
SU15 FLAGON A	5	4	4-3	5	(6)		(2xANAB)	(2xANAB)
SU15 FLAGON D	5	5	4-3	5	(6)		(2xANAB)	(2xANAB)
SU-17/22 FITTER	5	4	4-3		(6)	C2-4	4xATOLL	
MIG-31 FOXHOUND	6	4	5-3	7	(6)	C2-4	4xAPHID	4xAMOS
SU-27 FLANKER	7	6	7-4	8	(6)	C4-4	4xARCHER	6xALAMO
F/A-18E SUPER HORNET	6	8	5-3	9	(7)	C3-3	4xAIM9	4xAIM120
F/A-22 RAPTOR	8	8	7-4	9	(7)	C5-3	2xAIM9	4xAIM120
F-35A,C JSF "PHOENIX"	6	7	5-3	8	(6)	C5-3	2xAIM9	2xAIM120
TORNADO IDV	6	4	5-3	7	(7)	C3-3	4xAIM9	4xSKYFLASH
TYPHOON	7	8	6-4	8	(7)	C3-3	2xAIM132	4xMETEOR
RAFALE C	7	8	6-4	8	(7)	C4-3	2xMICA	2xMICA
JA-39 GRIPEN	6	7	5-3	8	(6)	C3-4	4xAIM9	2xAIM120
F-7 AIRGUARD	6	6	5-3	7	(5)	C3-4	2xARCHER	2xAPEX
F-10 VANGUARD	7	7	6-4	7	(6)	C3-3	4xARCHER	2xADDER
SU-30MK FLANKER	8	6	7-4	8	(6)	C4-4	4xARCHER	6xADDER
SU-37 SUPER FLANKER	8	8	7-4	9	(7)	C4-4	4xARCHER	6xADDER
SU-47 FIRKIN "BERKUT"	7	8	6-4	8	(7)	C3-3	4xARCHER	4xADDER
AV-8B HARRIER II ***	3	7	2-x		(6)	C3-3	2xAIM9	
SEA HARRIER ***	3	7	2-x	7	(6)	C3-3	2xAIM9	2xAIM120
YAK-141 FREESTYLE	6	5	5-5	7	(6)	C3-3	4xARCHER	
MIG-35 SUPER FULCRUM	7	8	6-4	8	(6)	C4-4	4xARCHER	4xADDER
F-35B JSF "PHOENIX"	7	6	6-4	8	(6)	C5-3	2xAIM9	2xAIM120

All missile loads are subject to date and model. These are a guide only.
Loads in brackets indicate mutually exclusive or mixed.

* R = number of Rocket Volleys carried ^ = gunpod at +1 to target number
*** = may use 'VIFF'

APPENDIX 2 MISSILE CHARTS

RADAR MISSILE	MIN RANGE	TOF	MVR No	DECOY	EFF
AIM 7 - EARLY	6	3	+1	4	-2
- MIDDLE	6	4	0	3	-2
- LATE	6	4	-1	2	-2
AIM 4 FALCON	7	3	0	4	-3
SUPER FALCON	6	3	0	3	-3
SKYFLASH	5	4	-1	3	-2
AIM120 AMRAAM	5	4	-1	2	-2
MATRA 530A	6	3	+1	4	-3
SUPER MATRA 530D	6	3	0	2	-3
PHOENIX	15	8	+1	2	0
AA1 ALKALI	7	2	+2	4	-3
AA2 ATOLL	6	4	+1	3	-3
AA3 ANAB	5	4	0	4	-3
AA5 ASH	7	4	0	4	-2
AA6 ACRID	7	5	+1	3	-2
AA7 APEX	6	4	0	3	-3
AA9 AMOS	5	5	0	3	-2
AA10 ALAMO	6	4	-1	2	-2
AA12 ADDER	5	4	-1	2	-2
METEOR	5	4	-1	2	-2
MICA	5	4	-1	2	-2

HEAT-SEEKING MISSILE	MIN RANGE	LOCK NO	TOF	MVR NO	DEC	EFF
AIM9 -1 ST GENERATION	3	4	1	0	5	-3
-IMPROVED	3	5	2	-1	4	-3
-ADVANCED	3	6	3	-2	3	-3
-MODERN	3	7	3	-2	2	-2
AIM 4 - EARLY	4	4	1	0	5	-3
- LATER	4	5	1	-1	4	-3
RED TOP	3	5	2	-1	4	-3
FIRESTREAK	3	4	1	-1	4	-3
MATRA MAGIC I	3	5	1	-2	4	-3
MATRA MAGIC II	3	6	1	-2	2	-3
MATRA 530B	4	5	2	-1	4	-3
SHAFRIR I	3	4	1	0	5	-3
SHAFRIR II	3	5	2	-1	4	-3
PYTHON 3	3	6	3	-2	2	-2
AA1 ALKALI	4	4	1	+1	5	-3
AA2 ATOLL- EARLY	3	4	1	0	5	-3
-IMPROVED	3	5	1	0	4	-3
AA3 ANAB	3	5	2	0	4	-3
AA5 ASH	4	5	3	0	4	-3
AA7 APEX	4	5	3	0	4	-3
AA6 ACRID	4	5	4	0	4	-3
AA8 APHID	3	6	3	-2	4	-3
AA10 ALAMO	4	6	3	-1	4	-3
AA11 ARCHER	3	7	3	-2	2	-2
MICA	4	6	3	-1	3	-2
AIM132 ASRAAM	3	7	4	-2	2	-2

APPENDIX 3 - GAME LOG

----- ()	----- ()	----- ()	----- ()	ID	AMMO
DAM	ID	AMMO	DAM	ID	AMMO
...		
...		
...		
...		

AIRCRAFT CHARACTERISTICS						DEPLOYMENT CRITERIA													
TYPE	V	M	RAD	R	Z														
.....																			
.....						EXIT CRITERIA/ WEATHER													
.....																			
.....																			
TURN RECORD																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

----- ()	----- ()	----- ()	----- ()	ID	AMMO
DAM	ID	AMMO	DAM	ID	AMMO
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AIRCRAFT CHARACTERISTICS						DEPLOYMENT CRITERIA													
TYPE	V	M	RAD	R	Z														
.....																			
.....						EXIT CRITERIA / WEATHER													
.....																			
.....																			
TURN RECORD																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

MISSILES					
MIN			LOCK		

TYPE RANGE No. TOF Mvr Decoy Effect
INSTANT THUNDER – DESIGNERS NOTES

This game came about as a response to the complex boardgames I had played on this subject in the past – you know the type. Three hours and a blinding headache later, you have only fired off one heat-seeker which missed anyway!

The important thing about 'Instant Thunder' is the word 'Instant'. The game plays extremely quickly, once you understand the basics.

Instant Thunder is abstract and reliant on luck with the cards – particularly for deployment. First and foremost, it is a GAME (of fleeting opportunities), not a simulation. However, the results (after hundreds of playtest games) appear consistent and within realistic boundaries. There ARE tactics that can be used (I will leave you to find them out yourself) but what continues to surprise me is the STRATEGIC aspect of the game. You need to constantly look ahead in a turn to see who is going to threaten you or who can support you. The game rewards realistic decision making. If you are ½ a victory point ahead on the last turn then is it really worth going after another kill or would you be better off dodging into that convenient nearby cloud?

You will find that missiles never work in line with manufacturer's claims. I was delighted to read that, as late as 1998 during the Ethiopian-Eritrean conflict, modern Russian jets using the latest Russian missiles were reporting appalling performances from their AAMs and were resorting to cannons for their kills. Remember this when your super-duper AAM falls a square short of its target – you're in good company!

The most common question I have been asked about the game is 'when do I shuffle the deck of cards?' The answer is – whenever you feel like it! It is emphatically NOT intended that the pack should be exhausted before shuffling. Card-counters should have no advantage in this game. You should not shuffle during the deployment sequence, however, as deployment is intended to place aircraft in different squares (unless using the optional Formation rules). Otherwise, shuffle as and when you think necessary. Similarly it is not cheating to deal off the bottom or middle of a pack either.

Instant Thunder can be played on an A4 sheet of paper, using ½ inch counters, on larger 'Artist Board' to give more elbow room or by using 1/300 or 1/600 miniatures. I use miniatures on a sheet of 2 x 4 foot chipboard with cotton wool clouds. You don't even need a stand for the models!

If you give it a try I hope you enjoy 'Instant Thunder'.

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Acknowledgement:

I would like to thank Michael ("Scotty") Scott for his encouragement and advice. Scotty also came up with many of the stats for aircraft and missiles in the updated lists, as well as designing a very nice playing board for the game.

You are truly 'Sierra Hotel', Scotty!