

# **TYPHOON**



**RULES FOR 1/144TH  
MODERN AIR COMBAT**

**DAVID CHILD-DENNIS  
MATT IRSIK**

Typhoon

Fall 2009



WASATCH FRONT HISTORICAL GAMES SOCIETY

# Typhoon

## Modern Jet Combat

*Typhoon* is a set of miniatures rules for modern jet combat, specifically designed as an introductory level game for those gamers who wish to use the most current aircraft, but to not get bogged down in the complexity of hi-tech jet warfare. The game's systems allow each player to control several jets in a fast paced game that can be easily completed in a few hours.

Modern jet combat, particularly with aircraft such as the F-22, Eurofighter, and SU-35 can be extremely complex with the wide variety of radars, ECM, DDS, weapons, etc., which can bring a game to a crawl when using these planes. *Typhoon* attempts

to incorporate the technology into the various game systems which lets the players fly and fight their jets without having to worry about whether or not you have enough chaff or flares still left in your dispensers to defeat the enemy's next attack.

This makes *Typhoon* an ideal way to get new gamers into the modern jet combat era as they can focus on the basics of jet combat instead of memorizing a two page sequence of play.

The game is designed to be used without a hex mat or special stands, so

this will let gamers use any miniatures that they have and however they are currently mounted for the game.

Hopefully, *Typhoon* will introduce gamers to the exciting world of hi-tech jet combat and let them use some of the most powerful aircraft in aviation history in a fun and fast moving game.



## Scale

The rules are principally designed for 1:144 scale aircraft and all measurements are in inches. 1:300 and 1:600 scale models can be used, but it is suggested that measurements are changed from inches to centimetres.

1 inch = 100 mph airspeed. Note that some aircraft

airspeed has been slightly rounded up so that they are more easily divisible.

Altitudes have been divided into VL (very low), and (M-H) Medium and High. Most air combat will occur in the M-H region because aircraft engines are more efficient at that level. Radar and counter meas-

ures are also most efficient at this level. The Gulf War demonstrated, once again, that anti-aircraft guns and short-range, low altitude, IR missiles are significant threats to low flying aircraft. Hence most jet combat will take place in the M-H altitude bands which is reflected in the rules.

### Inside this issue:

Basic Concepts	3
Sequence of Play	4
Maneuver	4
Missile/Gun Combat	5
Air to Ground Combat	6
Aircraft/Missile Data	8,9
Game markers	10,11

### Special points of interest:

- No hex mats are needed to play.
- Any scale models can be used by adjusting the ranges.
- Good introductory system for modern jet combat.
- Rules for air to ground combat and air defenses are included.

# Basic Concepts

Typhoon has a number of rules systems that deal with movement, sighting, and combat. These are some of the basic concepts of the rules.

## Detection and Observation Radar Range

For the purposes of the game, all on-board radar is effective over the entire board. There is no maximum or minimum range.

## Infrared and laser - optronic systems

Modern infrared systems are extremely efficient within the range parameters allowed for in the rules. Therefore, there is no minimum or maximum range for these systems on the table. However, weather does have an effect on infrared and laser systems.

Visible detection by aircraft crews still remains an important factor in air combat. Maximum visibility is 24 inches but will be modified according to weather and field of view. Two man crews have a better chance of locating an enemy aircraft than does a single pilot. Each crew member can make a visibility test, provided they have a clear line of sight to the target.

## Movement

Aircraft move according to the movement allowance shown in the aircraft statistics table. Players will note that there are two movement allowances. Very low (VL) and (M-H) Medium-High. These are the maximum distances (in inches) any aircraft may move in a single game turn. Aircraft may move between each adjacent altitude band once per game turn. They may increase speed by  $\frac{1}{4}$  of their current speed, or decrease their speed by  $\frac{1}{2}$  their current speed.

## Counters and Markers

There are a number of counters that should be placed beside the aircraft model, or on its base if that is possible. They represent altitude and the current speed. At the beginning of each game



movement.

## How & When to Move the Models

Models are moved with those allocated the highest speed moving first. All aircraft are moved before any firing of guns or missiles. Aircraft that are following directly behind another, in order to engage it, may move after the intended target but only if their current speed will ensure they cannot overtake the target. This rule is designed to give the target aircraft the opportunity to avoid an attacker by causing it to overshoot.

## Maneuver

Aircraft MUST make a minimum move of 2 inches (or risk stalling and crashing) each game turn. If an aircraft is turning in any direction, including looping, it may only do so in accordance with the limitations imposed by its current speed and altitude. Aircraft at high altitudes are very much less manoeuvrable than those at lower altitudes. . Therefore, aircraft at high altitudes must move directly forward  $\frac{3}{4}$  of their current movement setting, before beginning a turn. I.e. if a model is set to move at 16 inches in the current game turn, it must move 12 inches before changing course. .

All aircraft travelling at half or more of their permitted maximum speed, must move  $\frac{1}{2}$  the distance (in inches) directly forward, before beginning a manoeuvre. I.e. If an aircraft model is moving at 8 inches and wishes to make a turn, it must move 4 inches before beginning the turn are only permitted to change course by up to 45 degrees per game turn.

The Maneuver section of the rules

explains limitations for altitude, loops, and special situations.

## Weapon Ranges Cannon

No separate entry is made for individual aircraft cannon. Each of the listed aircraft carries some form of cannon, and for a matter of simplicity, are treated as 'generic weapons'. Cannon have a maximum range of 12 inches, measured from the centre of the attacker's model aircraft base to the centre of the target aircraft model base.

## Missiles

Radar controlled or guided missiles have unlimited range on the table, but they cannot be used under 12 inches range. They are fired and arrive at the target in the same game turn. Infra red missiles have a maximum range of 24 inches and are launched and arrive in the same game turn. They have no minimum range.

## Ground Attack

There is a complete section of the rules that allow for ground attack and defence against these attacks by SAMs, shoulder fired missiles, and AAA. The system is kept simple to give players a chance to try these kinds of missions without creating a complex module for the rules.

## Data & Markers

Typhoon includes data for most modern combat aircraft in use since the 1970s along with data for SAMs and air to air missiles. While the list is by no means exhaustive, it should give players enough variety for multiple scenario possibilities. The rules also include markers and templates to use with the miniatures.



# Sequence of Play

---

Typhoon is played in a series of turns, with both sides performing certain phases of the turn simultaneously. Both sides proceed through the sequence of play each turn, performing the phases of the game turn in the order listed below.

1. Place markers for the speed and altitude of each aircraft.
2. Move each aircraft with the highest speed moving first.
3. Once all movement is complete, attempt to locate targets as required.
4. Conduct defensive AA/radar guided missile fire.
5. Conduct firing from aircraft, against located targets, in the following order:
  - Radar missiles including ARM defence suppression and guided bombs
  - IR missiles including AA defensive fire
  - Cannon/ guns/ unguided rockets, AAA defensive fire.
6. Determine hits and damage
7. Make crew survival checks if required

Evaluate mission objectives. Go to step 1 if the mission is incomplete.

---

## Maneuver

---

Aircraft **MUST** make a minimum move of 2 inches (or risk stalling and crashing) each game turn. If an aircraft is turning in any direction, including looping, it may only do so in accordance with the limitations imposed by its current speed and altitude.

Aircraft at high altitudes are very much less manoeuvrable than those at lower altitudes. This is caused by the density of the atmosphere. Therefore, aircraft at high altitudes must move directly forward  $\frac{3}{4}$  of their current movement setting, before beginning a turn. I.e. if a model is set to move at 16



inches in the current game turn, it must move 12 inches before changing course. Aircraft at very high altitude may only change course by 22.5 degrees per game turn.

Aircraft at medium or very low altitude are not affected by such a restriction. However, there are limits imposed by speed. All aircraft travelling at half or more of their permitted maximum speed, must move  $\frac{1}{2}$  the distance (in inches) directly forward, before beginning a manoeuvre. I.e. If an aircraft model is moving at 8 inches and wishes to make a turn, it must move 4 inches before beginning the turn are only permitted to change course by up to 45 degrees per game turn. Aircraft travelling at up to half or less of their permitted maximum speed, must move directly forward  $\frac{1}{4}$  of their current speed and may turn at up to 90 degrees

per game turn. Aircraft with variable thrust (VT) systems can make up to a 135 degree turn at up to half their maximum speed, after moving directly forward  $\frac{1}{4}$  of their current speed.

Loops may be carried out at any altitude level. The player places a loop counter beside his aircraft and it remains where it is, although he may reface the aircraft in any direction he wishes. Loops take place after all other movement is completed.



# Detection & Observation

1. Radar detection range is unlimited
2. IR and Optronic passive observations have unlimited range but are adversely affected by the weather conditions
3. Visual detection range is limited to 24 inches, but again is subject to weather conditions
4. Some aircraft canopy designs severely limit the pilot's rear view. The

MiG21 is an example.

5. A target must be detected before it can be engaged
6. As the range between the target and observer decreases, the score required to detect the target decreases.

Aircraft with Ground Control Radar or AWACS support add +2 to their dice roll to detect an enemy aircraft.

## Detection Procedure

Both the acquirer and target roll one D6 dice each. The acquirer adds their radar factor, plus any GCI or AWACS factor to their dice roll; the target their ECM/ESM factor to their dice roll. The acquirer must exceed the dice roll of the target to successfully detect the target. Once detected, the target remains so until it is fired at, or moves out of visual range, if the acquirer lacks radar. Acquirers may attempt to detect up to three targets per game turn, but may only engage one target per game turn.

# Missile Combat

1. Each missile type has been allocated an attack factor. When a missile is fired at a target, this number is added to a single D6 dice roll. This is the attack value. The defender adds his ECM/ESM factor to a single D6 dice roll; this is the defence value. Both scores are compared. If the attacker fails to exceed the modified dice roll of the defender, the attack fails and the missile misses.
2. Because missiles of this period are 'all aspect', that is they may be fired from

any angle, there is no adjustment for an angle of attack.

3. For game purposes, ESM and ECM provide all forms of counter measures in the defence of a target aircraft from any form of attack, including radar controlled AA guns.

If the attack is successful, the difference between the attacker's and defender's dice roll determines the amount of damage inflicted on the target. If the at-

tacker's score is twice that of the defender's, the target is immediately destroyed, along with the pilot and crew (if any). For any other result, subtract the defender's dice roll from the attacker's to find the amount of damage the defender's aircraft suffers. The defender must then roll a single D6 that must be greater than the calculated damage to the aircraft. If this is failed, the aircraft must be immediately abandoned with the pilot taking a 'bail out test'. If the dice roll is successful, the aircraft continues as normal.

# Gun Combat

1. The maximum gun range is 12 inches. All guns are considered to be of similar effective range and performance; therefore, no specific gun is listed for individual aircraft types.
2. The basic six-sided dice roll required to hit a target is a '6', at 12 inches range. This number is modified by the range, deflection, and speed difference to give a modified dice roll to hit the target. If the final calculation exceeds '6', then there is no shot possible. Gunnery can only occur if both target and firer are at the same altitude.
3. As the range closes or decreases between the target and firer, the chance of hitting increases. For each inch gun range is decreased, the dice roll required to hit the target is reduced by, '1'.

4. A straight line must be drawn from the centre line of the attacking aircraft to any point of the target aircraft in order to obtain a hit. If the target aircraft passes across the firing arc of the attacker, but does not finish its move within the firing zone, no shooting can occur.

5. For each 1 inch of movement difference between the attacker and target, the dice roll to hit the target is increased by '1'

Gunnery is not subject to ECM/ESM countermeasures.

## Calculating Gunnery Damage

If the firer obtains a hit against the target, the firer retains his unmodified dice score, rolled to hit the target. The target rolls one dice, (which is the abil-

ity of the aircraft to absorb damage), and both dice rolls are compared. If the firer's dice roll is twice that of the target, the target is instantly destroyed and no crew survive.

If the firer's dice score is more than the target's dice score, but not twice, subtract one from the other to represent the minimum dice roll required by the target for the pilot to safely eject from the damaged aircraft. If the firer's dice score does not



exceed that of the target, there is insufficient damage to the target to cause its loss.

## Attacking Ground Targets

Ground targets, on the table, should appear as they would be viewed from around 5,000 feet. Table layouts can be as sophisticated as the player's wish, but they should keep in mind that too much detail could be a problem. Players may wish to tie die tablecloths to give a mixed terrain, then, construct flat card objectives to be placed as desired.

During the period portrayed by the rules, bombing techniques were revolutionised

by laser and satellite guidance and unparalleled accuracy was achieved, as Gulf War air attacks demonstrated. There are two types of attack available under this rule set. Precision and area effect. Precision attacks are made against a specific objective (a single building or missile site for instance). No other damage occurs



except against the specified target.

Area effect weapons are designed to damage large targets such as airfields, army unit assembly areas and large industrial complexes. The most common form of munition is the cluster bomb and fuel air explosive. Both these types of weapons will cause a large area to be damaged.

## Guided Weapons & ARMs

These 'stand-off weapons' can be launched several miles from the target, in order to avoid short range AA fire. They may be launched at up to 24 inches from the target. GBU's and ARM missiles are target specific, and attackers must nominate an individual building or site for attack. Many first world armed forces have ECM and ESM measures protecting high value targets such as communication and command centres. While the Gulf War air attacks proved to be extremely accurate, Coalition aircraft faced



a disorganised and ineffective Iraqi defence network once cruise missiles had been deployed to neutralise most of it. I have assumed that NATO, Russia and China would not be so affected, given their size and resources.

All GBU's will have an attack factor of 6 that will be added to a one D6 dice roll to give an attack value. The defender will have a counter measures rating of 4 plus a single D6 dice roll to give a defence value. The counter measures include all forms of deception, ECM and local AA fire against the attack-

ing aircraft. If the attacker's modified dice roll fails to exceed the defenders', then the weapon is assumed to have missed the target. No other damage occurs to any other target.

ARM missiles work in exactly the same manner, except they only target the radar mast, or ESM aerial. Once an ARM missile hits this target, the site under attack loses its ECM/ESM counter-measures and the additional +4 added to the dice roll is removed. If the ARM missile does not damage the primary target. Therefore, ARM attacks suppress the defences while other weapons are applied to attack the objective itself.

## Area Weapons & Defensive Fire

These include all forms of 'dumb' bombs, unguided rockets and fuel-air explosive. They are used to attack large targets. No form of countermeasure is effective against them. The attacker must pass over the target at VL altitude to complete the attack and is therefore subject to the defender's fire BEFORE they are able to drop their weapons. Each attacking aircraft will be subjected to a single D6 dice roll from the defenders AAA fire, PLUS one short range AA missile. The AAA and missile will be treated as two separate attacks. Both attacker and defender, firing AAA, will roll one D6 each and compare the result. If

the defender's dice roll is double that of the attacker's, then the attacker is shot down immediately, without any possibility of saving the crew. For any other result, the difference between the defenders' and the attacker's dice roll is the minimum dice roll required by the attacker to continue with the mission. If the attacker fails this dice roll, the aircraft crashes, but the pilot may attempt to bail out.

The short ranged AA missile is fired by the defender at the same aircraft and is subject to countermeasures. The Defender Rolls one D6 and adds the missile

attack factor to the roll. The attacker rolls one D6 and adds their aircraft ECM/ESM factor to the roll. If the defender's modified dice roll exceeds the attacker's by double the attacker's aircraft is immediately lost, including the crew. For any other result, the defender's dice roll is subtracted from the attackers and this is the minimum dice roll the attacker must make in order to continue the mission. If the attacker fails, the aircraft is destroyed and the pilot makes a bail out test. If the attacker's dice roll exceeds the defenders', the missile misses.

## Bomb Damage

Each target should be allocated a specific number of damage points. Moderate sized airfields and bridges should be 12-20 points where as a large industrial complex about 25-50. Radar sites should be 3-5 points. As a rule of thumb, the more

heavily protected the target, the higher the damage points. When each weapon hits the target, the attacker rolls one D6 and this is the number of damage points against the target. Once the target's damage points are exceeded it is destroyed. Vehicles have no defence against bomb

or rocket hits; therefore the number rolled on the dice is the number of vehicles lost. All personnel caught in cluster bomb or FAE attacks are automatically lost. Roll one D6 for the number of infantry units lost.

## Pilot Bailout

Pilots must roll one D6 equal to or greater than the damage their aircraft receives. This reflects the problems associated with seat malfunction once serious damage occurs to the ejection system. If there is more than one crew member, test for each individually.

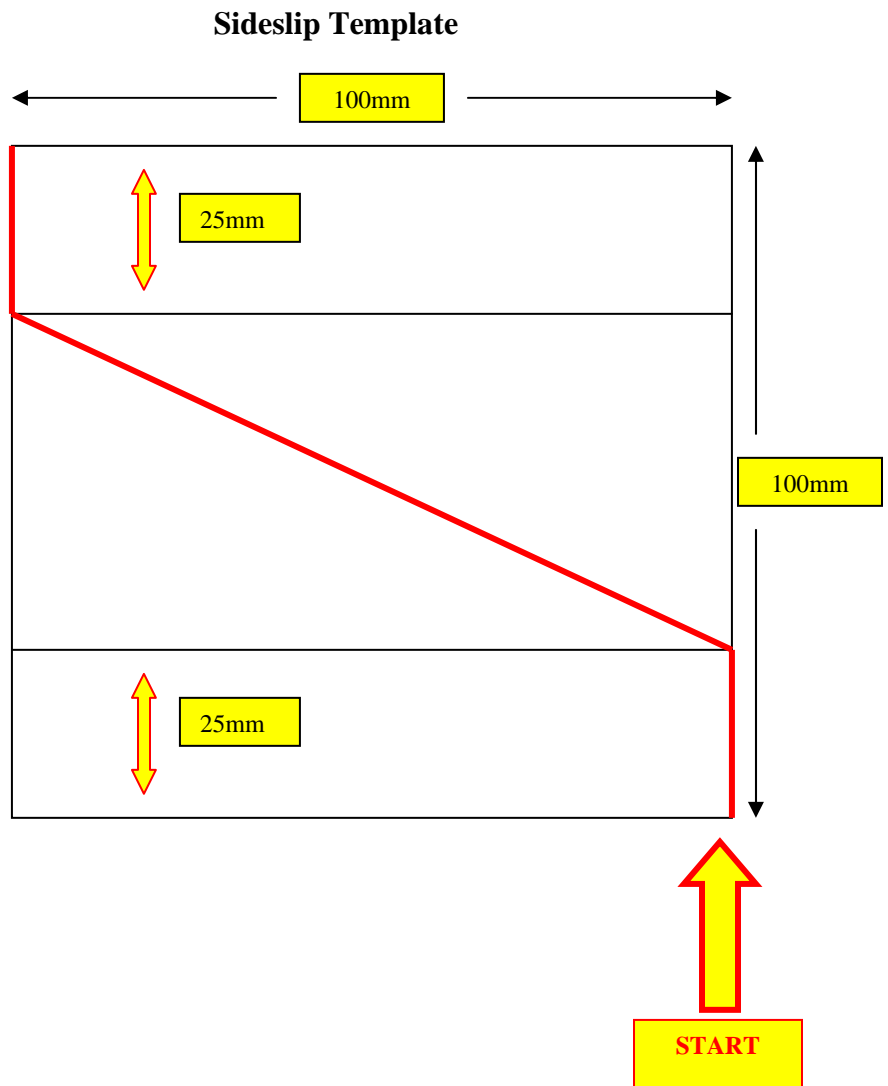
## Weather (Optional)

1. Weather conditions are for North West Europe and Western Russia.
2. Roll two six sided dice and add the numbers rolled together. This number represents the month of the year the battle takes place. Note that January cannot be rolled – be thankful!
3. Summer: No modification to the visibility rules
4. Spring and Autumn: Minus 1 on the dice roll for all but radar detection calculations
5. Winter: Minus 2 to all but radar detection calculations.
6. Once aircraft reach high altitude levels, weather cannot affect detection.

## Flight Plan (Optional)

Aircraft don't just fly aimlessly across the battlefield. They have an inbound and an outbound route. This is not deviated from unless the aircraft are subjected to some form of enemy intervention

The attacking players should lay a coloured thread (wool is a good idea) from the edge of the table where their aircraft will enter the battle zone, through to the target and an egress line for their return from the objective. The lines may deviate between known features such as hills and obstacles, including suspected defence zones. The attackers must follow these lines until they are engaged by enemy forces. At that point, the lines are removed and aircraft may proceed to the objective in any way desired, within the rules.



Template measurements for sideslip - 1:144<sup>th</sup> scale models

Halve measurements for 1:350 – 1:300 scales

# Aircraft Data

---

Aircraft	Max VL	M-H	Speed VT	Radar Factor	ECM ESM	Weapons
<b>United States</b>						
F16	8	12	No	9	5	2- AMRAAM IR, 2-ASRAAM
F18	8	14	No	9	5	4-AIM-9L IR, 4-AIM-7F Sparrow R
F15E	8	16	No	10	5	4-AIM-9L IR, 4-AIM-7F Sparrow R
F111	8	16	No	10	5	Various
F35	8	18	Yes	10	8	4-AMRAAM IR, 4-AMRAAM R
AV8	6	6	yes	9	5	2-AIM-9L IR, plus bombs or rocket pods
<b>Russia and CIS</b>						
MiG21	8	12	No	6	3	2- AA-2-2 Atoll IR, 2- AA2-2 AA2-2 Atoll R
MiG23 MFD	9	12	No	7	3	2- AA8 Aphid IR, 2-AA7 Apex R
MiG29	8	12	No	8	4	Various
MiG27	6	12	No	7	4	Various
Su25	8	8	No	4	4	Various
Su27	8	16	Yes	8	5	Various
Su30	8	16	Yes	8	5	Various
Su33	8	16	Yes	8	5	Various
Su35	8	16	Yes	8	5	Various
MiG25B	8	18	No	6	4	Various
MiG31	8	16	No	8	5	Various
<b>NATO and Europe</b>						
Tornado	8	14	No	10	5	2- AIM-9L IR, plus bombs and rocket pods
Mirage 2000	8	16	No	9	5	2-Matra 550 Magic IR, 2-Matra Super 530 R
Dassault Rafale	8	16	No	9	5	2-Matra 550 Magic IR, 2-Matra Super 530 R
Typhoon - Eurofighter	8	16	No	9	5	2- AMRAAM IR, 2-ASRAAM
Harrier	6	6	Yes	9	5	2- AIM9 L IR, plus bombs.
Jaguar	7	10	No	5	5	2- AIM-9L IR, plus bombs and rocket pods

## Notes

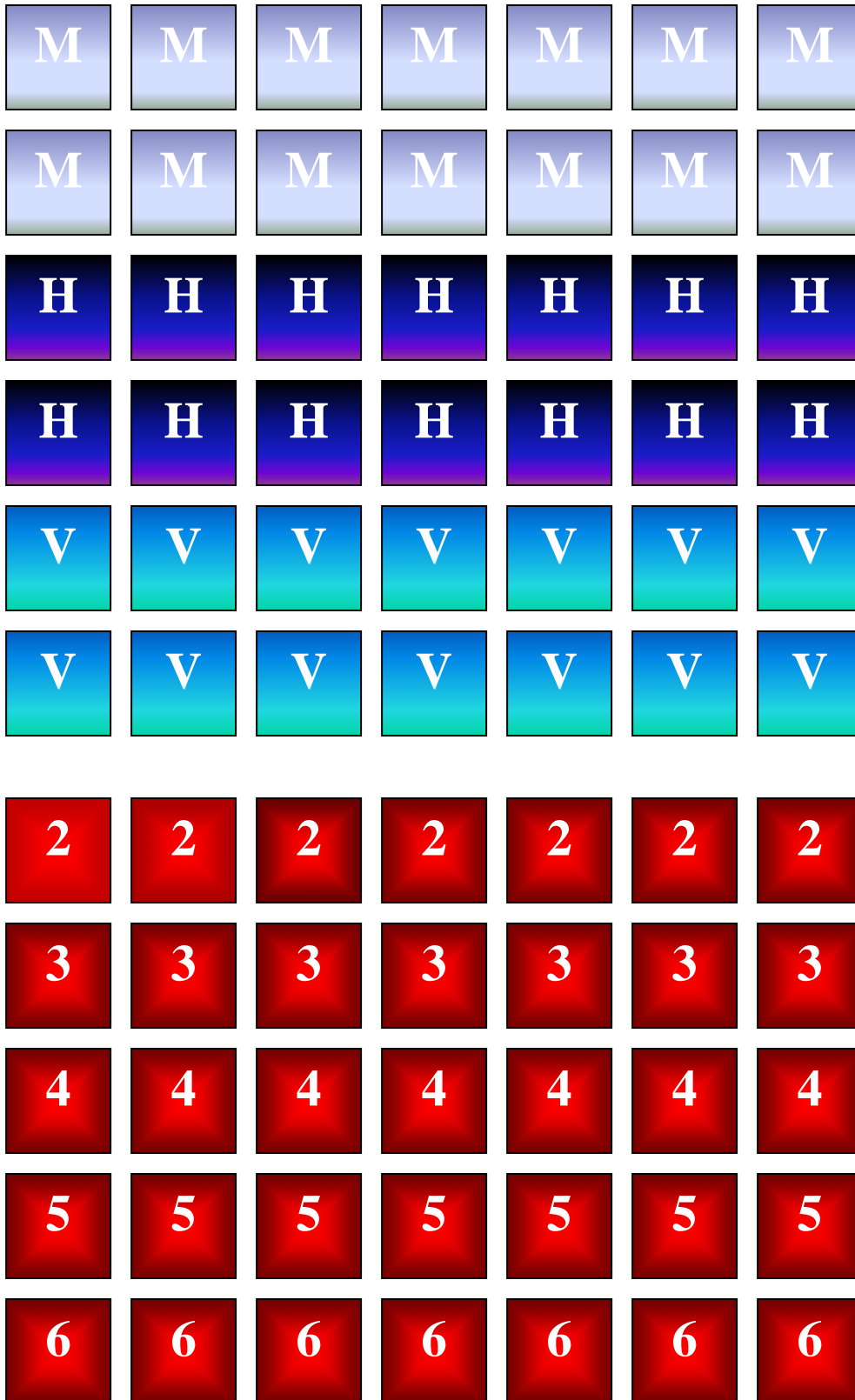
# Air to Air Missile Data/SAM Data

Missile	Type	Attack	Aircraft to which it is fitted
<b>Russia and CIS</b>			
AA6 'Acrid' R40	R	3	MiG25 B and MiG31M
AA7 'Apex' R23T	IR	3	MiG23 MF-D from 1980
AA7 'Apex' R24R	R	3	MiG23 MF-D from 1980
AA8 'Aphid' R60	IR	3	MiG23MF, MiG29, Su27
AA9 'Amos'	R	5	MiG31 only
AA10a 'Alamo' R27A	R	5	MiG21MF, MiG23MFD, MiG25B, Su27/33, series
AA10b 'Alamo' R27B	IR	5	As above
AA10c 'Alamo' R27C	R	5	As above
AA10d 'Alamo' R27D	IR	6	As above
AA10e 'Alamo' R27E	R	6	As above
AA11 'Archer' R73	IR	5	MiG29, 31, Su27, 30, 33, 35, MiG23 MLA
AA12 'Adder' R77	R	6	Similar to AMRAAM, MiG29, Su27 series
<b>NATO and US</b>			
AIM-9L Sidewinder	IR	5	Fitted to most NATO and US fighters
AIM-7F Sparrow	R	5	Fitted to most NATO and US fighters
MATRA 550 Magic 2	IR	5	Mirage 2000, Rafael
MATRA Super 530	R	5	Mirage 2000, Rafael
AMRAAM	R	5	Most NATO, US fighters
ASRAAM	IR	6	Typhoon, Tornado F3, Harrier GR7

Type	Name	Homing	Altitude	Range	Type	Attack factor	SAM Data
SA-2	Guideline	R	Med to high	Med	R	2	
SA-3	Goa	R	Med	Med	R	3	
SA-4	Ganef	R	Med to high	Long	R	4	
SA-5	Gammon	R	Med to high	Long	R	4	
SA-6	Gainful	R	Low	Med	R	5	
SA-7	Grail	IR	Low	Short	IR	2	
SA-8	Gecko	R	Low	Short	R	3	
SA-9	Gaskin	IR	Low	Short	IR	4	
SA-10	Grumble	R	Low to high	Long	R	6	
SA-11	Gadfly	R	Low	Med	R	6	
SA-12	Gladiator	R	Low to high	Med	R	6	
SA-13	Gopher	IR	Low	Short	IR	3	
SA-15	Gauntlet	R	Low to med	Short	R	3	
	Hawk	R	Low to med	Med	R	4	
	Chaparral	IR	Low	Short	IR	2	
	Rapier	R	Low	Short	R	2	
	Roland	R	Low	Short	R	2	
	Stinger	IR	Low	Short	IR	3	
	Patriot	R	Low to high	Short to long	R	7	
	Crotale	R	Low	Short	R	3	
	javelin	IR	Low	Short	IR	3	
	Mistral	IR	Low	Short	IR	2	
	Sky guard	R	Low-High	Medium	R	8	

# Game Markers

---



# Game Markers

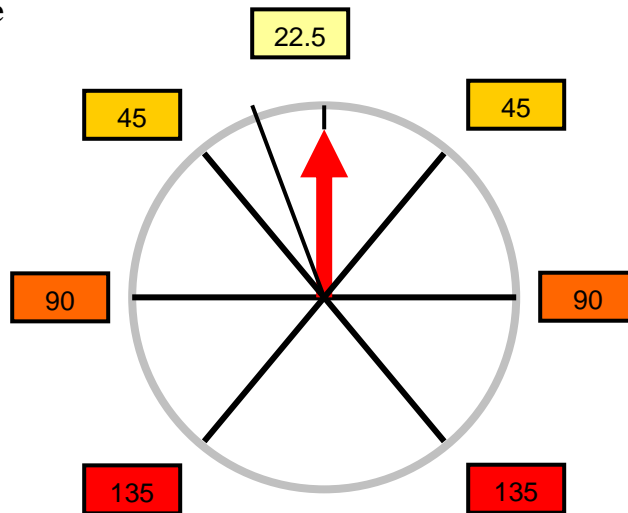
---

7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18

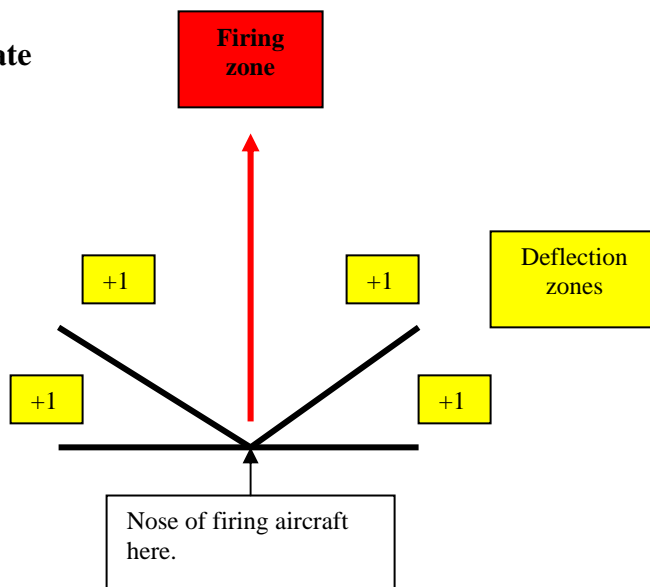
# Templates

---

## Maneuver Template



## Gunnery Deflection Template



Place the template against the base of the firing aircraft BEFORE moving the target aircraft. If the target aircraft passes through the deflection zones before coming into the firing zone, add each of the numbers in the zones it passes through, to the dice roll to hit the target.



### WASATCH FRONT HISTORICAL GAMES SOCIETY

Meets every other Friday night in the SLC, Utah area. We currently play AOR, AOD, AOE, BKC, WMA, Phantoms, Mustangs, Sharpe Practice, This Very Ground, Wild West, and too many other periods and scales to list here!

If you have any comments, ideas, suggestions, or wish to send me an article, you can contact me at:  
mirsik1@juno.com

*The best in historical miniatures  
gaming*

Visit our site @  
[www.wfhgs.com](http://www.wfhgs.com)

*There have been numerous board games on modern jet combat and several sets of miniatures rules, including Phantoms and Intruders which are available for free on our web site. Modern air combat is very similar to modern naval combat in that both can be exceedingly complex subjects because of the advances in technology. One needs look no further than the rulebooks for Harpoon 4 or Birds of Prey to see just how complex this type of warfare can be. Most gamers, however, don't have the time or the resources to devote to learning these types of games, but the appeal of miniatures gaming with modern jets can't be denied.*



*Typhoon will hopefully bridge the gap between ultra-realistic, complex rules and those gamers who just want to throw a few jets on the table and play a quick, fun game. This set of rules is in no way the definitive word on the subject, but rather they are a good introduction into the world of modern jet combat that can be learned and played quickly. Hopefully the rules will get more gamers to try this period and generate enough interest for them to go further and try out other systems.*

## Additional Ideas

Typhoon should be seen more as a "tool kit" than a comprehensive set of modern jet combat rules. It is designed to get new gamers interested in this fascinating subject by providing a basic set of rules. The system, however, lends itself well to having additional aircraft, weapons, and rules added in to increase the realism or complexity.

The following are some ideas that could be added to the existing rules:

1. **Additional Aircraft and Weapons.** You can see the factors given to a wide range of aircraft which should let most gamers create stats for aircraft not included in the game.
2. **Naval Targets.** You could assign hit values and SAM defenses for naval targets and include those in a scenario.
3. **Pilot Quality:** Give experienced or inexperienced pilots additional

modifiers for detection or in air combat for gun and missile attacks/defense.

4. **Maneuver.** Adjust the turns and speeds for aircraft that are more maneuverable than others.
5. **Critical Hits.** Track damage and create a critical hit chart that has results such as fuel leak, engine failure, etc., which will add a lot of variety to the combat system.

6. **Missions.** Assign each pair of aircraft a mission, such as CAP, escort, defense suppression, etc., then let each player determine their ingress and egress routes plus their plan of attack.
7. **Campaigns.** Track the aircraft of an entire squadron over the course of several battles. Each day assign them missions, check for maintenance, and allow the pilots to progress in quality. Campaigns tend to make players use their assets more wisely since they need to be conserved to fight another day.



There are many more ideas that can be added to the rules and the only thing to prevent you from doing so is time and energy! It is a good idea to run your ideas through with another gamer or club to see if you are on the right track and the changes won't unbalance the game.