

# Zoom Climbs and Armament: Added Realism for Foxbat and Phantom

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As a military pilot I was greatly interested how SPI would treat the dynamics of modern' air combat maneuvering in the simulation Foxbat and Phantom. I'm impressed. I feel the game mechanics are clean and playable and yet accurately portray most of the important differences of the scenario aircraft. They also permit simulation of the different tactics which those aircraft should employ. A few basic truths are illustrated by the game. First, that nine out of ten kills are made from six o'clock on a non-maneuvering target; and second, that despite the high speed, high altitude capability of many aircraft, most of the action is at transonic speeds and below 20,000 feet.

*Foxbat and Phantoms* is, however, unnecessarily limited in its scope. It fails to accurately illustrate, the most demanding and unique mission of modern air to air combat: the very high altitude intercept. Although this mission will always be a relatively rare occurrence, it is one with strategic significance. The major powers will always seek-to build aircraft which can fly higher and faster, for a superior high altitude capability gives one the ability to intrude at will.

Prior to the latest eruption of the Arab-Israeli conflict Egyptian (Soviet?) MIG•23's conducted several overflights of Israel's positions in Sinai and along the coast. Although Israel's air force scrambled to intercept them several times, they were never successful. The prospect of deck launching a fighter and intercepting a target which is traveling at 3.2 times the speed of sound and at an altitude of 73,000 feet is dim. Without extremely early warning and a fortuitous route by the intruder an

interceptor would be lucky to even reach the altitude and airspace of the MIG 23 (i.e., get on the board) much less make an interception and get off a shot. The only "free world" fighter which can sustain operations in the *Foxbat and Phantoms* very high altitude environment is the French Mirage III. It achieves this performance only with the assistance of an optional rocket motor which boosts its service ceiling from 17,000 meters to 23,000. The rocket motor is, of course, practical only in a short range interceptor role. It would; be: imprudent for the Mirage III to attempt to act as a very high altitude intruder. It would be incapable of making any deep penetrations and could not carry any significant reconnaissance payload.

The only way in which most aircraft can attack a high flying FOXBAT is by zooming to an altitude well above their own service ceiling and taking a quick shot as the MIG-23 goes by. To accurately simulate this high altitude realm I propose the following rule for "zoom climbs" and a schedule of more accurate service ceilings for the scenario aircraft:

Insert as paragraph 4.50 to the rules of *Foxbat and Phantom* the following:

[4:50] ZOOMING: An aircraft may climb to an altitude above its service ceiling by trading airspeed for altitude (zooming). Any aircraft which is already at its service ceiling may elect to zoom during its flight decision phase. To execute the zoom, first reduce the aircraft's current speed two steps, and then execute a climb in the usual manner. Each subsequent turn in which the aircraft remains above its service ceiling its current speed is reduced two

additional steps. If an aircraft which is already above its service ceiling zooms again, the total mandatory speed reduction will be four steps. *Note:* An aircraft may accelerate while operating above its service ceiling whether zooming, maintaining level flight or diving, and may thus partially offset the mandatory decelerations.

The following service ceilings should be-used with the above rule. The ceilings are based on data from *Jane's, All the World's 1972-73* and are rounded to the nearest one thousand meters with the exception of MIG 23 whose ceiling was rounded up to preserve its relative advantage.

Aircraft	Ceiling
<i>F-4E</i>	20
<i>F-5E</i>	16
<i>A-7</i>	14
<i>F-14A</i>	21
<i>F-15A</i>	21
<i>F-104</i>	18
<i>F-11</i>	18
<i>Lightning</i>	;18
<i>Mirage F1</i>	20
<i>Mirage III</i>	17 or 23
<i>Su-7</i>	15
<i>Su-11</i>	18
<i>MiG 21</i>	18
<i>MiG-23</i>	23

With the incorporation of the above rule (4.50 ZOOMING) and-revised ceilings the following scenario illustrates the difficulty of

countering MIG-23 overflights.

**SCENARIO: *Foxbat and Phantom.***

RIM A; Intruder a/c 3 MIG-23's at position "RIM 'A, B, C' INDR" with speed level max minus 2; altitude 23.

Interceptor a/c 3 F-4E's arrive according to the die roll at level max minus 2; altitude 20.

Intruder moves first. Armament of the MIG-23's is 2 RHM each. Armament of the F-4E's is 4 RHM each.

The armaments specified in the above scenario are tailored specifically for the mission and serve as an introduction to my second subject realistic armament selections. The armaments outlined in the scenario profiles and on the aircraft data sheets are frequently inaccurate. Fortunately, only small amount of additional information is needed to rectify this situation and permit intelligent weapons selections in the scenarios. Revised weapons loads, based on limited personal experience and data from *Jane's* are listed below:

*F-4E/J* Cannon plus RHM's and HSM's. MISSILE MIXES; 6 RHM or 4 RHM plus 4 HSM, or 4 RHM only (for high altitude intercepts). The F-4 mounts four Sparrow III radar homing missiles on recessed fuselage stations as basic armament. Additional air-to-air ordnance may be carried on the aircraft's inboard wing stations. These stations may each carry either one Sparrow III (RMM) or two Sidewinders (HSM's). To simulate earlier series F-4 aircraft, the F-4B's, C's, or D's, delete cannon from their armament.

*F-5E*: No change

*A-7*: No change

*F-14A*: Same as F-4E

*F-15A*: Same as F-4E

*F-104G*: Cannon plus 2 RHM (in bays) plus HSM (on wing tips). For high altitude intercepts strip the

aircraft to 2 RHM plus cannon.

*F-104S*: Cannon plus 3 HSM. Foreign models of the F-104 such as Italy's do not mount RHM and carry an extra HSM on centerline.

*F-111*: No Change (No info available)

*Lightning*: No Change. *Note*: The Lightning carries its missiles on special twin pallets in an internal bay and therefore cannot mix RHM's and HSM's.

*Mirage III*: Cannon plus RHM and HSM. Missile mixes: 1 RHM plus 2 HSM or 3 HSM only, or 1 RHM only (for high altitude intercepts). The Mirage III has only three weapon stations and only the centerline will accept an RHM.

*Mirage FI*: Cannon plus RHM and HSM. Missile mixes: 3 RHM plus 2 HSM (standard) or 1 RHM plus 4 HSM. For high altitude intercepts, 3 RHM or 1 RHM plus 2 HSM.

*Su-7*: No change

*Su-11*: Cannon plus RHM and HSM. Missile Mixes: 2 RHM plus 2 HSM (maximum load) or 4 HSM (unlikely) or 1 RHM plus 1 HSM (most common load.) The Su-11 has four wing stations, the outboard of which are limited to HSM's only.

*MiG-21*: No Change

*MiG-23*: Cannon plus RHM and HSM. Missile mixes: 4 RHM and 2 HSM or 2 RHM and 4 HSM (maximum load), 2 RHM and 2 HSM (typical), 2 RHM only (high altitude missions). The MiG-23 has an internal weapons bay mounting either 2 RHM or the more advanced "snap down" missiles. It has, in addition, 4 wing stations, the outboard of which are assumed limited to HSM only and usually not used.

The use of the preceding weapon mixes places the capabilities of the scenario aircraft in better

perspective and makes the game more accurate. I thoroughly enjoy *Foxbat and Phantom* and encourage players to devise their own scenarios for special situations. One of my own conception which simulates action of Vietnam War follows:

**SCENARIO: '*River Rats*' PDM, North Vietnam, 1968.**

US Player is intruder with two F-4B (Navy) or two F-4C (Air Force) fighters and a flight of six bombers versus three MiG-21 aircraft. Assume the North Viets are using their best: no inexperienced pilots. Remember the F-4B/C had no cannon.

Special Rules:

(1) US fighters and bombers enter simultaneously, the fighters according to the die roll, the bombers at the position "RIM A,B,C."

(2) U.S. visual sighting requirement: One of the U.S. fighters must close to within five hexes and/or levels (i.e., 3 hexes plus 2 levels difference = 5) of an enemy fighter to positively identify it before the US player may open fire. After one MiG-21 is identified they all are considered identified.

(3) The MiG-21 interceptors enter at altitude 5 (vice 15), speed level max minus two, climbing.

(4) Victory Points: US Player receives 1 point per kill plus 1/2 point per bomber exited from the RIM intruder exit hexagons. North Viet Player receives 2 points per kill for both bombers and fighters.

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