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**Author**
**Topic: Falcon 4.0 Training Mission Report #06**
**BeachAV8R**

posted 09-02-2003 22:49


 Member  
 Member #  
 3055

09/02/03

Falcon 4.0/SP3 Training Mission Report #06

Objective:

Continued Air-to-Air radar RWS training.  
 AIM-7 Sparrow training.  
 AIM-9P training.

Planning/preflight:

Our hop for today is another air-to-air radar exercise designed to familiarize ourselves with the powerful air-to-air radar on the F-16. Today we will be firing the AIM-7 Sparrow medium range missile. The AIM-7, unlike the AMRAAM, does not have an onboard, autonomous radar to guide it to the target, rather it relies on riding the radar beam projected by the firing aircraft to guide it to the target. There are several implications to this. First, the firing aircraft must lock the target on radar and keep the target locked throughout the flight of the missile, limiting the maneuvering the firing aircraft can do. Second, the firing aircraft can only engage a single target at a time and also loses the ability to track other targets due to the requirement to have the radar beam focused on the target aircraft in Single Target Track mode (STT). The last consideration is that there is nothing stealthy whatsoever about an AIM-7 shot. You will be pouring radar energy into the target and he will definitely know he is being targeted.

We will also be firing the AIM-9P "Sidewinder" missile today. The AIM-9P is a rear-aspect, heat seeking missile. Unlike the more advanced AIM-9M model, the -9P requires you to maneuver for a tail-aspect shot which will allow the missile to home in on the heat signature of the target aircraft's engine.

We will be departing Kadena AFB in Japan again for this live-fire exercise over the Sea of Japan:



Debrief:

With a tearing sound my F-16C departs Kadena headed for the warning area:



As I head out northbound into the warning area I'm puzzled that I don't pick up the target aircraft earlier. Finally they pop onto the screen at a mere 30 miles accompanied by the chirp of my threat warning receiver:



The mystery of why I don't see them earlier is solved a few second later when I slew the radar cursor over the target and see the "01" under the data block; they are under 1000 feet, very low to the water. When I set up this TE (Tactical Engagement) I forgot to edit the waypoint for altitude so they defaulted to a very low altitude:



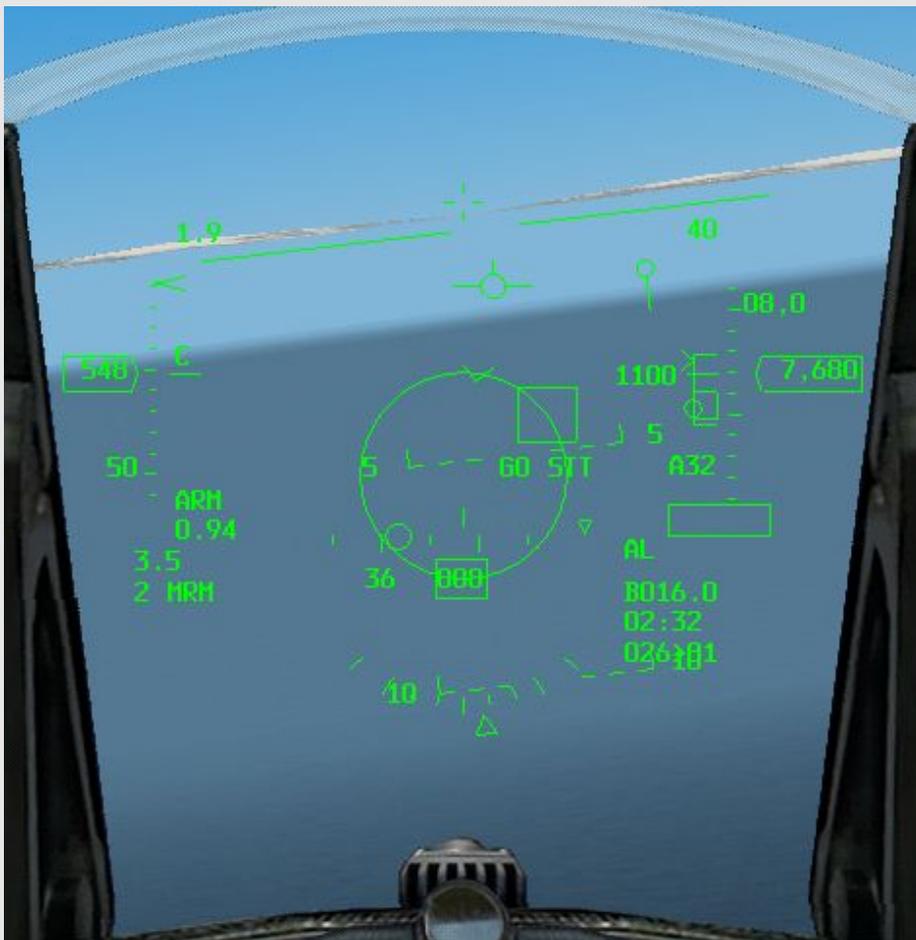
Things get a bit busy fast and I find I'm already way behind the aircraft. Picking them up at 30 miles may seem like plenty of distance, but as you can see in the following radar picture the closure speed (upper right hand corner) is 1076 knots! That means collectively we are closing that gap at 18 miles per minute giving me about 90 seconds before we are merged:



Switching to Air-to-Air mode I cycle through my weapons until the AIM-7 comes up in the MFD and HUD:



Designating the target once gives me some steering data and brings up the DLZ (Dynamic Launch Zone from the last mission!) but as the HUD indicates I still must enter Single Target Track mode "GO STT" in order to give guidance data to the missile prior to and during the missile flight:



Cont..

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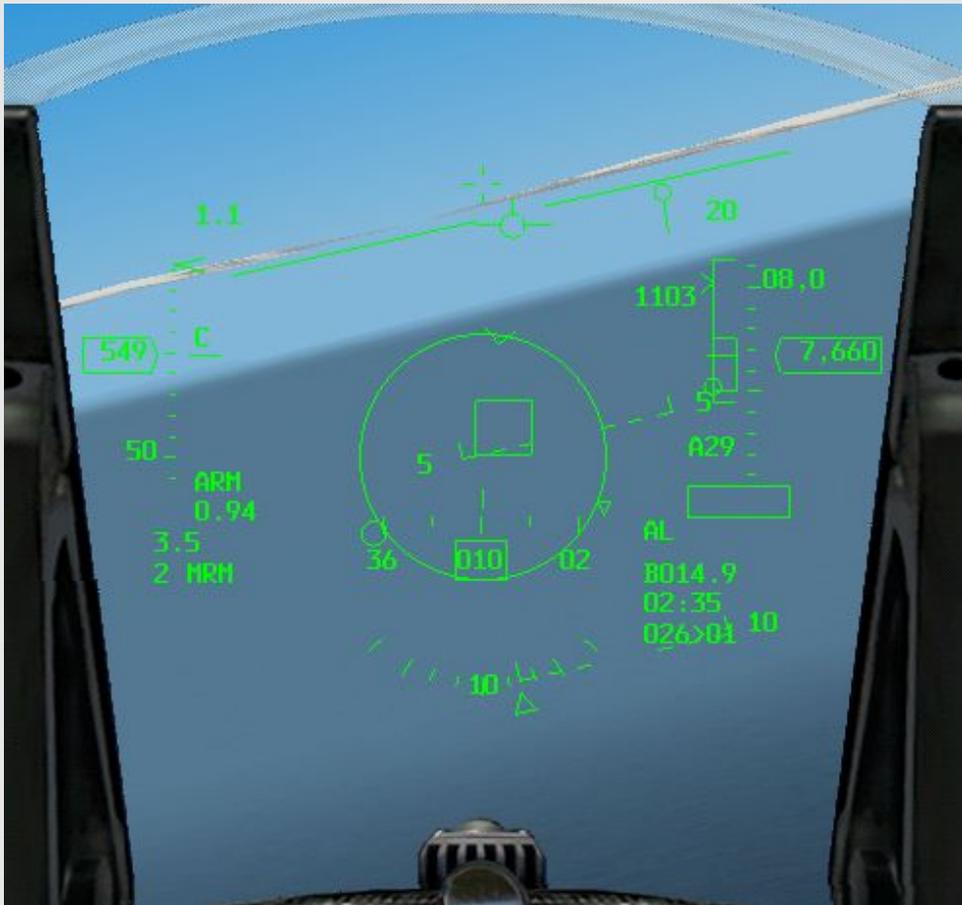
From: **Charlotte, NC USA** | Registered: **Jan 2001** | IP: [Logged](#)

**BeachAV8R**

posted 09-02-2003 22:49 

Member # 3055

I've now entered STT mode and am waiting for the caret in the DLZ (upper right corner of the HUD) to fall into the "no-escape zone". I could fire now, but there would be little probability of a hit if the target started any kind of maneuvering. Closure speed remains high at 1103 knots (left side of the DLZ):



Taking a quick cheat look at the target shows a QF-4A (theoretical) scraping the water:



At 7.3 miles the target enters the top of the DLZ and the missile reticule and target box start flashing:



Fox-One!



The F-4 goes into a defensive break dropping chaff attempting to decoy my missile:



Damn, I missed! For some reason my missile sails wide, it could be his 90 degree break turn beamed my radar and I lost lock or perhaps my radar temporarily switched lock onto some chaff and guided the missile toward a false return. Who knows. Whatever the case, at 1100 knots of closure by the time my missile missed, we had already merged so I reef my F-16 around in a tight turn to pursue:





You'll notice that he is still below 1000 feet, heading directly away from me (the tip of the triangle symbol is a clue). He's doing 524 knots and our closure is a paltry 47 knots (upper right corner of the display). Additionally, in the bottom right hand of the radar display you can see my the DLZ indicating I need to close a bit more before taking another shot.

Glancing down at my fuel gauge I see I'm fat on gas (9000 lbs.) and elect to drop my centerline tank to pick up some speed for the tail pursuit:





Cont...

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📅 posted 09-02-2003 22:50 🏠 👤 📧 ✎ “ ”

Quickly switching to the Stores Management System page (SMS) I select the center-line fuel tank:



Taking a glance up into the HUD I verify that JETT is displayed, this is a cross-check because to jettison you hit the pickle button, if you aren't in "jettison" you will launch the active weapon, not a good technique.



With the external tank gone I take another sideways glance at the fuel gauge and verify that my internal fuel total is now 7100 lbs:



With my closure up to 74 knots in the chase the carat drops into the DLZ and again my missile reticule and target designator box begin flashing;



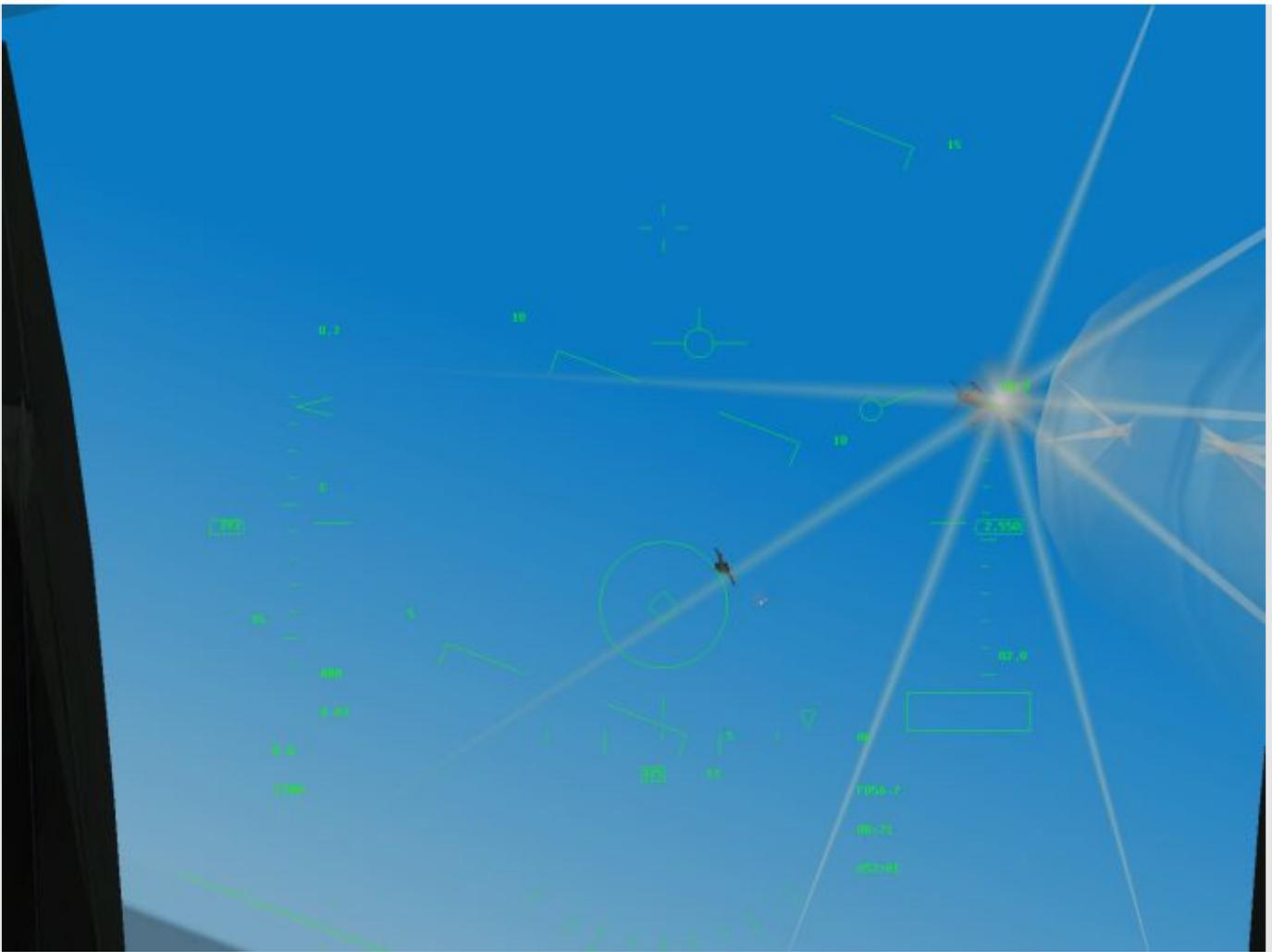
Fox-One (again!)



Dammit! I'm selling my stock in Raytheon! Another miss. The shot makes the F-4 enter another defensive break however and I'm caught a bit with my pants down as his energy bleeds drastically increasing my closure. I chop the throttle, pop the speed brakes out and turn with him:



This engagement is starting to look embarrassing for me. Hitting the weapons step button on my HOTAS I select an AIM-9P but have accidentally failed to recognize that I no longer have radar lock on the F-4 and therefore the seeker isn't caged to him and I waste yet another missile:



My missile rockets off on a straight path while the F-4 jinks and drops flares anyway. Even though by now he must suspect I'm incompetent he still follows the correct evasive procedures:



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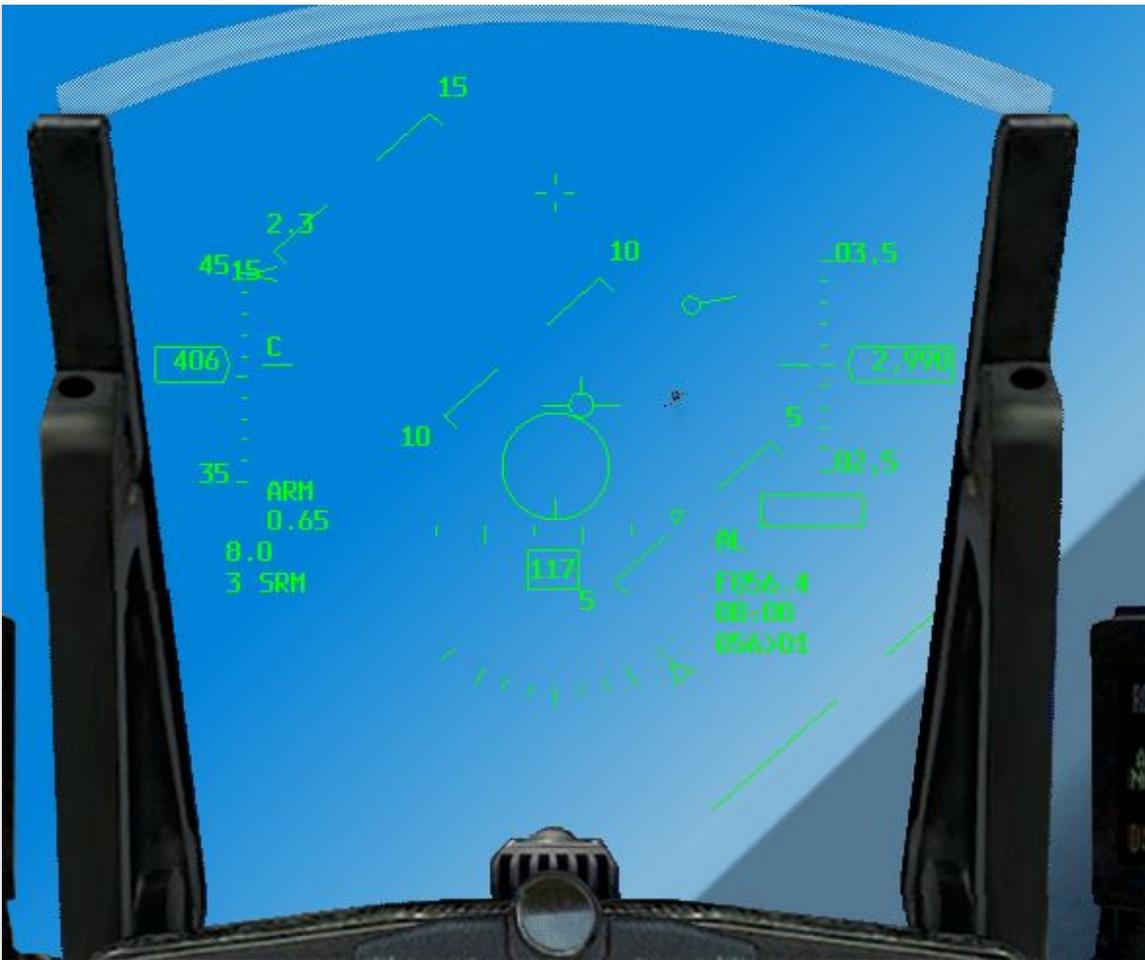
**BeachAV8R**

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Again, without any training in close-air-combat radar modes I'm lost on how to quickly lock the target back up so I elect to un-cage the seeker head (U command) and fire on the perfectly positioned F-4 without a lock:



This time, at least, the -9P tracks true up the F-4's tail-pipe:









For the briefest of seconds I consider that I FOD'ed my engine flying through debris from the F-4 I just shot down, but slowly it dawns on me what has happened.

Obviously the wingman has read a bit of Galland..

As my plane rolls inverted, out of control and plunges for the sea I switch to the external view and see the second F-4 in perfect guns position behind me:



As both me and the first F-4 plunge toward the ocean we all pull our handles at the same time:



Cont...

[ 09-02-2003, 22:53: Message edited by: BeachAV8R ]

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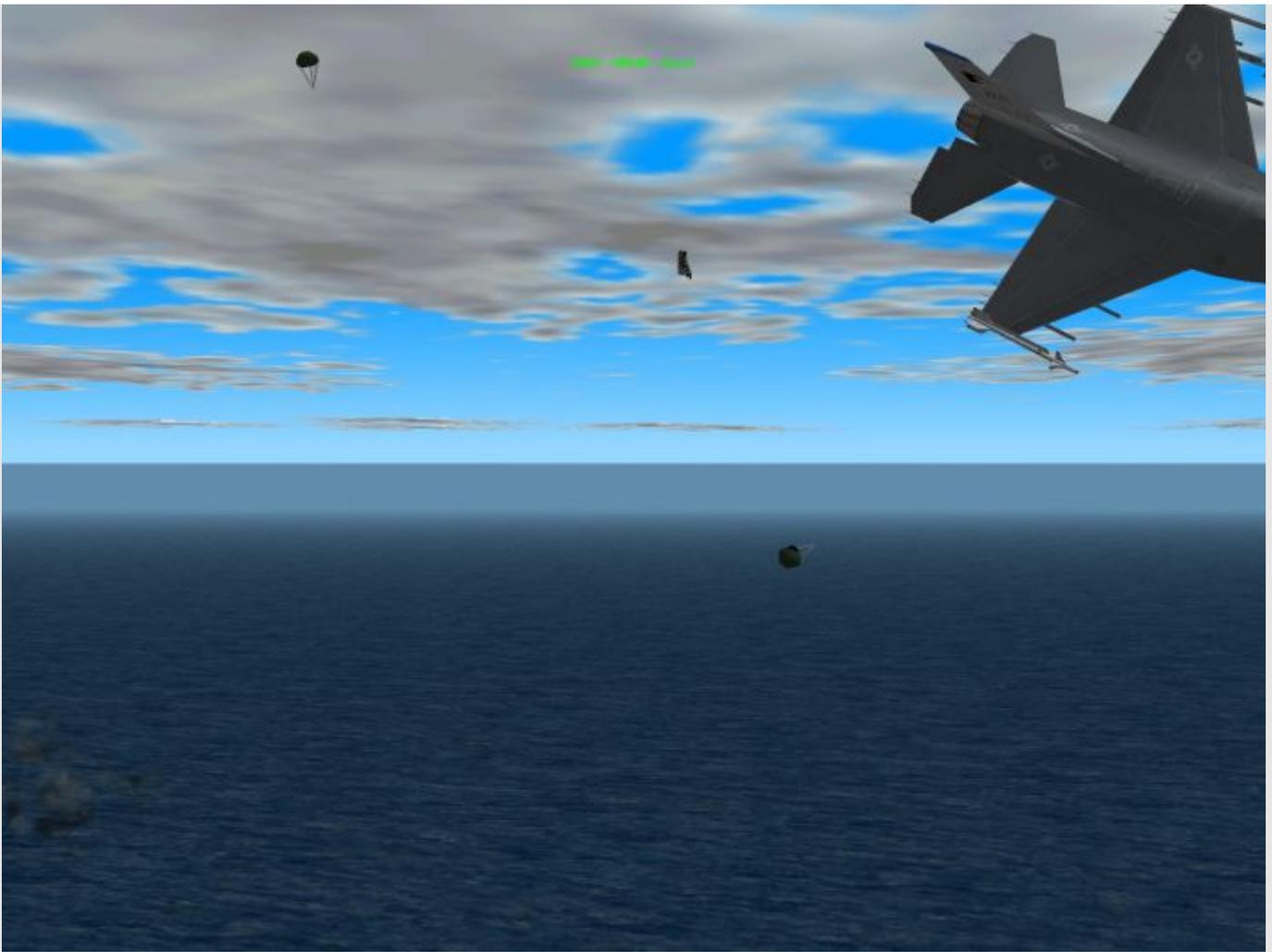
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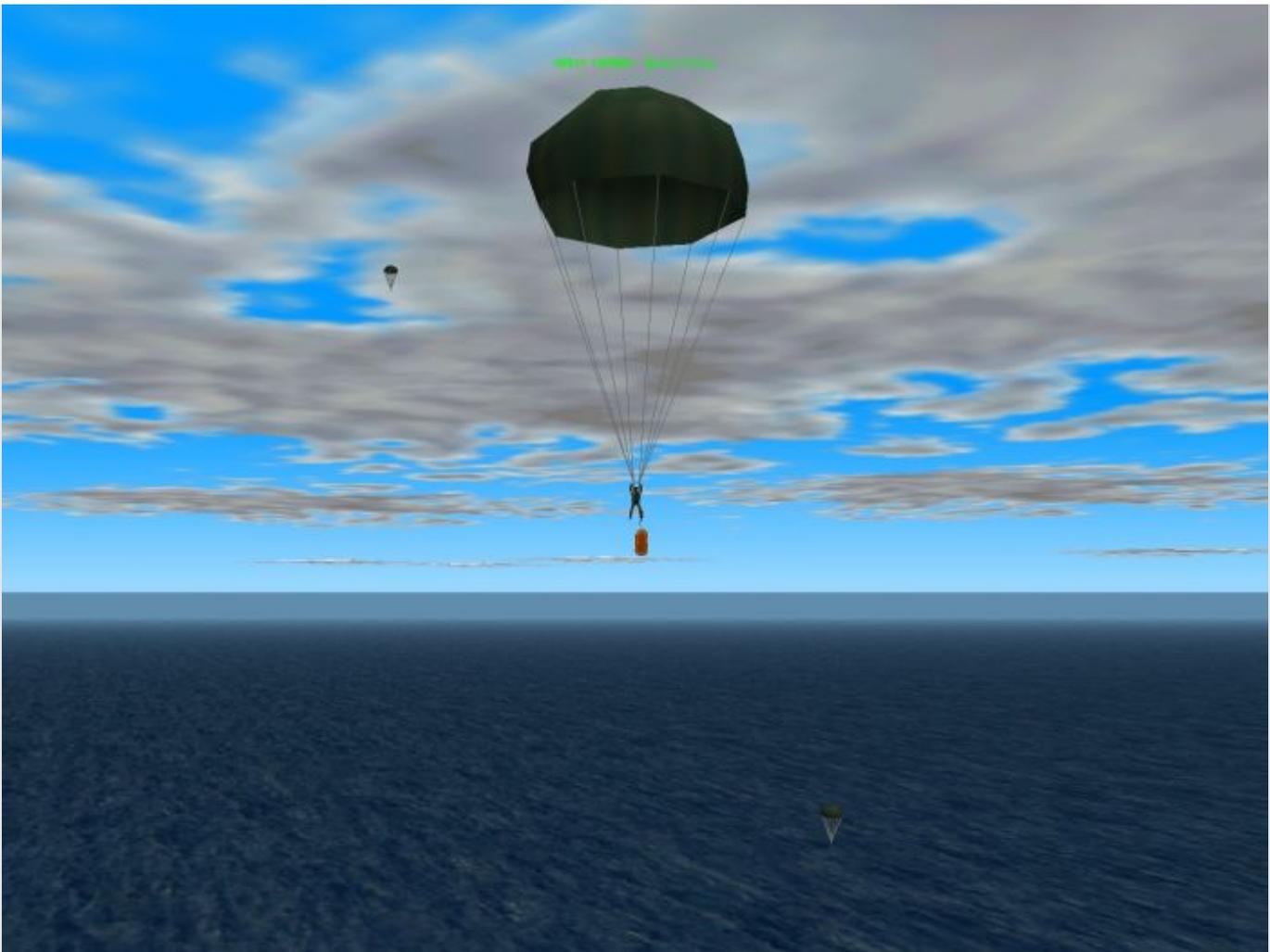
There is my ejection seat and in the background you can see the two ejection seats fired from the F-4:



As I float down to the water in my chute the F-4 that shot me down passes by and I almost swear I could see him grinning in his cockpit:



As the three of us head for the ocean I figure we can have a hell of a naval battle once we all climb into our rubber-ducky rafts!



Not a good performance for the home team. 4 missiles fired for only 1 hit, not very good percentages:

FLIGHT STATISTICS:			
Callsign	Status	Ordnance Fired	Results
Sting11	Destroyed	2 x AIM-9P	1 miss, 1 hit (50%)
		2 x AIM-7M	2 misses (0%)

#### Conclusions:

The basic tenant of all close air combat. Lose sight, lose the fight. I lost sight of the big picture, got focused on an enemy that was frustrating me, and gave the wingman a perfect shot. Hopefully learning close air combat modes with the radar and minimizing stupid mistakes like firing the Sidewinder without a lock will improve my chances of survival once I get to into campaign flying. Liberal use of the 3D pit and scanning around looking for other padlock-able targets is also a must. Of course there is also the whole other dynamic of getting my own wingman to pull my fat out of the fire, but that will come with future lessons. There is still a TON of basic work to do before I'm ready for that.

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