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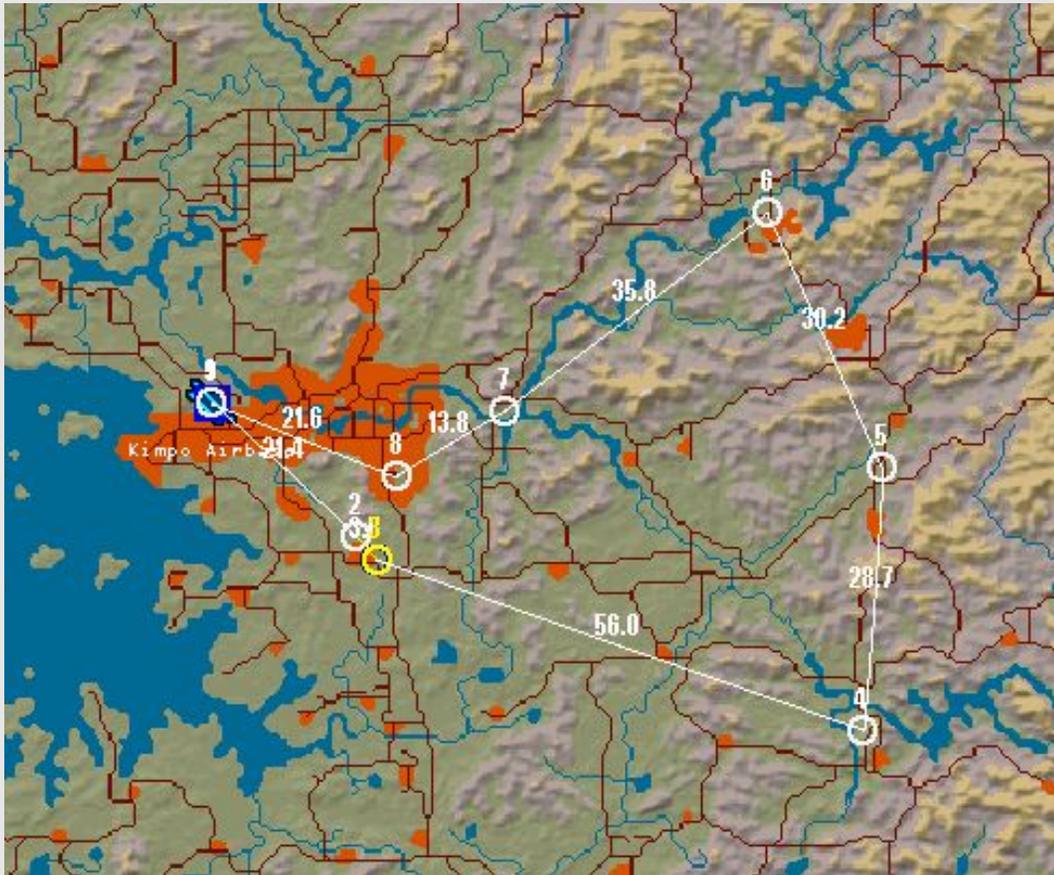
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Author	Topic: Falcon 4.0 Training Mission Report #03
BeachAV8R Member Member # 3055	<p data-bbox="296 667 1087 699"> posted 08-29-2003 20:46 </p> <hr/> <p data-bbox="296 732 919 805"> 08/28/03 Falcon 4.0/SP3 Training Mission Report #03 </p> <p data-bbox="296 829 443 862">Objective:</p> <p data-bbox="296 894 1990 927">Today we will have four main objectives for our flight as we start to ramp up on the complexity of our training missions.</p> <ol data-bbox="296 951 961 1089" style="list-style-type: none"> 1. Navigation & Timing 2. Auto-pilot 3. Terrain Following Radar 4. Stores management (selective jettison only) <p data-bbox="296 1114 558 1146">Planning/preflight:</p> <p data-bbox="296 1179 2011 1373">Our flight today will be departing Kimpo airfield for a timed navigation exercise that will demonstrate how the F-16 can fly a profile and make a strike with pinpoint accuracy and timing. As stated before it is critical to arrive over the target area as close to the planned time as possible due to many factors. Obviously if you are early or late during your run-in to the target area you can alternatively slow down or speed up to adjust your arrival over the target to coincide with your briefed arrival time. The F-16 has an exceptional means of showing the pilot how to accomplish this, freeing the pilots mind from having to do mental math and instead allowing him (or her) to fly and fight the aircraft.</p> <p data-bbox="296 1406 1409 1438">At some point during the navigation exercise we will also employ the autopilot.</p> <p data-bbox="296 1471 1755 1503">Furthermore we will engage the Terrain Following Radar (TFR) for a high speed, low altitude leg or two.</p> <p data-bbox="296 1536 1934 1568">After completing the navigation/timing course we will head out over the ocean to demonstrate the Selective Jettison</p>

system for safely getting rid of unwanted ordnance.

The navigation/timing route:



The mission briefing with the steer-points and navigation data displayed. This information is mirrored on your knee-board within the cockpit:

BRIEFING

MISSION:

YOUR TASK: Training (Diverted)

PACKAGE ELEMENTS:

Cowboy1 (Training)

1 F-16CG

STEERPOINTS:

#	Desc	Time	Dist	Head	IAS	Alt	Comments
1	Takeoff	09:00:43	--	--	--	5.0M	Takeoff
2	--	09:03:22	21.4	133	480	0.5A	--
3	--	09:03:51	3.5	141	400	5.0M	--
4	--	09:11:12	56.0	109	400	10.0M	--
5	--	09:15:29	28.7	4	400	0.5A	--
6	--	09:19:57	30.2	336	400	1.0A	--
7	--	09:24:21	35.8	233	400	15.0M	--
8	--	09:26:24	13.8	239	400	0.5A	--
9	Land	09:31:26	21.6	292	250	2.0A	Land

ORDNANCE:

Cowboy11: 2Lt. Beach

500 x 20mm M61

6 x Mk-82

WEATHER:

Wind: 244 deg @ 6 kts.

Temp: 16 deg C.

Clouds: Clear

Con Layer: 30,000 ft MSL base

EMERGENCY PROCEDURES:

No alternate landing strip is currently available.

Good Luck!

Our training load for today are 6 Mk-82 500 lb. bombs mounted under each wing on Miscellaneous Armament Unit (MAU) / Triple Ejector Racks (TER):



Debrief:

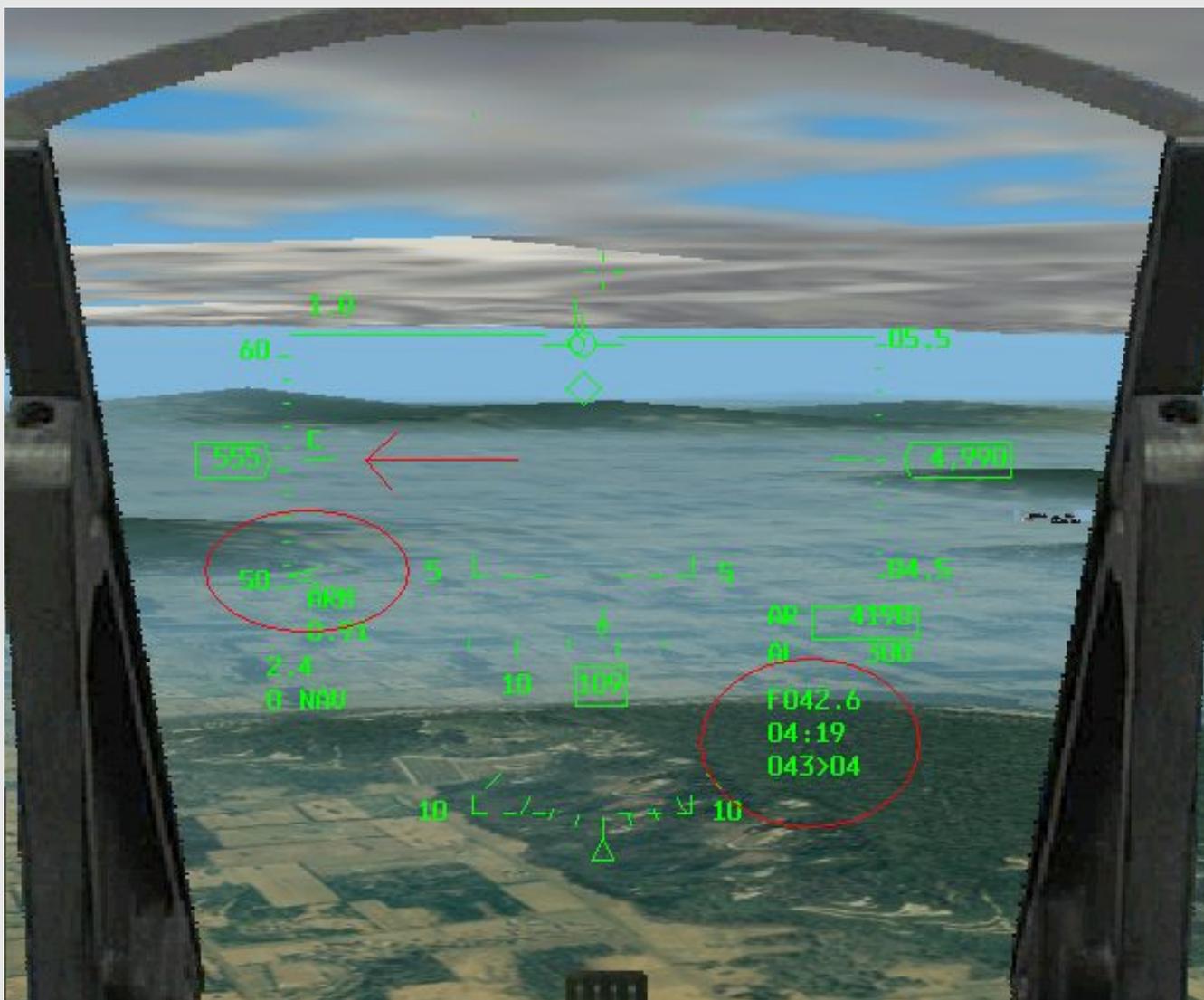
After taking off we head out on our navigation/timing exercise. Here we are setting up the autopilot so that we can do a bit of busy work in the cockpit without having to worry about tending to the aircraft (as much). The autopilot configuration panel is on the left side panel just above the landing gear indicator lights:



There are two switches, one controls pitch commands the other roll commands. In this case I've selected the pitch switch to "ALT HOLD" to maintain my current altitude and the roll switch to "STRG SEL" which will couple the roll commands to the course waypoints.

Now with the aircraft safely engaged on autopilot all I have to do is start looking at speed control to arrive at my navigation points on time. As we look through the HUD we can see a small carat on the left side near the speed tape.

This carat is showing me what speed I need to currently fly to arrive at my next waypoint exactly on time. If I fly slower than that carat speed it will gradually increase, meaning that I will have to fly progressively faster in order to "catch up" to where I need to be. If I fly faster than the carat speed, it will drop to a lower value, indicating that I am going to be early unless I slow down. In this case I'm doing 555 knots and the carat is below the reference line (the red arrow is pointing at that) meaning I need to slow down (to approximately 505 knots or so) to be back on track to reach my next waypoint at the designated time:



In the bottom right of that last HUD picture you can see my navigation data displayed. It is showing me 42.6 nm from my next turn point, 4 minutes and 19 seconds, and the 043>04 simply means I'm 43 miles from waypoint 4.

With nobody shooting at you, the navigation exercise is a lot of fun:



Cont...

<http://home.carolina.rr.com/beachav8r>

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

BeachAV8R

posted 08-29-2003 20:47



Member
Member #
3055

Now you can see I'm approaching waypoint 4 (1 second to go and 0 miles):



I turn the aircraft manually over the waypoint by temporarily disconnecting the autopilot using the CTRL-3 key. This is

similar to Touch Control Steering (TCS) in the Citation I fly, you simply hold down the button on the yoke, make a manual adjustment, then release the button and the previously selected autopilot mode resumes (sort of like hitting "coast" on your cruise control):



Now we are headed for waypoint 5, which is 18.4 miles distant and my speed carat is centered meaning I should arrive over it exactly on time:



When I hit the first waypoint that I had the autopilot engaged to follow the waypoint did not cycle automatically to the next one, so the airplane crossed the waypoint and entered a gentle turn back toward the waypoint we had just crossed. Flipping through the SP3 manual I found what I was looking for on page 50. You have to go to the Steerpoint Page on the DED (you can get to that by hitting the big number 4 on the ICP) and sequence from MANUAL to AUTO. This will cause the waypoints to automatically change to the next one once the aircraft is within 2 miles of the waypoint. This is nice to engage because the autopilot will lead the turns slightly and take you smoothly through all the waypoints without any pilot input.

Here the autopilot is now tracking the automatically cycling waypoints and smoothly turning me toward the next one:



Our next waypoint is waypoint #6, 24.8 miles away. The carat is centered on the speed tape indicating I will reach waypoint #6 right on time and this can be verified by the data in the DED (lower right corner) which is showing an ETA at the next waypoint of 09:19:57:



We can compare that value to our preflight data on our kneeboard to confirm that we are on time by looking at waypoint #6 and verifying that we planned to be there at 09:19:57:

Wpt	Time	Hdg	Spd	Alt	Dist		
1	09:00:43	--	--	5.0	--	Takeoff	Takeoff
2	09:03:22	133	480	0.5	21.4		
3	09:03:51	141	400	5.0	3.5		
4	09:11:12	109	400	10.0	56.0		
5	09:15:29	4	400	0.5	28.7		
◆ 6	09:19:57	336	400	1.0	30.2		
7	09:24:21	233	400	15.0	35.8		
8	09:26:24	239	400	0.5	13.8		
9	09:31:26	292	250	2.0	21.6	Land	Land

With the timing and navigation exercise working out well we'll move on to the next phase of the training flight and engage the Terrain Following Radar. The TFR in Jane's F-15 was always a high point and I'm anxious to see how well Falcon 4 does on this feature.

Pulling up the TFR page on the left MFD I select "NORM" mode, 300 feet for the altitude, and a "MED" ride (alters how abrupt the control movements are). Hitting the ON button on the MFD engages the TFR with those selected settings and my F-16 noses over toward the ground:





Cont..

<http://home.carolina.rr.com/beachav8r>

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

BeachAV8R

posted 08-29-2003 20:47



Member

Member #
3055

Down on the deck the TFR scans out ahead of the aircraft and gently adjust the flight altitude accordingly. I am really amazed at how well this is simulated.



A refinery flashes by the right side of the aircraft:





In this next screen you can see on the right MFD that while I was down low enjoying the ride I bypassed my next waypoint. Apparently in TFR mode the aircraft no longer automatically follows the navigation data automatically. You must manually adjust the heading you desire to fly in TFR mode:



Holding down the CTRL-3 key I temporarily disconnect the autopilot and manually re-align with the next waypoint, but since I've flown a bit off course I have to engage the burner to catch up to the speed carat so that I don't arrive late at my next waypoint:



A few things to keep in mind about flying with TFR. The obvious advantage to flying in TFR mode is that you are far less visible to the enemy. Their SAM and AAA sites will have less time to track and engage you and you will also tend to be lost in the ground clutter when enemy aircraft are searching for you. Flying low has distinct disadvantages though that must be weighed against the benefits.

First and foremost is flying high speed / low altitudes is extremely demanding on the pilot. Controlled flight into terrain is

one of the most common causes of accidents and at 300 feet and 500 knots there is just no margin for error. During the first Gulf War General Horner realized early on that low altitude bombing was the single greatest threat to his airmen. As such, he made the unpopular decision of restricting bombing mostly to medium altitudes keeping his pilots from running into the ground, and out of smaller caliber weapons range.

The second thing to consider is that you are a prime candidate for "the golden BB" at such low altitudes. Every farmer and infantryman with a rifle is within range though hopefully you will be well past them before they have time to react. I've heard that Falcon 4 suffers from some sort of "Magic AK-47"; we shall see.

Lastly, although the list could go on and on (bird strikes, limited A2G radar range..etc..), you must remember that your fuel consumption at low altitude will be markedly higher. Keep this in mind when choosing what kind of profile to fly. Getting to the target safely after a stunningly successful low altitude ingress is pointless if you run out of gas on the egress!

Cont...

<http://home.carolina.rr.com/beachav8r>

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

BeachAV8R

📄 posted 08-29-2003 20:48



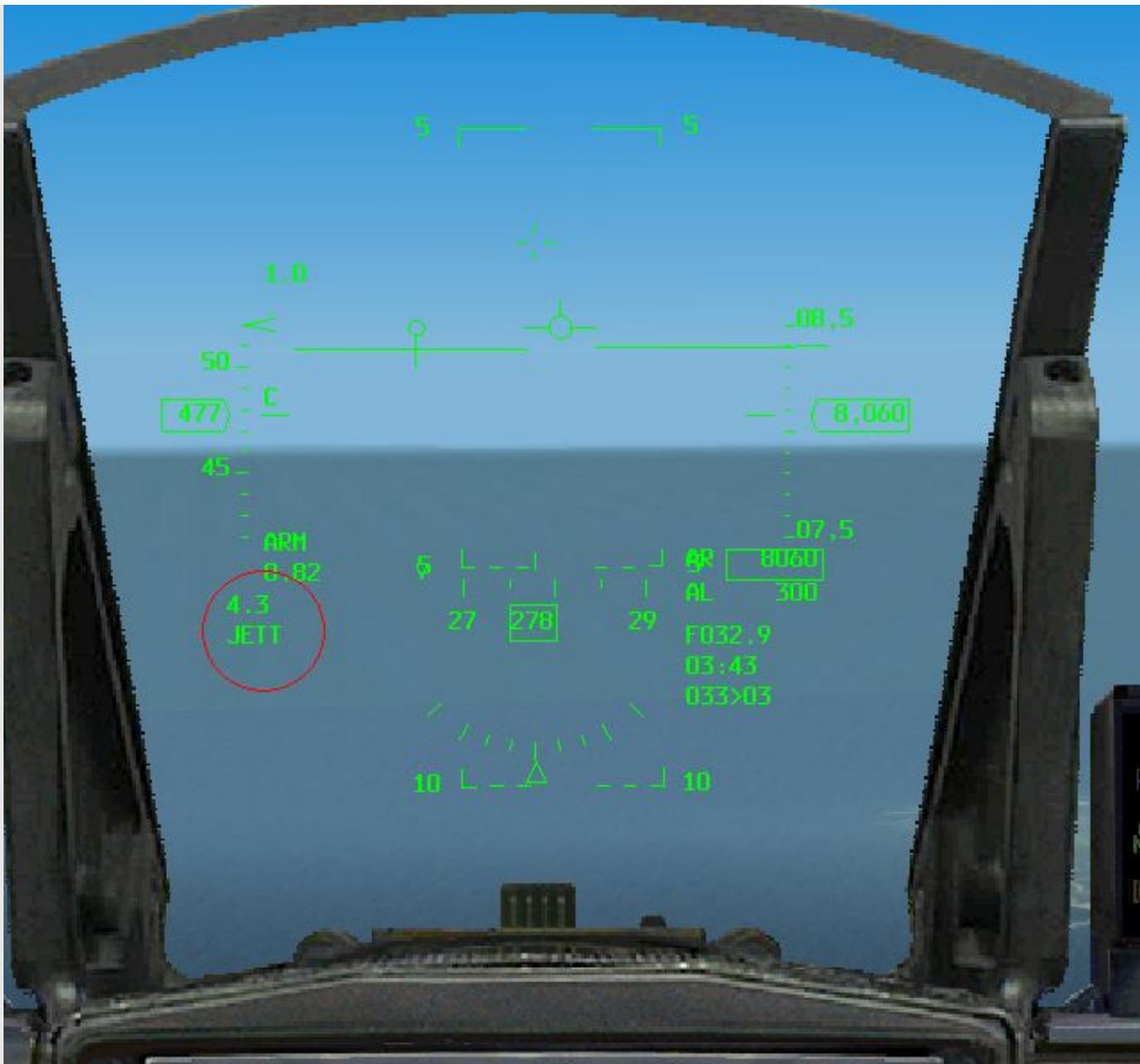
Member

Member #
3055

After completing the navigation/timing course I climb up to 10,000 feet and point my nose out over the Yellow Sea:



The HUD mirrors the fact that I'm in the Selective Jettison page by displaying JETT in the HUD:



Simply pressing the pickle button on my HOTAS releases the selected stores:



A few more button presses and I've released the right wing stores as well letting them fall harmlessly into the ocean:



Whenever you rid your aircraft of stores you are essentially changing the G-limit envelope that you can now safely pull. Since we had stores on our aircraft our configuration switch was set in the CAT III position (I don't exactly know what CAT I and CAT III imply) and now that the computer senses we no longer have stores it will give us a master caution and an associated specific systems warning light indicating that we need to set that switch to something else:





After punching out the master caution light (simply by clicking on it) I select the CAT switch to I and the STORES warning light goes out and we are back to a normal panel:



Cont..

<http://home.carolina.rr.com/beachav8r>

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

BeachAV8R

posted 08-29-2003 20:48



Member
Member #
3055

Thoroughly exhausted from all the page flipping I head back to Kimpo:



The ordnance people met the aircraft to ready it for the next flight:



Conclusions:

Wow. What can I say. The avionics and systems in F4/SP3 are simply stunning. And we aren't even scratching the surface yet guys. To all the people that I've seen complaining that the old Digital Integration/Spectrum Holobyte Tornado has never met a worthy successor I submit to you that F4/SP3 might be every button pushing geeks Holy Grail.

I don't know how this whole mission report reads (boring?), but I have to tell you, flying this mission was FUN. Of course I was itching to blow up that refinery I passed <g> but flipping through the SP3 manual and having that tiny (ok..very tiny) light bulb go off over my head reminded me of the old days of simming where you flew with the manual in your lap and every flip of the switch was a new discovery. If the combat in this sim is a tenth as good as the avionics modeling we will have a winner.

BTW – Comments on this format mission report are welcome. This is the first time I've used HUD / panel images that were cropped and added circles and arrows to show switch and HUD symbology. I was hoping to give this process a bit of an 'educational' feel too it. Yea or nay?

BeachAV8R

<http://home.carolina.rr.com/beachav8r>

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

Zero Niner

Member
Member # 273

 posted 08-29-2003 21:30    “ ”

I vote yea! :thumbsup:

Zero Niner, out.

From: **Singapore** | Registered: **Nov 1999** | IP: [Logged](#)

Karkadann

Junior Member
Member # 16827

 posted 08-29-2003 22:23    “ ”

If you like padlock mode, you're going to love the combat.

Let me leave it at that 😊

aka Maveryck: Born to take it, trained to dish it out.

From: **Kamloops, BC** | Registered: **Aug 2003** | IP: [Logged](#)

Karkadann

Junior Member
Member # 16827

📄 posted 08-29-2003 22:39    “ ”

I also feel the need to mention that there are hyper realistic knee maps available for download, and so many other goodies...

Ok, I'll shut up now - haven't even finished your report, Beach, but so far, so awesome 😊

aka Maveryck: Born to take it, trained to dish it out.

From: **Kamloops, BC** | Registered: **Aug 2003** | IP: [Logged](#)

Karkadann

Junior Member
Member # 16827

📄 posted 08-29-2003 22:59    “ ”

Yay, my third post in this thread - and they're all congruent!

And yay on the vote!

aka Maveryck: Born to take it, trained to dish it out.

From: **Kamloops, BC** | Registered: **Aug 2003** | IP: [Logged](#)

JMR

Member
Member # 2870

📄 posted 08-29-2003 23:17    “ ”

Hey Beach, if you're using a Cougar, which profile are you using?

Registered: **Jan 2001** | IP: [Logged](#)

Nift

Member
Member # 7573

📄 posted 08-30-2003 03:21    “ ”

Simply awesome, dude!!!

Great instructional feel.

Thanks. 😊

I've enjoyed your Flanker Training missions (hope there will be more) and greatly enjoying these.

I only wish there was a way to make narrated flight recordings in Falcon 4 as in Flanker 2.51 or IL-2. Oh, well.

Keep em coming.

"Men never do evil so completely and cheerfully as when they do it from religious conviction."
-- Blaise Pascal

"He who sacrifices freedom for security is neither free nor secure."

-- Ben Franklin

"If you try to idiot-proof a society, you get a society full of idiots."

-- Winston Churchill?

From: **Duluth, GA, USA** | Registered: **Nov 2001** | IP: [Logged](#)

Falcon6

Member
Member # 9297

 posted 08-30-2003 12:36    " "

Hi Beach:

Simply Superb! Great stuff for Janes F/A18, Flanker 2.51 and now, Falcon4SP3. Please keep these coming. I think I will be learning Falcon into my old age. 😊

From: **Detroit, Mi.** | Registered: **Feb 2002** | IP: [Logged](#)

Smoke1

Member
Member # 2106

 posted 08-30-2003 19:50    " "

Great report beach. Big yes on the format. Check your roll rate and overall performance CatI v. Cat III. Cat 1 is a treat.

Smoke

From: **Fredericksburg, Virginia USA** | Registered: **Dec 2000** | IP: [Logged](#)

BeachAV8R

Member
Member # 3055

 posted 08-30-2003 21:03     " "

Thanks Karkadann - and where might I find the hi-res Korea map for the knee-board? I'll search around tonight because that one I have is sorta fugly. Then again, I think I'm going to pay for Aeyes cockpit tonight and download it... 😊 So maybe his already has one...?

JMR - I'm using a Saitek X45..I have a generic profile that I downloaded off the Saitek site, but I'm not really sure what everything does quite yet. I'm slowly integrating more HOTAS stuff with the sim as I learn more... but it's tough to learn new avionics AND new profiles..I don't know how these Falcon 4 experts do it!

Nift - Thanks for the comments..Flanker 2.51 is awesome...I just didn't know if I saw any potential for a "story" after the training missions. A dynamic campaign would have just been awesome for that sim...the flight fidelity is simply awesome!

Falcon - I think I'll be learning Falcon into my old age too..lol..

Smoke - Yeah..the roll rate goes up tremendously in CAT I vs. CAT III! Whoohoo!

BeachAV8R

<http://home.carolina.rr.com/beachav8r>

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

JMR

Member
Member # 2870

 posted 08-30-2003 21:07    “ ”

I'm slowly integrating more HOTAS stuff with the sim as I learn more...but it's tough to learn new avionics AND new profiles..I don't know how these Falcon 4 experts do it

Oh man that's the worst part of learning a new sim. I've spent all afternoon trying to get used to 1 profile and it's a royal PITA.

Registered: **Jan 2001** | IP: [Logged](#)

GregP

Member
Member # 2912

 posted 09-03-2003 13:36    “ ”

Beach,

Another quick comment - to find your scheduled TOS you could've just looked at your DED and didn't need your kneeboard: 'DES TOS' (Desired Time Over Station) showed the same info, it's the line right above your ETA.

Athlon XP 2200+ / Asus A7N8X Deluxe / 512MB Corsair PC3200 / GeForce4 Ti4400 / Soundblaster Audigy X-Gamer / Maxtor 80GB ATA-133 7200 RPM / Cornerstone P1650 21" monitor / Win2K + SP3 / DX9.0a / TrackIR GX / P8000 USB / CH Pro Pedals USB / 2 MasterPilots / Game Commander 2 / Thrustmaster HOTAS Cougar, baby!

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

BeachAV8R

Member
Member # 3055

 posted 09-04-2003 00:15     “ ”

quote:

Originally posted by GregP:

Another quick comment - to find your scheduled TOS you could've just looked at your DED and didn't need your kneeboard: 'DES TOS' (Desired Time Over Station) showed the same info, it's the line right above your ETA.

Ah..yes that ICP and DED have some awesome functions. I'm still learning all the pages...thanks for the tip (adding it to my mental Rolodex..lol..)

BeachAV8R

<http://home.carolina.rr.com/beachav8r>

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

Frasco

Junior Member
Member # 5297

 posted 09-16-2003 20:50    “ ”

BEACH, i find your reports excellent, i am a beginner and you are helping a lot, puts everything in order in my mind, i would also like to have the high resolution knee maps, please indicate where they can be found, keep it up, thanks.

Registered: **Jun 2001** | IP: [Logged](#)

Wildman

Member
Member # 1350

 posted 09-16-2003 23:09    “ ”

Frasco,

I believe that Beach purchases an add-on cockpit from Aeyes site.

I'll try and did up the link, but I know he mentioned it somewhere.

Here is the link.

<http://www.cockpits.net/index2.html>

[09-16-2003, 23:52: Message edited by: Wildman]

Cess-Wildman

Cess Patrol--When the only thing keeping you up is hot air!

From: **USA** | Registered: **Aug 2000** | IP: [Logged](#)

Rocky49

Junior Member
Member # 16854

 posted 09-18-2003 22:48    “ ”

Beach:

the X45 profile you are using..is the Falcon4v2 one from the Saitek site?

Rocky49

From: **Abbotsford, British Columbia CA** | Registered: **Aug 2003** | IP: [Logged](#)

20mm

Member
Member # 2515

 posted 09-18-2003 23:08    

Wildman,
Exactly right, Beach has been using Aeyes 1600 x 1200 photo realistic cockpit. Cost is \$11.00 US and worth every cent. I got it just the other day and it's awesome. Not just the cockpit resolution, but the MFD's are so much better, the HUD font, you name it. And I haven't even tried it at night!

"I take back all the bad things I've ever said about the A-10. I love them. They're saving our asses."

-- Lt. Gen. Charles A. Horner
Air Force Commander
Operation Desert Storm

From: **tucson, az, usa** | Registered: **Jan 2001** | IP: [Logged](#)

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