



UBB.classic

[New Topic](#)
[Post Reply](#)
[login](#) | [register](#) | [search](#) | [faq](#) | [forum home](#)
[Previous](#) < > [Next](#)

» You are not logged in. [Login](#) or [register](#)

[SimHQ Forums](#) » [Air Combat Zone](#) » [FALCON 4.0](#) » [Falcon 4.0 Training Mission Report #14](#)

Author
Topic: Falcon 4.0 Training Mission Report #14
BeachAV8R

Member

Member # 3055

posted 09-10-2003 04:31



*** The following mission report is extremely long. I apologize for the length, but a lot of interesting things happened on this mission that I felt were important to include. ***

09/10/03

Falcon 4.0/SP3 Training Mission Report #14

Objective:

Night operations.

Laser-guided bombing.

Planning/preflight:

Tonight we will be embarking on our first "night" flight. Flying at night has distinct disadvantages compared to flying during daylight. Target identification and situational awareness can be greatly diminished in the dark; fortunately, we have targeting and visual aids that will assist us in our mission. The F-16 is equipped with an integrated LANTIRN system (Low-Altitude Navigation and Targeting Infrared for Night) consisting of two pods slung on the fuselage of the aircraft. The first half of the LANTIRN combo is the AN/AAQ-13 Navigation Pod which provides the optics for low-altitude navigation using the Terrain Following Radar (TFR) which we have used on several earlier training missions. The second half of the combo is the AN/AAQ-14 Targeting Pod which can be used for designating and illuminating targets visually or by slaving it to the F-16 Fire Control Computer (FCC).

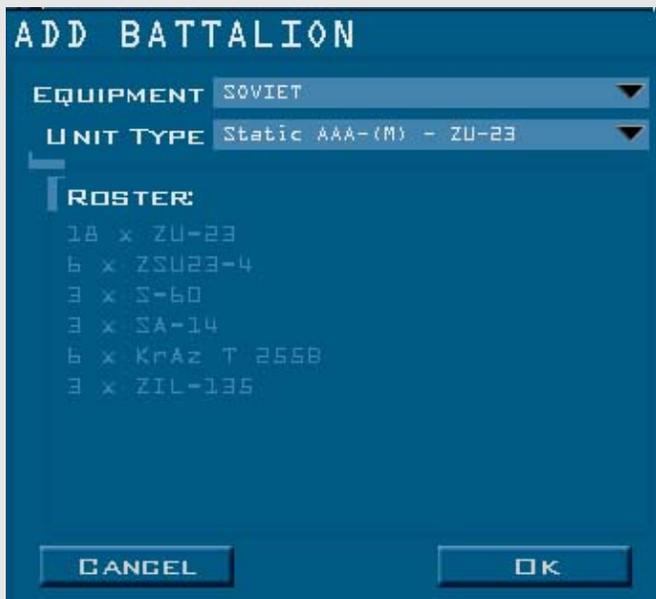
For more great information on the F-16 LANTIRN system I'd suggest further reading at this link:

<http://www.f-16.net/reference/armament/lantirn.html>

The target for tonight will be the Mangun Highway Bridge on the south-western coast of South Korea. We will depart Kunsan AB as a two-ship, proceed to the IP (WP #2) and commence a level, medium-altitude, laser-guided bomb attack on the center span of the bridge. This will be a "pinkie" mission, meaning that it will not be a pitch black night attack, however visibility will still be difficult with the setting sun and the typical afternoon haze. We will rely on the coupled air-to-ground radar and LANTIRN system to put our bombs on target:



The bridge will be defended by 3 Battalions of Soviet ZSU-23 static AAA guns. Each individual battalion fields 18 ZU-23, 6 ZSU23-4, 3 S-60, and 3 SA-14 "Gremlin" IR man-portable shoulder fired missiles. That is in ONE battalion, there will be THREE battalions covering the bridge:





RECON



160

TARGETS

Slant Range: 3160 ft Bullseye: 184 183 nm

TARGET LIST

TARGET	CONDITION	VALUE
Mangun Bridge	100% Operational	
Bridge Ramp	No damage	Very high
Bridge Span	No damage	Very high
Bridge Span	No damage	Very high
Bridge Span	No damage	Very high
Bridge Ramp	No damage	Very high

RECON
ASSIGN

Our F-16 will be carrying two of the Paveway III GBU-27/B "Have Void" bombs, which are essentially a

BLU-109 2000 lb. bomb with a seeker head and tail-control fins bolted on, making it "smart". It will follow the laser guidance of our AA/ANQ-14 Targeting Pod.



Debrief:

With our (thorough) briefing complete my wingman watches me take to the sky:



The setting sun casts a beautiful orange glow across the sky:



Waiting for my wingman to form up I enjoy the view as the city lights start coming on as the sun sets:



Cont...

[09-10-2003, 05:11: Message edited by: BeachAV8R]

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

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

BeachAV8R
Member
Member # 3055

 posted 09-10-2003 04:32     “ ”

Enroute to the IP (WP #2) we busy ourselves with setting up our systems for the bombing run and keep tabs on the timing carat, adjusting our speed to hit our waypoints on time:



Pulling up my weapons page I verify that I have a single GBU-27 ready:





Reaching the IP we make our inbound turn:



Switching from the weapons page to the HSD shows our flight path and the threat rings surrounding the AAA sites near the target area:



According to my research the ceiling of the ZSU-23-4, arguably the most potent threat we are facing today, is about 2500 meters (8000 feet). Following my lead my wingman climbs up to 20,000 feet for our attack:



Glancing down at my A2G radar I have it in Steerpoint (STP) mode, which will give me a ground stabilized radar picture of the area immediately around my selected waypoint (WP #3). Since the radar is concentrated on the waypoint there is a black area at the bottom of the radar that indicates the radar is not scanning that area. If I wanted to see what was in that area I could select SP (snowplow):



Moving over to my right MFD it's time to pull up the imagery from the targeting pod so I select TGP from the main MFD menu. With the TGP image showing I can slew the view around using the radar cursors since the image is slaved to the radar. I have WIDE view selected and even though we are still 30 miles from the target the bridge is already starting to come into view:



Cont..

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

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

BeachAV8R
Member
Member # 3055

📅 posted 09-10-2003 04:32 🏠 👤 📧 📄 “ ”

Clicking the button on the top of the MFD I zoom the view to the NARO (narrow) view giving me a better look at the target area. I've also reached over to the left side of the cockpit and armed my laser designator which places a steady "L" in the TGP picture:



Turning back to the left MFD I select the DBS1 mode of the ground radar, giving me an expanded picture of the target area:



Still on the radar page I select the general target area and hit designate on my HOTAS locking it up. The page goes blank and the NOT SOI (Sensor of Interest) message appears. All this means is that the radar has handed off targeting control to the targeting pod (the TGP MFD):



Back to the TGP MFD and I zoom in even further with the EXP setting and can move the cursors around at will. Satisfied that the targeting cursor is lined up on the center span of the bridge I lock the target again:

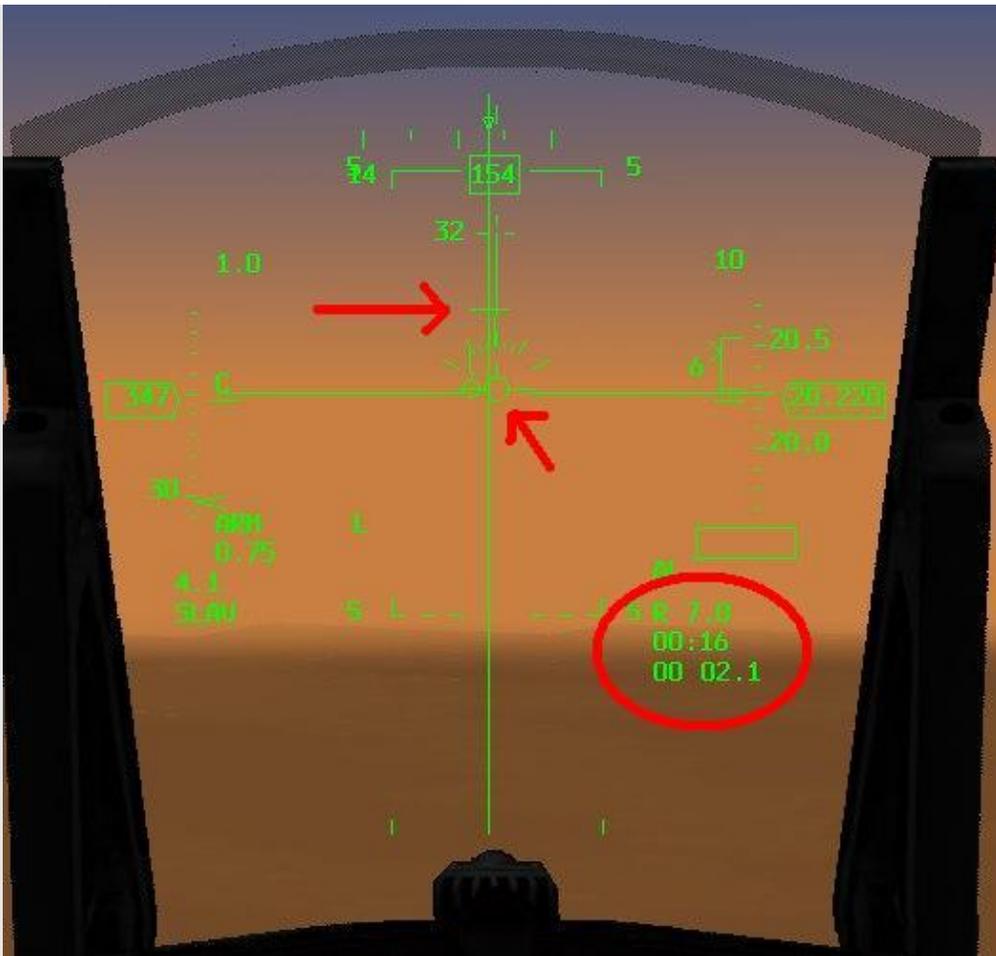




Looking out through the HUD shows me to be 15.3 miles slant range from the target, 1:02 minutes/seconds from release, and 10.9 miles ground distance to the target (remember I'm at 20,000 feet, almost 4 miles up, thus the large difference between slant range and actual distance from the target):



Now we are 7 miles slant-range, just 16 seconds from release. The horizontal release cue is falling down the vertical steering cue. There are actually two bomb release cues. The first time the horizontal release cue drops and hits the flight path marker (velocity vector) a flashing round reticle will appear indicating that you are in range to "LOFT" the bomb if you wish (pull up and toss the bomb toward the target). After you pass this opportunity the FCC resets the horizontal release cue automatically for a level release. At 10 seconds to go to the target I simply hold down the pickle button continuously giving my consent to the FCC to release the bomb when it wants:



As the time reaches zero there is a "thunk" as my bomb releases:



Cont...

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

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

BeachAV8R
Member
Member # 3055

📄 posted 09-10-2003 04:33 🗑️ 🏠 📧 📝 “ ”

Glancing down at the TGP MFD I've expanded the view to WIDE so that I can see the whole bridge, and am watching the timer in the bottom right corner which counts down to bomb impact.

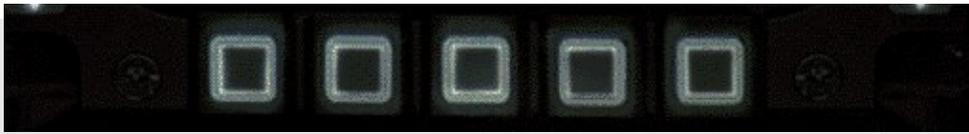


With the impact timer expired I expect to see a nice bloom and explosion. I wait. And wait. Uh. Uh-huh.. what happened? No explosion. No nothing:



Exasperated I bank hard right off the target and point my nose back toward the IP to set up for a second bombing run:





While I fly back to the IP I start frantically flipping through the Falcon 4 manual looking for some guidance as to where I went wrong. I thoroughly review the LGB bombing procedures outlined in the manual and come up blank.

I then start flipping through the F4/SP3 manual where I find the following (pg. 46):

"Check if the laser is firing: the "L" in the lower right corner of the WPN view should start flashing as soon as the impact timer meets the laser timer value (8 second before impact)."

I'm pretty sure my "L" was not flashing, so I scratch my head (err...helmet) and look down in my cockpit. Yes, my laser switch was in the ARMED position, so the laser SHOULD have fired automatically. There is one thing I am not sure about though; I notice that OVRD is illuminated on the TGP MFD; perhaps that has something to do with it?



I de-select over-ride and am going to assume that was preventing the laser from firing automatically.

The AAA down on the ground surely must have seen my bomb miss and must be frustrated I'm above their envelope:



Hitting the IP (again!) I turn back inbound. My wingman still has his two GBUs slung ready to make up for my incompetence. I'm sure he's thrilled to be taking a second run over the target (definitely not a good idea during campaign missions I would bet!):



One more time. I go through the process of acquiring the target and making sure my laser switch is in the ARMED position. I notice on this run however that when you undesignated to fine tune and re-designate I think that is what trips the "OVRD" to inhibit the laser from firing. In any case, this time I assure that OVRD is not illuminated as I finish with the designating process:



The drop process repeats itself:



Cont...

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

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

BeachAV8R

Member
Member # 3055

📄 posted 09-10-2003 04:33 🗂️ 👤 🏠 👤 📧 📌 “ ”

As the bomb releases I radio "Paveway!":



Of course immediately my Master Caution illuminates reminding me to flip the CAT switch. As Dawgman pointed out, it isn't necessary to punch out the Caution light first, since moving the CAT switch will extinguish the warning automatically!



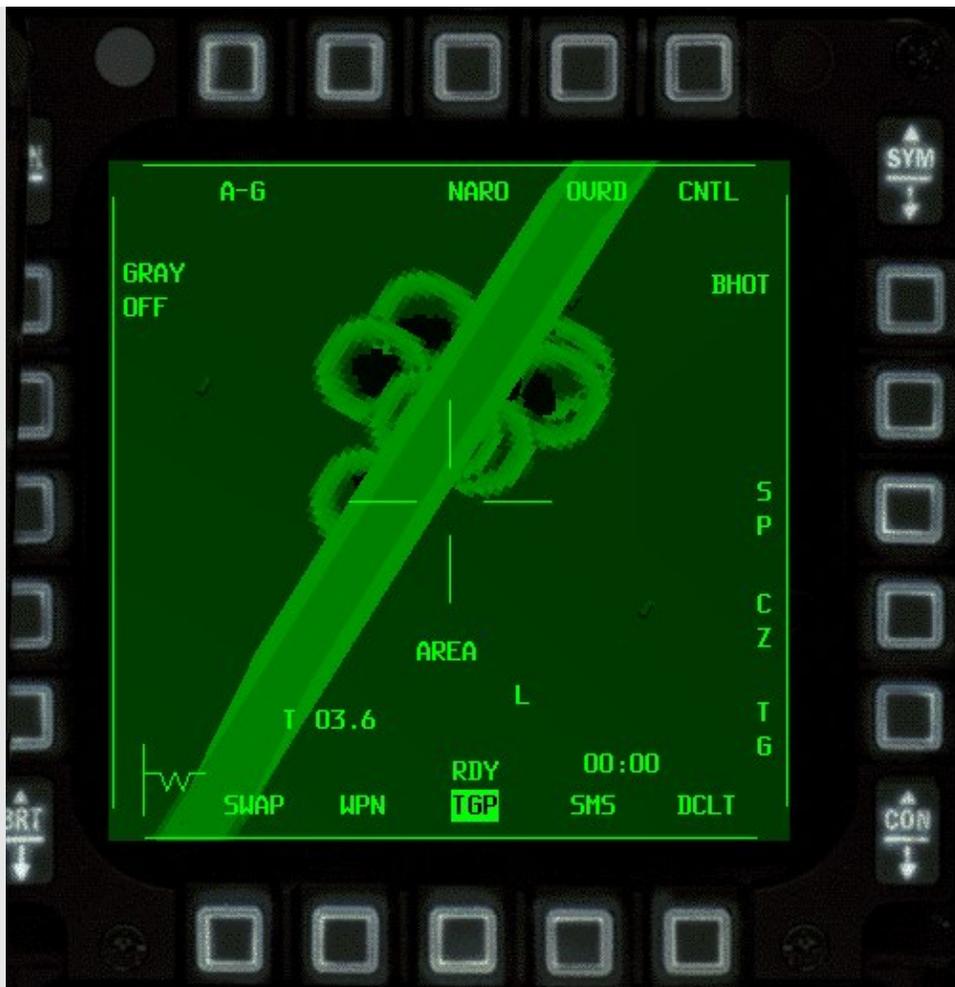
With the bomb away I again confirm the OVRD is not illuminated and sure enough, at about 8 seconds the "L" starts flashing verifying that the laser is firing:



The Paveway guides perfectly into the center span of the bridge:



With a boom the bridge is hit and it appears debris starts falling in the water, but unfortunately the span still stands. I'm assuming it takes more than one bomb take out a span, or perhaps a different type of weapon. In any case, I know I hit it and damaged it:



The water under the bridge ripples with the effects of the blast:



As I pull off the target I do happen to notice a few puffs of flack above me! I guess some of the other guns have higher ranges than the ZSU, but at least they aren't directly radar guided (they might get some altitude suggestions from the ZSU crew, but it would be totally manually directed with flack guns I assume).



Being the smart-ass that I am and feeling the freedom from the weight of the bombs I decide to do a low-altitude, high-speed BDA (bomb damage assessment) pass by the bridge to see if I visibly damaged the structure:



Cont...

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

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

BeachAV8R
Member
Member # 3055

📅 posted 09-10-2003 04:33 🗂️ 👤 🏠 👤 📧 📝 “ ”

Ok, nobody said it was a GOOD idea, just that it was AN idea! As I blaze past the bridge every gun in the 3 Battalions opens up and the smoke from their firing blankets the entire area:



As tracer fire zips past me and flack explodes all around I hear the dreaded crunch of metal and the pinging of things hitting my aircraft. My warning panels light up and the *****in' Betty starts yelling "Caution – Caution". There is definitely something wrong with the controls as the nose tries to pitch up and the aircraft wants to roll to the left:



Finally I'm out of range and above most of the explosions as the smoke from the barrage falls behind me:



Time to assess the damage; the plane certainly isn't handling very well. First things first, my canopy is cracked and splintered, and my HUD and MFDs are out as well:



Hey, are those bullet holes in my canopy??! I wish I had another bomb! Well let's see, the two yellow ones are FLCs and DDU I think meaning some of my flight-control computers are off-line which would explain why the aircraft isn't flying very well. I can't find any reference to DDU but I'm assuming it means Data Display Unit, which might drive the HUD/MFDs:



The right aux caution panel tells a bit more of the story showing FLCS FAULT, AVIONICS FAULT, RWS FAIL and a CABIN PRESS light on:



We are still flying though, and even though I would have oxygen it is probably best to descend below 10,000 feet with the cabin pressurization failed (as it would with a cracked canopy and bullet holes all over it!):



Cont...

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

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

BeachAV8R
Member
Member # 3055

📅 posted 09-10-2003 04:34 🏠 👤 📧 📌 “ ”

After researching the damage a bit (after the mission) I found on pg. 87 of the F4/SP3 manual that there is apparently a Pilot Fault Display just above the caution lights on the right aux panel. The display will list faults individually and is accessed via the F-ACK button on the left-side of the glare shield:



Good-to-know information! I'll file that away for future reference.

Now, turning to my controllability problems, the aircraft requires almost full forward travel on the stick to maintain level flight and constant right stick because it wants to roll to the left. Going over to the left side-panel I start clicking the manual trim controls to trim nose-down and right wing down and soon the stick is neutral again (very handy feature!):



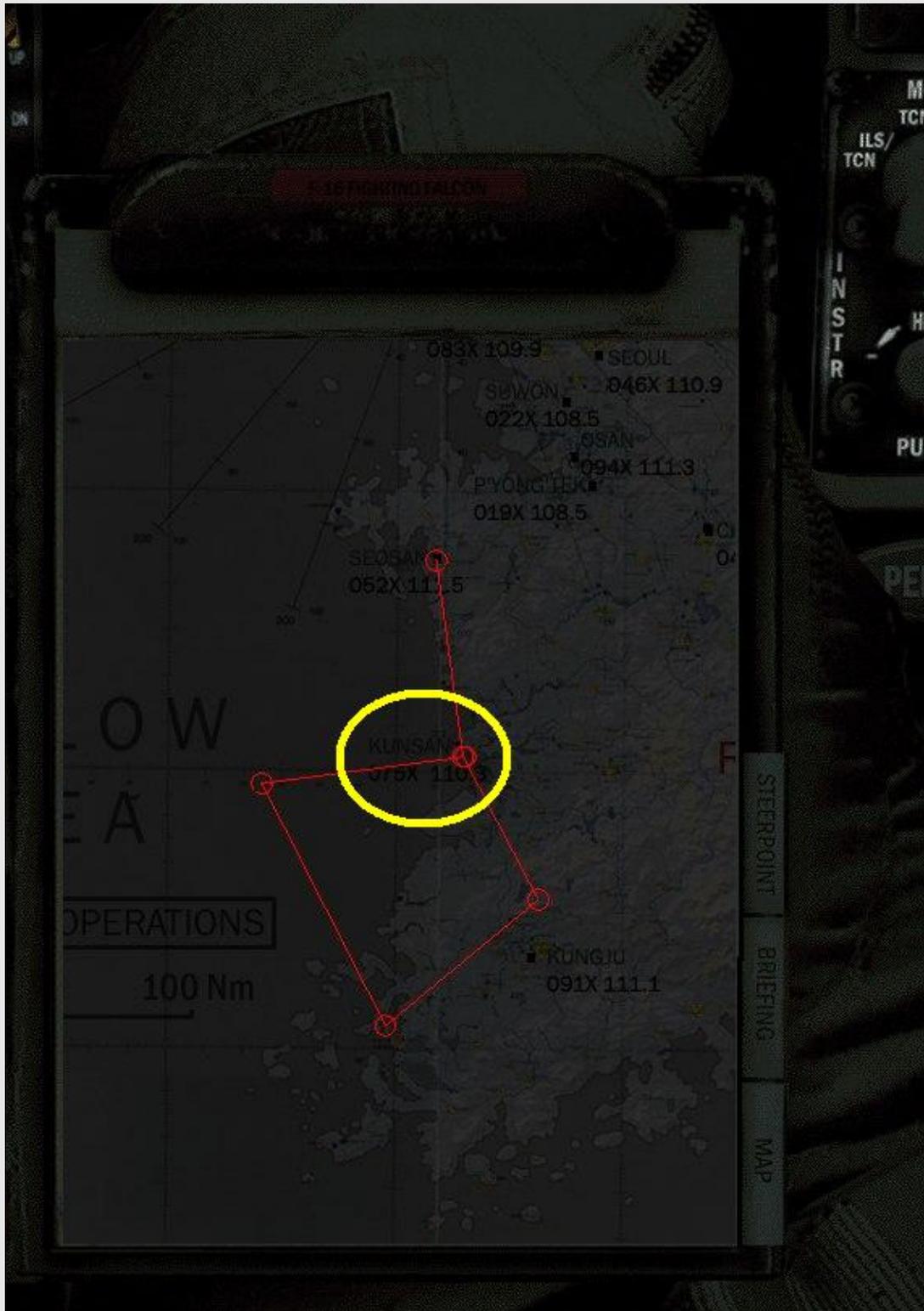
Now to get back to base. With my HUD and MFD shot out I have several options. I've been flying along trouble-shooting without any real idea where I've gone. My first instinctive reaction is to query AWACS for a steer to home-plate. Oddly enough, the answer is "Negative - Unable". I'm curious about that because every other mission I've flown I get a vector with no problem. I'm wondering if F4 even takes into account loss of electronics (ie: no IFF/transponder) and decides whether AWACS can help or not. In any case, that plan goes by the wayside.

For my second option, I call on my wingman to close up formation, then ask him to assume the lead figuring I can just glue myself to his wing and follow him all the way home. He closes up fine:



But when I tell him to assume the lead he does so with a zealousness born of a desire to command! He breaks hard left, crosses my canopy and while I try to padlock him and catch him, he disappears in the distance! With my controls a bit sloppy I just couldn't match his maneuver...

Alright. Next plan. I look down on my kneeboard and read off the TACAN frequency for Kunsan (075X) and plug that into my TACAN:





I center up the needle, look at the DME and see it counting down from 23 and getting smaller. Excellent... good use of all one's resources!



Glancing at the fuel gauge I see I'm down to 1900 lbs...not critical, but something to keep a close eye on:



Cont...

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

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

BeachAV8R

Member
 Member # 3055

📅 posted 09-10-2003 04:34 🗂️ 👤 🏠 👤 📧 📧 “ ”

At 2 miles to go I'm looking around outside but can't spot any airfield:



All of the sudden all hell breaks lose as crap starts exploding all around me and explosions roar in my ears! F*ck me..I've flown back to the previously selected WAYPOINT instead of the TACAN!! I'm right over the target area!!



I break hard and pray I don't get hit again in my already damaged state:



Luckily the gunners were probably laughing so hard they couldn't aim straight and I fly out of the flack envelope (again!).

Holy shi# that was stupid! I mean, that might take the cake right there, and I've done some pretty stupid stuff while simming. Looking down I disgustedly realize my mistake and flip the NAV control knob to TCN from NAV:



Well, if one good thing came out of it, I know EXACTLY where I am now <grin>! So looking back down at my knee-board I simply figure up a dead-reckoning heading of about 15 degrees to point me back toward Kunsan:



I also take this opportunity to try on my night-vision goggles (NVGs). They make a dramatic difference in what you can see outside the cockpit in the dark or in haze as these screens will attest.

View without NVG:



Same view with NVG:





You can read a bit more about F-16 and NVG technology in this brief article:

http://www.codeonemagazine.com/archives/1998/articles/jan_98/jan4a_98.html

Cont...

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

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

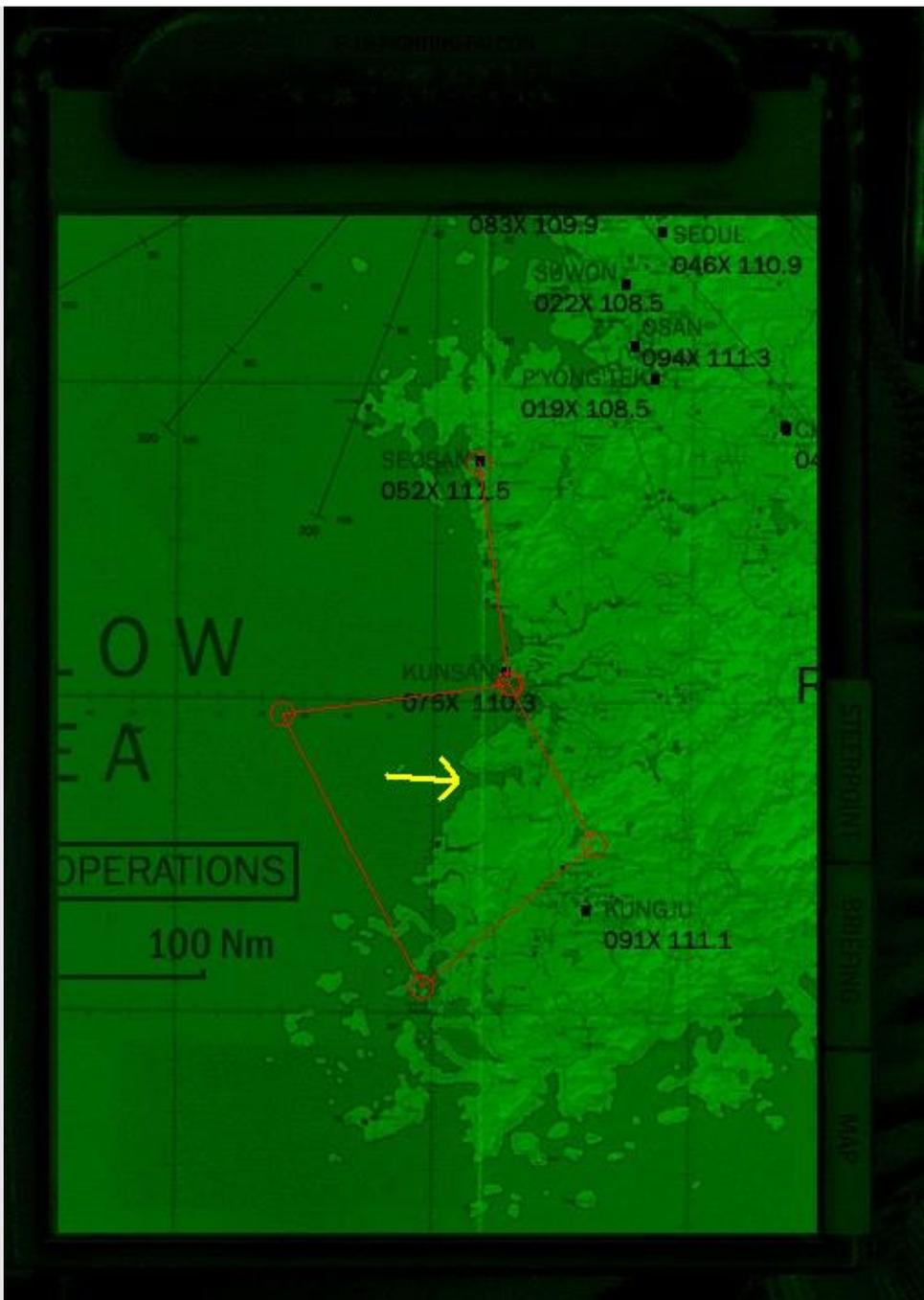
BeachAV8R

Member
Member # 3055

📄 posted 09-10-2003 04:35 🗑️ 🏠 📧 📝 “ ”

Flying along I cross-check my dead-reckoning navigation with a bit of pilotage (comparing what you see out the window with what is on the chart) and place myself just crossing this inlet on the route to Kunsan:





I'm still not getting any love from my TACAN receiver. I've verified the frequency from the knee-board is in the receiver and that the switch is on T/R (transmit/receive), but on a hunch I flip open my Falcon 4 binder and see that Kunsan's frequency is listed in the manual as 101X not 075X as my knee-board says. So I plug that into the TACAN:



Still nothing. The flag doesn't move on the HSI so I just give up on it. It is not until later, while writing this up that I research that problem and find the solution. The frequency listed on the knee-board was probably right (075X) but here is the problem. Normal data entry for TACAN station selection is done on the ICP (Integrated Control Panel) (the Upfront Control panel UFC for you F-15 guys!). I've been doing it the old fashioned way by going down on the left side panel to manually enter the frequency. According to the PDF checklist I have, you must select "BACKUP" from the TACAN control panel if you plan on using the manual method!

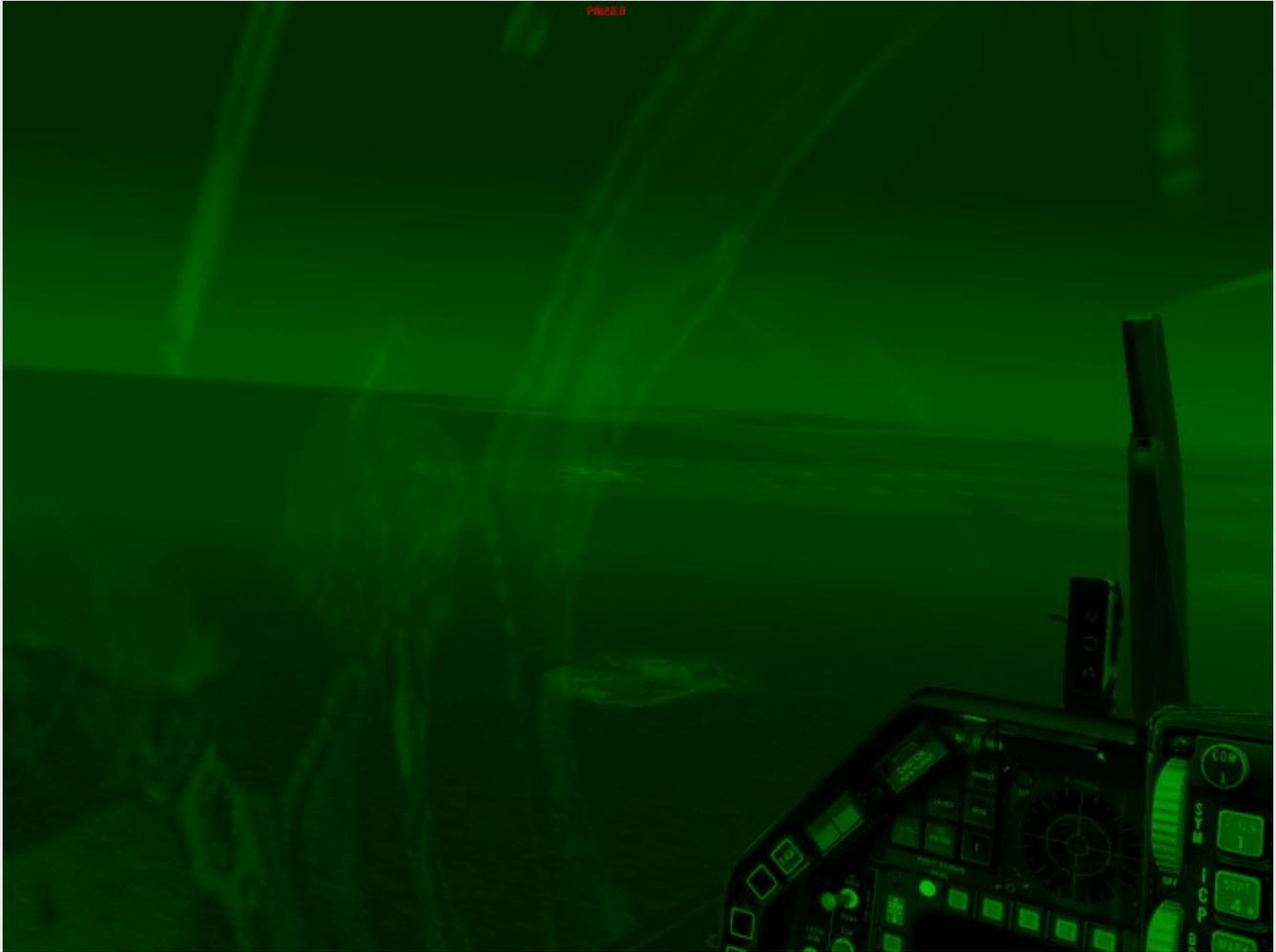


Ironically, the bottom of that page on the checklist reads: "Backup mode is provided in case of avionic failure or battle damage. When all instruments are lost the backup mode may be the only mean to recover in friendly territory. All back-up switches are on the left side panel." And there you have it.

For a complete set of AWESOME check-lists, including the Korea Navigation Volume check-list where I found the back-up mode information check out this link, they are essential resources for all Falcon pilots!

<http://users.skynet.be/bs999158/download.htm>

Well, blundering along using pilotage and dead-reckoning actually works and I'm relieved to see Kunsan come into view on the horizon:



I declare an emergency and the tower clears me for a straight-in landing, which I actually have to work for since I have no flight path marker (velocity vector) to help:



Thankfully the gear extends:





Cont...

[09-10-2003, 05:22: Message edited by: BeachAV8R]

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

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

BeachAV8R

posted 09-10-2003 04:35



Member

Member #
3055

As I roll to a stop at the end of the runway the smoke from my damaged engine envelopes the cockpit:



Going down on the left side-panel I hit the switch that stops fuel-flow to the engine and I finally can relax:



Conclusions:

Wow. What can I say? I congratulate you if you made it this far! This mission was a shining example of how much fun flying Falcon 4/SP3 can be. It was a totally canned mission that I created and I still had a blast! The damage model appears to be very thorough and what's great is that you can problem solve a lot of the damage. Obviously you can make a lot of decisions that were better than mine, but F4 lends itself to authenticity when you can expect failure if you don't have all your switches set correctly. F4 forces you to read the manual and correct the error of your ways, much like I feel real-life does.

The mission was a failure in that the span was not destroyed. I did hit it, but just didn't hit it with enough ordnance or with the wrong type:

FLIGHT STATISTICS:			
Callsign	Status	Ordnance Fired	Results
Rooster11	Damaged	2 x GBU-27/B	1 miss, 1 hit (50%)
Rooster12	Functional	2 x GBU-27/B	1 miss, 1 hit (50%)
GBU-27/B released at 19:00:12 miss GBU-27/B released at 19:14:38 hit Bridge Span - damaged			
PILOT STATISTICS:			
Callsign	Aircraft	Pilot	Rating
Rooster11	F-16CG	2Lt. Beach	Average
Rooster12	F-16CG	Lt. Reis	Average

I suppose that is what having a wingman is all about. I need to start sicking him on some of these targets!

Now for giving credit where credit is due! I can't stress to you enough how beautiful Aeyes F-16 cockpit is. It is, without a doubt, the best money I've ever spent on a piece of user created software. I wasn't even aware of the night-cockpit that came with the package and it was only on accident that I stumbled over a thread that hinted about it.

Sure enough, by hitting Shift-1 you are presented with 4 options, one of which is the night-pit with beautifully illuminated EL-type lighting. The other thing I didn't know about was the Shift-2 "wide-view" cockpit. Another nice touch (that may be a SP3 addition?). In any case, here is the link to Aeyes site:

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

And here is a link to another post on SimHQ where I've uploaded un-compressed views of Aeyes & Dallas' creation. There are 6 images for a total of about 8MB though! So broadband users ONLY need apply! Here's the link:

http://oldsite.simhq.com/cgi-bin/ultimatebb.cgi?ubb=get_topic&f=3&t=001811#000000

Thanks again to everyone for their hard-work (Falcon 4, SP3, FreeFalcon, Aeyes & Dallas, etc..etc...)

BeachAV8R

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

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

Franny
Member
Member # 3076

 posted 09-10-2003 05:16    “ ”

Beach

You da man.

Excellent - kudos for taking the time to prepare this for the rest of us to read.

And that BDA attempt will teach you 😊

Still, it could be worse - a fairly well known individual on this forum (who shall remain nameless) once tried to get into a turning fight with a Hind in JF18.

Let me see you beat that with your crazy stunts 😊

Thanks again pal - really enjoyed it.

[09-10-2003, 05:17: Message edited by: Franny]

=====

All sigged out.

=====

From: **Tunbridge Wells, Kent, UK** | Registered: **Jan 2001** | IP: [Logged](#)

Zero Niner
Member
Member # 273

 posted 09-10-2003 05:35    “ ”

Hmm, perhaps other Viper pilots would correct me, but I'd say the best ordnance to take for a bridge strike would be a pair of GBU-10s or 24s.

But I haven't migrated to SP (yet!) and am still flying on RP3 (or is it RP4? ??? 😞)

Anyways, I enjoy reading your reports. Please keep up the good work!

Zero Niner, out.

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