Scenario Description

In this tutorial you will learn and practice how to assess and then defeat a fairly typical defensive network. Although landlocked you have a small but fairly typical mid-90's USN Carrier Air Wing. There is a Squadron of F/A-18 Hornets, another Squadron of A-6E Intruders, you are supported by a pair of F-14 Tomcats with Recon pods, and another pair of EA-6B Prowlers.

You may note that this mix of aircraft is not necessarily very compatible. A high speed, short-ranged strike fighter with a fairly limited bomb load and a long legged but slow bomb truck! An interesting problem which complicates your timing.

The enemy defenses will be more of a problem, and you can expect some surprises, so don't be surprised.

Note: This tutorial should take about 1 hour to complete.

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Scenario Briefing

Your job today is to neutralize the Diori Hamani International Airport, 300 miles to the Southwest of your base. You have reliable intelligence that the base's fuel system is contaminated, and it will be unlikely that the regiment of MiG-23s stationed there will fly today.

First let's examine your assets, you have 24 aircraft, so this is starting to get complicated:

12x F/A-18C: Very nice but as with all multi-role aircraft, they are good at several jobs but not great at any of them.

- Good at Air to Air (A2A) but not as good as an F-15C or a Su-27.
- Good at Air to Ground (A2G) but not as good as an A-6E or Tornado.
- Good at SEAD but not as good as an EA-6B or Tornado ECR.

Although it, as does the F-16, have a wide range of munitions its bombload and range are limited, in fact you may need to jettison ordnance to get home if you're coming in heavy:

No.	Load	Range	Wpns	Ideal For	Remarks
2	GBU-24B (2K lb)	420nm	2	Penetration heavy damage	LGB, 12Kft
2	HARM/CBU	280nm	2+2	SEAD, Follow up	Range!
4	SLAM	360nm	2	Standoff strike	SLAM is slow
2	Maverick	450nm	2	Sniping at surprises	Low damage
2	CBU	420nm	2	A/C on the ground	Not PG

You can see that range is an issue for at least 2 of the loadouts and the weapon load is generally 2 of each type per aircraft.

8x A-6E: Look at that bomb load, but this bomb truck is slow by today's standards, sub sonic maxing out at 520knts, oh and no A2A weapons! This aircraft does only one thing, bomb stuff.

No.	Load	Range	Wpns	Ideal For	Remarks
2	GBU-24B (2K lb)	650nm	4	Penetration heavy damage	LGB, 12Kft
4	Mk 82 Snakeeye	450nm	28!	Plastering stuff with bombs	Low level
2	Skipper	725nm	4	Sniping at surprises with a kick	LGB, 12Kft

The A-6E can go a lot further than the F/-18 but can't defend itself when it gets there. Carries at least twice the bombload as the Hornet and when you talk about dumb bombs, that equates to half of a B-52 load of bombs!

2x F-14B: The Tomcat is meant to be an A2A fighter but in an effort to extend its usefulness into the post-Cold War era, attempts were made to make it more versatile. Arguably the most successful divergence was in the Reconnaissance role where the addition of the TARPS (Tactical Airborne Reconnaissance Pod System) pod. Since there is no air opposition today, the rest of the F-14 Squadron is taking a break and these two will do your reconnaissance tasks.

2x EA-6B: Using a larger version of the A-6 airframe, this tool is designed for one thing, defeating enemy radars. The two ways it does this are with its ECM pods and with HARM missiles. Very handy in a fight but the long range comes at the expense of speed and defense.

Let's see what the enemy has:

Radars: There are two Big Back long-range 3D installations. It's very convenient that they are both radiating for you to find them, that won't happen often. Big Back is the NATO reporting name, there is a naming system, but I have no idea where they come up with some of them. Long range is self-explanatory, and the white ring shows you an approximation of the coverage. 3D means that the system tracks range and azimuth (bearing) as all 2D radars do but also altitude. If you want more information, go here. Consider how you would kill a radar. A HARM (high-speed anti-radiation missile) will do the trick but this is a very good weapon, and you only have 6 of them. Take a look at the photo, or just the DB is you don't have the photo pack added. With 1 damage point and looking that flimsy, you could probably disable it with a pointy stick! Save your HARMs for something a little trickier. A cluster bomb would do quite nicely.

SAMs: Surface to Air Missiles. We've run into these before but there are dozens of different systems out there. You need to understand the ones you're facing and a bit of the doctrine behind what they are doing.

First, understand the missile, here is some background on Soviet/Russian SAM development.

You're facing an SA-2f, that's the NATO term. S-75M if you go by the Russian term. It's old technology but the comment 'responsible for the downing of more American aircraft than any missile in history' should grab your attention. You can defeat it, avoid it and probably spoof it but you can't ignore it! If you recall in Tutorial 2 we stayed under its engagement envelope, unfortunately you have some LGBs (Laser Guided Bombs) which will force you up into its engagement envelope. Remember what the number to the upper left of the unit represents, 11 in this case? The number of elements in that unit, checking the DB; it has 6x Launchers, 3x MANPADS (more on that later but scrub going in low), and 2x Radars, remember those HARMs we saved!

Second, understand what the unit is doing, in this case defending the target you are going after so no luck avoiding it. Remember that a SAM is an Air Defense (AD) system, it is there to defend things, not attack things. It achieves its objective if you simply avoid what it is defending, often however, you're attacking something else and you can simply fly around defenses if they are not oriented on your objective.

Third, understand the system. Except in certain budget strapped militaries (usually western nations who love to learn lessons over again), AD systems are just that, systems. Radars are part of it, fighter aircraft are part of it, and SAMs are part of it. But not just

one SAM. Layers of SAMs. Not all fixed (like the SA-2's) but mobile. Different categories are:

- THAAD (Terminal High Altitude Area Defense): This is Anti-Ballistic Missile (ABM) defense.
- HIMAD (High to Medium Air Defense): Stuff that makes you fly low to avoid like SA-2, SA-10/20, Patriot, HAWK, etc.
- SHORAD (Short Range Air Defense): Stuff that makes you fly high to avoid like SA-8, Crotale, Rapier, etc.
- VSHORAD (Very Short-Range Air Defense): Stuff to cover specific approaches or targets like most MANPADS (Man Portable Air Defense System), AAA (Anti-Aircraft Artillery), etc.

It is likely that there are some SHORAD and perhaps some VSHORAD providing the layering of an AD system.

Now you can look at the target, it's an airbase and you've already attacked one of those, so nothing special about that. Some points to note however:

- Two runways are hard to completely shut down.
- Only one ammo facility, that's a vulnerability.
- Only two access points, another vulnerability.
- Lots of parking and hangers for those MiG-23s.

You should make your own plan, try different things, and run the scenario several times. To challenge yourself try and keep all aircraft within the borders of Niger at all times. If you're struggling, what follows is a plan but there are many ways of doing this:

- Launch your 2x F/A-18 with the HARM CBU load. Drop the CBUs on the radars and launch the HARMS at the SA-2s.
- Launch the 2x EA-6b at the same time and follow up with OECM ON and put their HARMs into the SA-2s as well. Keep them around with their jammers on though.
- Launch your 4x F/A-18 with SLAMs to follow up the HARM attacks on the SA-2s. By now the SA-2 will be badly reduced or even eliminated. Without radars they can still launch but with much less effectiveness. You may need to do some SAM dodging later if you're unlucky.
- Your 2x F/A-18 with Maverick and 2x A-6B with Skipper should linger a few miles from the base as 1 of your F-14 TARPs. Once you find any surprises that might be waiting for you, you can sort them out.

- For the Airbase itself, it is probably best to set up missions, keep them inactive until you want to use them. Timing is less critical because you know they aircraft there are grounded, but you can practice your timing by getting the first strike (probably GBU-24s to close the runway access) over the target moments after the last of the VSHORAD is removed.

Enjoy. There will be a few messages along the way.

First Casualty Message

Ok you have inflicted your first casualty. Your entire strike package should be in the air by now. You should also ensure that your EA-6Bs have their jammers (OECM) On.

Things should start getting busy now.

OECM Message

Now, a few words on Jamming or OECM (Offensive Electronic Counter Measures) and their role in strike missions. I am not the best qualified to explain this subject but there are plenty of comments on the Forum, such as this.

One and a short explanation on the Command site and you can also look in the manual or ask a question on the Forum for more clarification. Some thoughts:

- The first thing to remember is that you are never really sure if your jamming is working and if your jammer is jammed chances are it's not so *NEVER* rely on jamming alone to get you through! Always assume that your jammer is not working and continue to use terrain masking, anti-radiation missiles, minimized altitude exposure and maximized escorts to get you to the target. Consider jamming as a bonus to mitigate risk.
- There are three general types of jamming platforms:
  1. Ground based these tend to be Russian/Soviet types and are generally defensive in nature.
  2. What I call wide body or large aircraft based like the EC-130 Compass Call or Tu-16 Badger J, these are for area jamming either offensive or defensive.
  3. Tactical or escort jammers, these are the guys who can keep up with the strikers and stay close to protect them; such as the Tornado ECR, EA-6B

Prowler, or the EF-18 Growler. These are often equipped with anti-radiation missiles and used for SEAD (Suppression of Enemy Air Defence) tasks. Two examples that I can think of can work for both area and escort, the EF-111 Raven and the SU-24MP Fencer F.

- Picture OECM as an electronic Smoke Screen that moves with the jamming unit. Try (and it is not always possible or advisable) to put the smoke screen between your attacking units and the enemy unit looking for it. For escort jammers in particular, being in front of the strikers is rarely a good idea, but if it is very close to the striker its electronic cloud should engulf and protect the strike aircraft as well.
- A good rule of thumb is that new jammers will work well against old radars, but the reverse is also true new radars will burn through old jammers quite easily.
- Remember that a jamming unit is very easy to detect. Perhaps an enemy will not be able to get an exact fix on it but once it turns its jammers on, it becomes a powerful emitter, detectable from a long distance. You may be protecting your unit's exact position, but you are letting the world know that there is something powerful coming their way.

In this situation the bad guys know you're coming, and your Prowlers have got very capable jammers that should affect the older SAM and radar systems you are facing. Turn up the noise and turn on your electronic smoke screen.

Red SA-2 Damaged Message

You have caused some damage to an SA-2 sight. Good. Now there is a lot of random calculation going on in these strikes so you may have gotten lucky and knocked out most of the units with your first hit or perhaps only some slight damage. You have plenty of ordinance so if you need to use more, that is what it's there for, but if you have spare munitions keep it handy for follow-up strikes.

TARP Recon 1 Message

You should probably drop your TARPS aircraft down to about 20000 feet so he gets a better view. Crank it up to afterburner as well, no need to hang around, but you will need to overfly the airport very closely to find out what is going on down there.

TARP Recon 2 Message

It's time to launch your 2nd TARPS F-14, chances are all of that afterburner work with your first one has sent it home for fuel by now. You might want to get a better look at the damage you have done, and you should be able to get nice and low to use those nice sensors.

Unknown Contacts Detected Message

You've detected something around the airport. Currently it is probably yellow or unknown, but you know better than that, it must be up to no good just be sitting there. Well in this situation you're probably right but in many scenarios you will need to get a positive ID on your targets. Some devious designers like to put neutral targets right in amongst the bad guys and you don't want to hurt innocents, right! It makes for bad headlines. Well in this case you're pretty sure anyone in the area of the airport is bad so go ahead and take them out.

Vampire Detected Message

Ok you have detected a missile, well that is to be expected, these guys just don't want to get bombed, it's nothing personal.

If the missile is firing at an aircraft, you have some work to do:

- If this is an SA-2, dive below 1,000 ft.
- If this is not an SA-2, climb above 25,000 ft.
- Get out of the engagement range and do it fast.
- Take stock and re-plan. If you have more aircraft coming in select them, un-assign them, hit "CTRL + E" to disengage from targets and pull them into a safe area while you think.

If the missile is firing at a weapon, it is very inconvenient but to be expected. Now you may have to re plan things and re-assign aircraft to targets.

- If this is an SA-2 engaging you, you have some SLAMs just for this purpose.
- If this is SHORAD, try and find out what type and study the DB to find a weakness.

- Remember a SHORAD's job is to keep you high in the SA-2 envelope but hopefully you have killed them already. What weapons do you have that can engage from a high altitude? LGBs perhaps? If you drop from directly above, they will have a harder time hitting the bomb. Guided glide type weapons (such as Skipper or Maverick) are easier for them to hit. Save your glide weapons for the AAA and reassign some bombs to the SAMs.
- Do not let your low-level attackers come in while there are undamaged SAMs or AAA in the area. Things will get messy.

Summary Message

In this tutorial you have practiced a strike mission on a defended area. You've learned a little bit about how defenses are grouped and arrayed and how you might attack them. You should have also learned that the enemy has a vote and will try to disrupt your plans, that's his job.

You should feel free to practice this tutorial multiple times to try out various methods. Your base has unlimited munitions so feel free to mix things up. The scenario lasts 24 hours and you can play longer than that if you like so the 6 hours it takes to change munitions can be sped through pretty quickly or set it up in the Editor.

Ok, I hope you have enjoyed this tutorial, see you in Tutorial 6 where your opponent will have a bit better equipment.