

DCS: Black Shark Tweak Guide Alpha Version

What to expect from this tweak guide?

Tweaking means optimizing or fine tuning. This can be both making Black Shark look better, or increase FPS. If you are looking for an FPS boost, don't expect miracles by tweaking, for that you will need to buy new hardware.

With this tweak guide I try to bring all the important tips and tricks spread over the internet together. In case you find something not covered in this tweak guide, please let me know. I would be happy to include it!

Before we begin:

- DCS Patches

http://www.digitalcombatsimulator.com/index.php?end_pos=2364&scr=products&lang=en

- ModMan

<http://forums.eagle.ru/showpost.php?p=615523&postcount=1>

- **DcsMax** (Affinity tool is not longer required (see autoexec.cfg) though still a nice tool to have.)

<http://forums.eagle.ru/showthread.php?t=39261&highlight=affinity+tool>

- Black Shark backup-copy

After a fresh install, I would like to advise you to copy the whole Ka-50 folder and rename it to something like Ka-50_Backup. Now you always have the original files if you need them and, you will not lose one of your 8 activations if you want a fresh install.

Must have mod's:

- FPS Flare Tail by Olsiv

<http://www.virtual-jabog32.de/index.php?section=downloads&subcat=67&file=1122>

- NoCloudShadows

<http://www.virtual-jabog32.de/index.php?section=downloads&subcat=67&file=1125>

Advised mod's:

- HokumSounds_v1

<http://www.virtual-jabog32.de/index.php?section=downloads&subcat=67&file=1124>

- Default Head Movement Off (For Track IR users mainly)

<http://www.virtual-jabog32.de/index.php?section=downloads&subcat=67&file=1123>

Where to get mod's:

- **www.lockonfiles.com** (Login required)

http://www.lockonfiles.com/modules.php?name=Downloads&d_op=viewdownload&cid=154#cat

- **www.virtual-jabog32.de**

<http://www.virtual-jabog32.de/index.php?section=downloads>

- **www.checksix-fr.com**

<http://www.checksix-fr.com/>

Tips:

- Always get your chosen scenery file, also online.

Online servers force you what scenery file to load. You can work around this.

In Ka-50/Bazar/Terrain/Scenes you find High.scn, Medium.scn and Low.scn with their different file sizes. If you always want High.scn to be loaded, simply copy High.scn to your desktop and rename it to Medium.scn, then place it back in your scenes folder. Do the same with Low.scn and you will have 3 High.scn files ;)

- Editing cfg and lua files:

Advised is to use NotePad++ to edit cfg and lua files to prevent errors. I personally never had problems using the standard windows Notepad though. Either way, you can get the notepad replacement here:

<http://notepad-plus.sourceforge.net/uk/site.htm>

- Get the latest graphic driver for your system and tweak it

Nvidia setup: http://www.tweakguides.com/NVFORCE_6.html

ATI setup: http://www.tweakguides.com/ATICAT_7.html

Note: DCS Black Shark does not ask a lot from your graphic card (much more from your CPU processor). I have set my 8800 GTS almost on its maximum without a significant frame drop. With your graphics card you can gain some quality.

Anisotropic filtering: **16x**

Antialiasing – Gamma correction: **On**

Antialiasing – Mode: **Override any application setting**

Antialiasing – Setting: **8x**

Antialiasing – Transparency: **Multisampling**

Conformant texture clamp: **Use Hardware**

Error reporting: **Off**

Extension limit: **Off**

Maximum pre-rendered frames: **3**

Multi-display/Mixed-GPU Acceleration: **Multiple display performance mode**

Texture filtering – Anisotropic sample optimization: **On**

Texture filtering – Negative LOD bias: **Clamp**

Texture Filtering - Quality: **High Performance (+2)**

Texture Filtering - Trilinear Optimization: **On**

Threaded Optimization: **On**

Triple Buffering: **On**

Vertical Sync: **Force On**

Now, let's dive in to the game configuration files.

producer.cfg (can be found in: Ka-50/Config)

ForceFeedbackEnabled = true;

In case you don't have a Force Feedback Stick, putting this option to false has a positive effect on FPS.

ForceTrackIR3ProZoomAxisToXAxis = true;

Keep this option on only if you have the Track IR3 Pro.

graphics.cfg (can be found in: Ka-50/Config)

```
DisplayMode
{
    resolution = {1024, 768};
    bpp = 32;
    fullscreen = 0;
    aspect = 1.333333333;
    Interface
    {
        resolution = {1024, 768};
        bpp = 32;
        fullscreen = 0;
        aspect = 1.333333333;
    }
    Simulation
    {
        resolution = {1024, 768};
        bpp = 32;
        fullscreen = 1;
        aspect = 1.333333333;
    }
    AVI
    {
        resolution = {640, 480};
        fullscreen = 0;
        aspect = 1.3333;
    }
}
```

These options in graphics.cfg are obsolete and "leftovers" from Lock On.
Settings are altered to Ka-50/BlackShark/data/scripts/options.lua
Lets continue the graphics.cfg first before switching to options.lua

```
Precaching
{
    around_camera = 50000;
    around_objects = 10000;
}
```

These options in graphics.cfg are obsolete and "leftovers" from Lock On.
Settings are altered to Ka-50/BlackShark/data/scripts/options.lua
Lets continue the graphics.cfg first before switching to options.lua

```
Camera
{
    current = "Medium";
}
```

These options in graphics.cfg are obsolete and "leftovers" from Lock On.
Settings are altered to Ka-50/BlackShark/data/scripts/options.lua
Lets continue the graphics.cfg first before switching to options.lua

High
{

```
near_clip = 0.2;  
middle_clip = 4;
```

This is what the near clip and middle clip do if you increase them. Not something we want and it only increases FPS when standing on the ground doing nothing. If you have problems with this, what often appears as, "white line", decreasing the near and middle clip may solve these issues.

So, I keep them on the standard settings shown above.



```
far_clip = 80000;
```

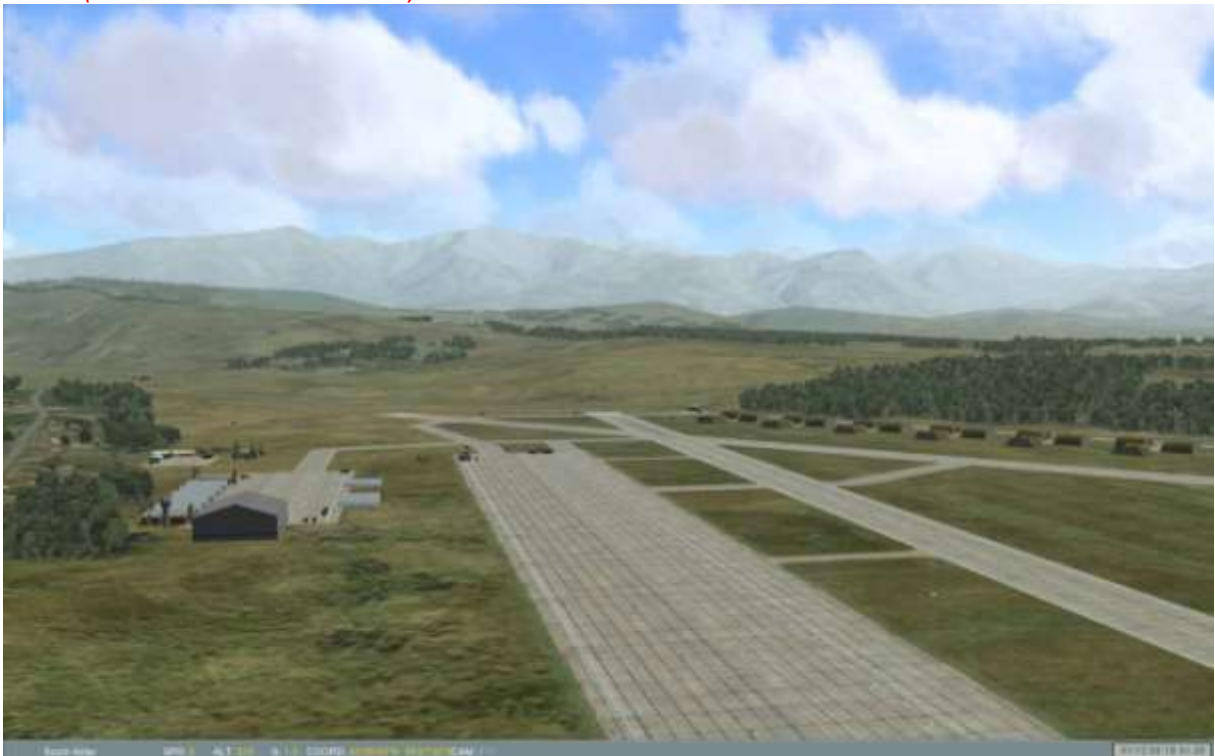
This is what far_clip is doing at 20000. On the first sight it increases foggiess. Seen Lock On though, it will probably be in direct relation with how far you can see land, though in BS, this is covered by fog. Good thing is that lowering this number increases FPS somewhat, bad thing is that the land close by gets more foggy as well, with the result of far less contrast and deepness of land color. Next to that, the trees and buildings come out way too much through the fog.

I have chosen to stick with 80000. The reason for this is how this setting goes well together with putting FogParam1 and FogParam2 off. More about FogParam later.

20000:



80000: (Also take a look at the clouds)



```
structures = {60, 6000};
```

The first number means the closest popup range for small buildings, the second number means the farthest popup range for large buildings. Buildings "eat" your CPU and so, changing these numbers have a big effect on FPS. Note: Darker trees are part of buildings.

I don't like those little buildings popping up right in front of my nose, so I increased the closest range to 80 and decreased the farthest range to 5000.

```
trees = {1000, 9000};
```

The first number is the closest range you will see trees popup (parts of forests). Lowering the first number gave me some flickering trees and little to no FPS increase. Same counts for the second number, decreasing the farthest range did not increase FPS much and will rather be like a preference than a good FPS tweak.

I changed it to 3000, 7000.

```
dynamic = {300, 20000};
```

Dynamic can be subscribed as "building activity". This includes building cranes, harbor activity and smoking factories.

I saw no reason why this range should be that high, so I changed it to 1000, 5000. Basically the same range as buildings.

```
objects = {5000, 80000};
```

All military activity fall under this option. For this reason the ranges are that far. Too far in my opinion, will you ever be able to see a helicopter or tank at 80km distance?

I changed this option to 5000, 20000.

```
mirage = {3000, 20000};
```

All civilian activity fall under this option. Cars, boats, trains and such.

I noticed trains before I even saw buildings. Pretty pointless I would say. Changed this option to 1000, 5000.

```
surface = {20000, 80000};
```

I still do not exactly know what this option does. Probably certain surface details. Some fences around airbases were affected by this option. Changing the numbers don't really have an effect on FPS as well.

I changed these numbers to 5000, 15000.

```
lights = {200, 80000};
```

All lights you see in game. Aircraft lights, airfield lights, building lights and so on.

I changed these options to 100, 10000.

```
lodMult = 1.5;
```

These are the "level of detail" of objects. The most obvious ones are building roofs, but also the high detail range of military objects. For the more powerful systems I recommend increasing this number, however for most of us the standard setting is the best.

I have set this option to 4 with a drop of 3FPS. Those lame roof popups are now farther away.

```
lodAdd = 0;
```

This is what happened when I changed lodAdd to 500. The same happens if you put lodMult to 0 by the way. Quite funny I, but no FPS increase for me. For older systems, selecting the low settings (100) might do some good.



```
ShadowLevel = 1;
LightsLevel = 1;
MirrorsLevel = 0;
TextureLevel = 2;
WaterQuality = 1;
FogQuality = 1;
```

All these options in graphics.cfg are obsolete and "leftovers" from Lock On.
Settings are altered to Ka-50/BlackShark/data/scripts/options.lua (open with notepad)
Lets finish the graphics.cfg first before switching to options.lua

```
LandLodDistances
{
    LandDay
    {
        L01 = 20000;
        L12 = 40000;
    }
    LandNight
    {
        L01 = 16000;
        L12 = 30000;
```

```
    }
    MFD
    {
        L01 = 15000;
        L12 = 25000;
```

"L01" distance of roads and rivers.

I did not see any big changes of FPS by lowering this option. However, this value should stay below the L12 setting, so I have put it at 15000.

"L12" is the level of terrain detail at the far end.

This is the option where you can get some FPS "for free". I have changed the L12 distances shown above to 20000.

```
}
LandTextureLighting = 1;
LandSunFactor = 0.7;
```

Obsolete options.

Changing these values do not take any effect if I compare with Lock On. Eighter way, seen Lock On, not a very important option.

```

OldLandNoise
{
    perSquare = 5;
    perSquare2 = 150;
    front = 1000;
    back = 10000;
    top = 2500;
    map_high = 20000;
    bottom = 2000;
    noisemax = 0.5;
    noisemin = 0.1;

```

These values affect the extend of terrain detail.

Lowering these numbers may increase FPS somewhat, but seen that we fly low most of the time it is best to keep these values as they are.

```

}
ScreenshotQuality = 90;
Quality of screenshots in percentage.
Why not change this to 100%? ;-)
ScreenshotName = "ScreenShots/ScreenShot_%03d.jpg";
You could alter the name of the screenshots you take. As example: ScreenShots/Blackshark_%03d.jpg
Resulting in "Blackshark_001.jpg", "Blackshark_002.jpg" and so on.
ScreenshotExt = ".jpg";
Changing to "bmp" increases the quality of your screenshots, though files will be much larger and you will
have a greater chance of freezes while taking screenshots.
EffectOptions = 0;
Obsolete option
Exhaust = 0;
Obsolete option
ShadowDensity = 0.6;
Changing to 0.4 gives somewhat less darker shadows. A bit more real in my opinion. No FPS increase noticed.
PilotName = "No";
FogParam1 = 6;
Could be subscribed as: Intensity of "see through".
FogParam2 = 1.1;
Could be subscribed as: Extend of Fading in.
FogParam1 and 2 affect the see through of buildings. They are in relation with each other, though not exactly
in a clear explainable way. They both kind of do the same thing, so I would advice to only change the second
number between 1.1 and 0. Putting them at 0 increases FPS.
I have set this option to 0. Why would I want to see no buildings when they are rendered anyway?
CivilianRoutes = "";
AviFolder = "Movies/";
PilotNames = 0;
MaxFPS = 0;
It would be good to put MaxFPS at your average FPS in game. This to prevent your PC running on its
maximum at all time. Note: Keep this option at 0 (unlimited) during FPS tweaking.
I have set 45 FPS as the maximum which is more than enough for smooth gaming.

```



```
AdvancedEffect = 0;  
TreesQuality = 3;  
TreeDistance = 870;  
RenderEffect = 0;  
ObjectTextureQuality = 1;  
LandScapeTextureQuality = 1;
```

I found that all these last options in the graphics.cfg are not effecting anything. I will put them under "ED's Mysteries".

options.lua (can be found in: Ka-50/Blackshark/data/scripts)

```
["mirrors"] = false,  
["reflections"] = false,
```

Recommendation for everyone, keep these off. Mirrors mainly but also reflections bring the best computers on their knees.

```
["labels"] = false,
```

Also recommended to keep these off. It is unreal and also a FPS killer.

```
["color"] = "32",
```

Some say that putting color to 16bits increases FPS. This may be true for very old systems, but these systems wouldn't even be able to run Blackshark. Keep it on 32 as 16 will show color steps in the sky.

```
["heatBlr"] = 0,
```

If you have a powerful system, you could put heat blur on as an eye candy. The Ka-50 though, is already a frame killer, imagine taking off with 5 buddies in view with heat blur on. Put heat blur off and forget about it.

```
["scenes"] = "medium",
```

Only older systems should run BS with scenes at medium. More on this later.

```
["water"] = 2,
```

Different from Lock On, in the game options, you can only choose between Medium and High. Let me tell you this though, Medium is actually High and High is actually Very High! I have no clue why Normal and Low are not available in the options any longer, because water on high/very high is a HUGE frame killer! Remember that water also gets rendered when you can't see it, below the surface of the earth. If this wasn't the case, man, we would not have frame issues any longer but ok, that is the game engine we have to deal with.

Ok, to the point, if you have an older system, you could put water on Low. For everyone else I strongly recommend to keep water on Normal (1). Normal is the best balance between eye candy and FPS hit.

0 = Low

1 = Normal

2 = High

3 = Very High

```
["fullScreen"] = false,
```

Everyone wants bigger screens, so no point of running BS windowed. There are even reports that BS windowed runs worse as in full screen mode. Anyway, put "fullscreen" at true.

```
["visibRange"] = "High",
```

We tweaked High, and so, select High here.

["textures"] = 1,

Old systems may benefit selecting Low.

0 = Low

1 = Medium

2 = High

I found no FPS hit by putting textures at High.

Low:



High:



["shadows"] = 2,

Shadows are also famous FPS killers. The OFF option is hidden in the game options. For older systems it would be best to put shadows off. For any other system I would strongly recommend to put shadows at Active Planar (1). Cities are the biggest FPS killers and brings every system on its knees, imagine giving all those buildings shadows.

0 = Off

1 = Active Planar (aircraft ground shadow)

2 = All Planar (aircraft ground shadow + building shadow)

3 = Full (aircraft ground shadow + building shadow + "self" shadow on aircraft)

["effects"] = 3,

I found no difference between the Low and Medium settings. If you have problems with explosion stuttering, or low FPS when looking at or being in dust clouds, Medium or Low would be a good choice.

0 = None (Basic flares + No dust clouds from explosions + No condense trails and smoke from smoke pods on jets)

1 = Low (Normal flares & explosions)

2 = Medium (Normal flares & explosions + questionable)

3 = High (Normal flares & explosions + Dust clouds)

I have selected High because those dust clouds are very realistic and I have no stutters at explosions.

["lights"] = 2,

I found no difference between None and Weapons (same as with Lock On). Between Weapons and All is a huge difference though. "All" make your lights (search light, anti collision light) visible on the ground and objects. These lights have a big influence on FPS and should only be at "All" when flying night missions.

0 = None

1 = Weapons

2 = All

["haze"] = 1

See next page.

["terrPrld"] = "20",

The preloading of terrain in to your ram.

I raced over the map in F11 view and did not find any difference *at all* between 20km, 50km and 100km.

I have set it to 50km for whatever reason.

["civTraffic"] = 0,

Civilian traffic on (1) and off (0). Civilian traffic does have an impact on FPS but only slightly if you tweak the visibility range.

I put it at 1, with Lock On civilian traffic may not be that important, but for Black Shark it is a must have in my opinion.

["haze"] = 1,

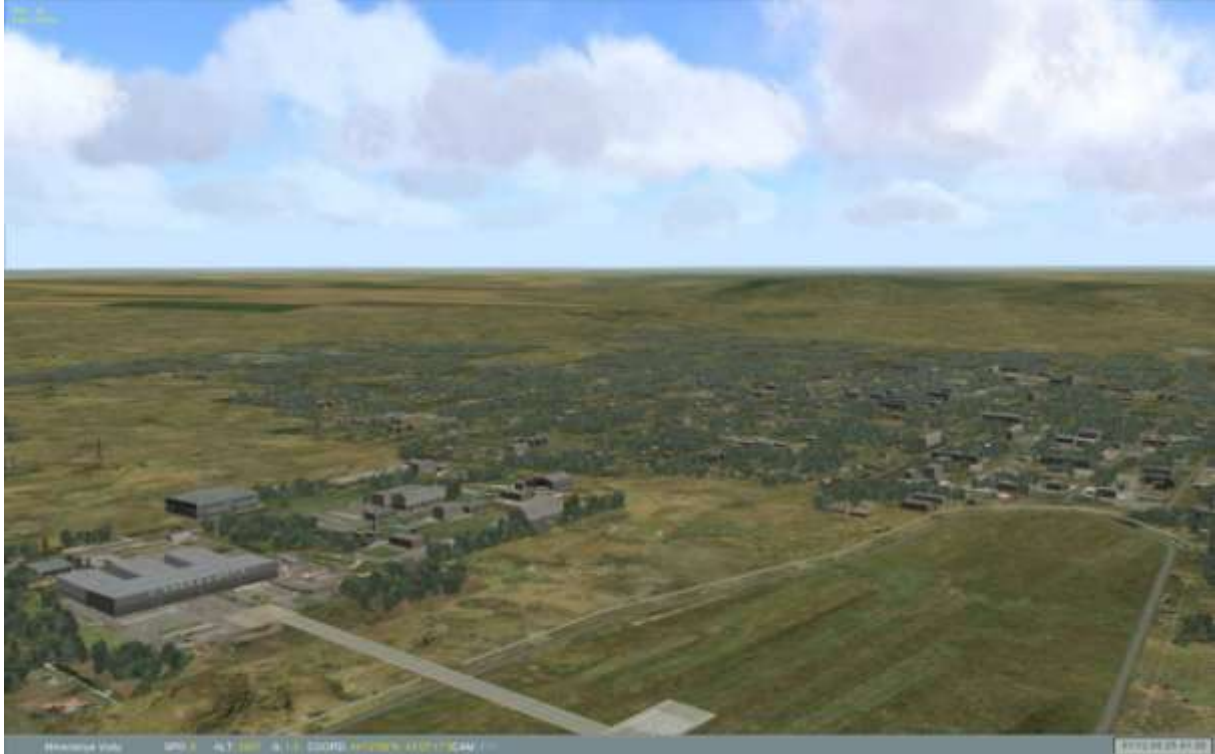
Haze has a big impact on FPS though once you turn Haze off, you still have the "tree haze" giving a weird effect. I tried to solve this issue though without any result yet.

0 = Off

1 = On

I kept it at 1. If someone finds a solution to the tree haze, this would be a great option to gain FPS.

Off:



On:

