This document is demonstrating the 3d modeling work of mine for the last 5-6 years. Every time I played a good PC Game, I was wondering wohah, how did they make it I want to learn!. OFP gave me that opportunity so I begun as a newbie in the 3d modeling world with no one to teach me (except the internet and determination). After O2 release I start playing with my 1<sup>st</sup> 3d modeling "toy", my 1<sup>st</sup> attempts were mainly reconstructions based on BIS OFP models like the M113, M60 and soldiers (at least as efforts), the years passed and ArmA came out and now ArmA II, all these years I have been sharpening and perfecting my 3d modeling skills, learn to use more complex software, learn how to make UVWs for my models and still improving every day.

This document represents most of my work, and since as I previously described I learnt 3d modeling from OFP, all of my work is around OFP/ArmA game (which means military models). I'm categorizing my models based on the skill I think I had during that time. 1st Generation models aren't worth to mention, 2<sup>nd</sup> generation models are accurate replicas, with correct UVs but need a bit more tweaking in order to reach perfection, 3<sup>rd</sup> Generation models are from my latest work, at my eyes they represent the modeling skill I currently have.

The next table represents the models I have created so far ALL with the intention to bring them into ArmA. For Models that have been ported I'm presenting O2 numbers for (vertexes and faces). The model photos in the next pages are at the order that are presenting in the table. Screenshots have been made in 3ds max with Advanced Lighting (Light Tracer), no exposure Control, Simple Skylight and basic materials. Models can be given at BIS upon request for examination either in Max file or P3D MLOD

Model	Verts	Faces	Note
M113A1	12.960	20.205	This model is a
			heavily modified
			version of BIS OFP
			m113 model.
Fn-Fal	3.033 (O2 count)	3.259 (O2 count)	2 <sup>nd</sup> Generation
Fn-Fal Para	4.165 (O2 count)	4.500 (O2 count)	2 <sup>nd</sup> Generation
Fn-Fal Marksman	5.490 (O2 count)	6.078 (O2 count)	2 <sup>nd</sup> Generation
H&K G3A3	3.763 (O2 count)	4.267 (O2 count)	2 <sup>nd</sup> Generation
H&K G3A4	3.859 (O2 count)	4.313 (O2 count)	2 <sup>nd</sup> Generation
H&K G3A4	4.219 (O2 count)	4.695 (O2 count)	2 <sup>nd</sup> Generation
Marksman			
K&K 21	5.764 (O2 count)	6.447 (O2 count)	2 <sup>nd</sup> Generation
M60	5.570 (O2 count)	6.106 (O2 count)	2 <sup>nd</sup> Generation
M60E	4.042 (O2 count)	4.158 (O2 count)	2 <sup>nd</sup> Generation
M60D	3.627 (O2 count)	3.686 (O2 count)	2 <sup>nd</sup> Generation
UH-1H	25.971 (Max	45.052 (Max Count	2 <sup>nd</sup> Generation
	Count)	-Tris)	
Gd240 + MG3	12.317 (O2 count)	13.517 (O2 count)	2 <sup>nd</sup> Generation
Ah64A	47.087 (Max	41.304 (Max Count	3 <sup>rd</sup> Generation

	Count)	–Polys)	
Leopard 1A4	22.065 (Max	28.061 (Max Count	3 <sup>rd</sup> Generation
	Count)	–Polys)	
Leopard 1A5	24.199 (Max	29.707 (Max Count	3 <sup>rd</sup> Generation
	Count)	–Polys)	
Leopard 1A1A3	21.217 (Max	25.250 (Max Count	3 <sup>rd</sup> Generation
(1V)	Count)	–Polys)	
M60A3	23.546 (Max	23.931 (Max Count	3 <sup>rd</sup> Generation
	Count)	–Polys)	
M48A5	25.400 (Max	24.688 (Max Count	3 <sup>rd</sup> Generation
	Count)	–Polys)	
Milan Anti-Tank	4.748 (Max Count)	4.399 (Max Count	3 <sup>rd</sup> Generation
		–Polys)	

**General Notice:** All models source files (Max file, MLOD) haven't released to the public except me and the Texture Artist of HWM team (Aplion) .3<sup>rd</sup> Generation Models (except AH64) haven't been released to the public and the source (Max files) haven't distributed to anyone.

Except from modeling I was fascinating by BIS game engines (OFP/ArmA), so I have worked with almost every aspect of them.

Animations/Proxies, Work with proxies for static crew positions for vehicles, and death animation (not fast switch but smooth death transition) for the Gd240 driver as experimental. Note that I don't have much experience with animation basic in 3ds max, and all that I can work with in O2. A video demonstrating GD240 driver death can be found in youtube HWM channel

http://www.youtube.com/watch?v=hZLmaklO2kM&feature=channel\_page

**Island Making,** The 1<sup>st</sup> thing I've learned from OFP and sadly I used it only in OFP, I've worked with Wrpedit, Wrptool, and a bit with Visitor, a demo island I've made was Xios, which never got released, and stays somewhere in my HDD. As a side effect I've learned to work with GIS software like Microdem (basic knowledge).

**Scripting,** since in my University life I'm more like a programmer scripting is quite a joy for me, although my 3d modeling duties didn't let me to explore in depth scripting, I consider that I have a good knowledge on ArmA scripting. I've made scripts like the Mg3 deployable version, and Cargo system for Uh-1h which unfortunately in its 1<sup>st</sup> version suffered from bugs which due to time limits, I couldn't solve. You can find a cargo system demonstration video here http://www.youtube.com/watch?v=j7V0gKVaXdo&feature=channel\_page

**Pushing Engine to the edge,** I always like to search for more, Ah-64 was an example of "pushing engine" to its limits, since I've reached the maximum bones limit, and off course at poly count matter. A research of mine about how polycount and elements of

an addon can have impact on ArmA performance can be found in BIS thread <u>http://forums.bistudio.com/showthread.php?t=71575&page=11</u>, here I put only a quick summary.

## The Chopy/Frame Drop Issue

After the frame drop issue, we begun to investigate in order to find the source. We do a variety of tests in order to see different combinations and sum up with the safest results. Scores that will present here are from my PC which is at the low-med PC category to RUN ArmA. The configuration is

Intel PIV Prescott 3.2Ghz, 2GB Ram 400Mhz, ATI X1950Pro Sapphire 512MB Ram AGP. ArmA configuration, all options to max, with terrain detail LOW, postprocess LOW and view distance 1630, Screen Resolution 1280X1024.

With the following PC and ArmA configuration I Have **25-28FPS** in an empty Rahmadi. The test was to have 9 empty AH64A's with players back at them and when the mission starts to turn and face them in a way that all of them can be on screen from close distance

Properties							1.5111	5.1			FPS
Faster Lod	Simplified	50%	2nd LOD as	No	Simplified	Simplified	Simplified	No P3d Selections	No	Empty	
Switching	Shadow	texture size	1 <sup>st</sup> (13836	Materials	Geometry	Fire	View	(Nothing not even	Scripts	Model.cfg	
	(900	reduce	Faces)		(<50 faces)	Geometry	Geometry	the Basic)			
	triangles)					(<50 faces)	(<50 faces)				
×	×	×	×	×	×	×	×	×	×	×	11-12
×	×	×	×	×	×	×	×	×	×	$\checkmark$	11-12
×	×	×	×	×	×	×	×	×	$\checkmark$	×	11-12
$\checkmark$	$\checkmark$	×	×	×	×	×	×	x	×	×	14-15
$\checkmark$	$\checkmark$		×	×	×	×	×	×	×	×	14-15
$\checkmark$	$\checkmark$		$\checkmark$	×	×	×	×	×	×	×	15-16
$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	×	×	×	x	×	×	16-17
$\checkmark$	$\checkmark$			$\checkmark$		$\checkmark$	$\checkmark$	×	×	×	16-17
$\checkmark$	$\checkmark$		V	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		×	×	22-23
×	×	×	×	×	×	×	×		×	×	15-16
×	$\checkmark$	×	×	×	×	×	×		×	×	17-18
×	$\checkmark$	×	$\checkmark$	×	×	×	×		×	×	20-21

As you can see the number of materials and Texture sizes doesn't have great effect on the FPS Drop issue but the Major Factor for the FPS Drop is primarily the Huge Number of selections and secondly the shadow polycount and the model polycount. Indeed if you consider that there are around 78 selections only for hydra missile proxies, plus 78 for the flashes, plus 16 for hellfires the number is raising quite high.

The better results for a low-end version could be a version that uses the 2nd LOD as 1st, and with no missile proxy disapearing or flashes (at list the way we do it now).

**Exploring** /**Ideas,** Since I'm not just a modeler but more an addonmaker, I've always wanted my addons to combine a number of ideas that can enhance the game experience. Samples of that are the destruction system, camo net, smoke chargers and many more which I didn't manage to bring them to life (NOTE, scripts that are presented here haven't been implemented by me, I was just had the ideas in my team).

Full material for the released HWM addons you can find in <u>http://ofp.gamepark.cz/ hosted/mmstudios</u> (HWM Website).

Video Collection Form HWM in youtube channel <a href="http://www.youtube.com/user/HWMSparky">http://www.youtube.com/user/HWMSparky</a>





















































































![](_page_42_Picture_0.jpeg)

![](_page_43_Picture_0.jpeg)

![](_page_44_Picture_0.jpeg)

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