



FPC Modding Guide 3: Artwork and Sound Effects

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1 Introduction

Welcome to the **FLASHPOINT CAMPAIGNS** Modding Guide Volume 3 or FCMG3 for short. This tome is the gateway to modding or creating art and sound effects for all things Flashpoint. The OTS Design Team determined from the onset of this new game engine, that we wanted the game data, support graphics, and sounds to be accessible to the players. We wish to foster the generation of a large library of 3rd party (User) content for the series.

In order to do this without it turning into a mess, as seen in other games in recent years, everyone really needs to read through section 2 "The Rules of Play" that follows.

1.1 What will this Guide Teach You?

Volume 3 is focused on modding the art and sound files found in the game. This guide will run you through each type of art and sound element, what it does, where it is found and how to edit or create new versions. You will need access to both paint and sound editing software to do any kind of new or edited art or sounds. We can't give you everything.

Anything we miss or any questions you have can be directed to the forms on the Matrix Game Website. We will from time to time update this document with new information or corrections if things change. Enjoy!

2 The Rules of Play

It's kind of sad even having to point some of these "rules" out, but I think it will help everyone get along and work with each other to make this game really shine with tons of user created goodies. Away we go...

2.1 The Obligatory Disclaimer

Okay, tangent/disclaimer time. There is little to no value validation for these data files right now. It is something we want to add down the road to help you modders out. So understand, if you delve into the numbers, you run the risk of breaking things if bad values or characters find their way into the files. The same can be said for using incorrect or incompatible formats for art images and sounds.

We at OTS take no responsibility for loss or damage of material items, virtual 1s and 0s, wives and girlfriends, or sanity when modifying game content and/or using third party tools. End tangent/disclaimer.

2.2 Open Source Content

The game engine runs and can simulate a wide range of modern combat actions based on the data we have provided. In the FPRS folders you will find several places where both images and sound files reside. These various art and sound files were generated by third party software and they are required in order for certain images and sounds to work in game. It is the structure and format of these files that allow the game engine to use the images and sounds both included and created by you and other third party creators. You are free to use them or modify them as you see fit. Just be sure to back up the originals.

2.3 Free Use

We are giving you the right to freely utilize the OTS art and sound files to create new images and sounds with third party paint programs and sound file editors, and edit/alter these files in order to create new or derived images and sound files. Again, you modify them at your own risk.

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This “free” use comes with the express understanding that any created or derived works for this game and game engine will be provided to the public to freely use as well. This means if you put something you made out there for the game, other people can, and in many cases will, take that work and build upon it. Like us at OTS, you will have to be okay with that happening. That’s the land of Free Use.

2.4 Derived versus Created Content

There are two types of user generated content. Derived works are those based on other original work. Adding or editing the data files or making a variant of an existing scenario are examples of derived content. Created works are those items made from scratch. For example, this would be new counter icons, a new tank gun sound file, or a new data file. Even though these are created items, they are derived, in fact, from the content specifications for the game engine.

2.5 Being Adult and Recognizing Original Content Designers

This is one of those sad to have to point out rules I mentioned above. A handful of games out there over the past decade have had major blow ups over this topic. If you take the data files from the Captain’s DataPak and make changes for whatever reason and then call them the Major’s Data Bonanza, I and the Captain should be (or more to the point need to be) fine with that as long as your ReadMe text file states you made changes to the Captain’s DataPak content. That’s it. Just a common courtesy to say this is a derived work. This will be an area especially watched along with Scenarios, and Map Data. Everyone is entitled by the Free Use and Open Data points above to edit other works. Just be adult and please note where the works originated.

2.6 Share and Play Well with Others

This is the second of the “should be obvious” rules. The goal in having this much modding capability is to build a friendly and thriving community of players looking to add to the game and to other player’s enjoyment of it. To that end, I would ask that everyone work to help your fellow modders by sharing ideas, comments, tips, tricks, web links and even content. The more everyone works together, the better everything will be for the user generated content and ultimately the game itself.

2.7 Play Nice or We Throw the Kill Switch

In the very unlikely case that people can’t play nice and/or abuse the Open Source system, OTS reserves the right to shut down the game engines ability to use certain user generated content. In particular, data, maps and scenarios/campaigns can all be switched to an OTS only mode of use.

We (OTS) would prefer for this not to happen, but it is necessary to make this statement. The ability to edit a vast majority of the various inputs to the game was the center of a number of lengthy discussions on if we should do it and to what extent. How the community does in the months after release will also tell us if we can expose even more internal magic numbers to everyone to add in even more customization of the game engine itself.

So please be civil and helpful to other modders and we will all enjoy this game system from many years to come.

Now onward to the show!

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3 Getting Started

FLASHPOINT CAMPAIGNS is both a game of grand tactical warfare as it is a construction kit with sweeping capability to make almost any modern combat situation (Post WW2) you want. Before you dive head long into a project you should take some time to get your ducks (or other regionally specific animals) in a row. This chapter of the guide breaks down a few of the key decisions and works on getting you ready to work on the mod you want to make.

3.1 Deciding What You Want to Make

It may sound like a silly question, but sometimes you may not really know what you want to mod or how far or deep you want to go. Starting small and simple in many cases is a good idea. If you really want to change many things you should really take a minute and map out all of the things you need to do the job. Another factor involved is the end user. Is this something for you only or are you going to make this for the public to use too. In some cases it helps to be familiar with the process or tools. If you are great at digital artwork and have image editing tools, maybe changing some of the game art is a better place to start than making a new database. Either way you go you really need to have a desire to do it and in some cases support after it is released.

3.2 New or Derived Content

Where do you want to start? It is no doubt easier in almost every area of the game to derive/edit existing content than to start from scratch. If you are new to modding, I would strongly suggest starting a derived type project first. Having data or a format in front of you helps reduce the chance of making a mistake. Once you are comfortable with all of the ins and outs of creating the content you want from existing materials you can switch over to making it from scratch. If you are going to create items from scratch, make sure you are aware and following the rules or guidelines for formats, sizes and ranges. Failure to stay within the set boundaries of an object can lead to game crashes and the headaches of debugging what you have made.

3.3 Gathering Source Information

Before you launch into a project, take the time to gather up and supporting source information that can help you with what you are planning to do. This could range from images to maps to specifications and documents. This will be less of an issue with sounds and some art items, but a down right necessity for scenarios and data work.

3.4 Third Party Tools and Other Assets

Modding a game takes time, effort, and tools. Modding the items found in Volume 3 of the Modding Guide requires having a number of 3rd party software tools. Here is a breakdown of what you need for the specific items.

- Graphics – Painting programs that can create or edit *.bmp and *.png images
- Sounds – *.wav file editing software and/or sound/music creators with *.wav output.

So, if you want to edit items in those areas you will need to have software to do so.

3.5 Working with User Feedback

Once you place content out there for others to use, you will need to deal with both positive and negative feedback and suggestions. The best advice I can give on the subject is to be polite in your responses. If possible, take good suggestions and work them in. At the end of the day, it is your work and your vision and there is nothing wrong with telling someone to use the tools to mod it the way they like. It's what we are doing!

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4 Replacing Art Assets

One of the easier to implement but harder to actually produce (in most cases) is art work for the game. Each piece of art is in a given location with a given set of parameters for format and size and with a certain set of options for looks. The trick is making something that either fits with the current game or with the new material you are doing within the given envelope of constraints. Each of the following section will detail those characteristics and provide some ideas of what you can do.

4.1 Unit Silhouettes

The unit silhouettes are the black side view of vehicles and equipment (tanks, APCs, Aircraft, and Field Guns) on a white background and also the black, light gray and white NATO symbols for the various infantry squads seen in the game.



4.1.1 Use

Each image is called out by a specific platform (AFV, Aircraft or Infantry) in the game. The game engine will look for the name first in the Country folder where the data file is located and then it will go into the Common folder. If you want to override the game default in the Common folder without replacing it, you can place silhouette files in the countries folder. If the image reflects a piece of equipment used by many countries it will have to be copied to all of those folders to show up.

The background color is rendered transparent in the game engine when it is used on a counter or used in the Subunit Inspector based on the color of the upper-left pixel in the image. Any pixel in the image that is that exact same RGB (Red/Green/Blue) value will be turned clear. You also get a bit of a halo around the remaining image where the background color meets the graphic. Choose a color for the transparency you can live with around the image. I would suggest a white or gray color so it matches up well with the game interface.

The image can be color as well as the gray scale we use (black with grays in the edge from the anti-aliasing effect).

Platforms should face/head to the right (appear to be driving or flying left to right) in the image. The game engine will automatically flip the image for player two. This does not apply to infantry units using the NATO images. Any file name starting with an underline (for example: "_Inf.bmp") will not flip.

4.1.2 Location of Assets

All of the Silhouettes are located in /Modules/FPRS/Data/Common folder or if used as an override to Common they will be found in the Country specific data folder.

4.1.3 Size and Format Required

A silhouette must be 128 pixels wide by 64 pixels tall.

It must be saved as a BMP type file.

The file name must match one or more file names in the Units Tab of the data file(s) to be used in the game.

4.2 Unit Badges/Insignias/National Flags

Each force in a scenario can be represented with a Unit Badge of some type. In the game we have supplied three types. First, a stylized national flag, next, a stylized nation insignia, and finally, a number of unit badges or patches from actual units found in the area.



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4.2.1 Use

The badges are an immersion factor for the player. They are meant to provide a link to the country or force the player is fighting for. These badges can really be anything you want. For the Mid-East game, we were going to use stylized head shots of various people to portray the force leader. In Red Storm we went with unit patches or badges, national symbols and flag icons.

As you will see from many of the badges, the use of the PNG format allows for transparency in the image without the use of a target color that is remove later (like the silhouettes). There does appear to be a case with the image container in the game engine that will take some colors and make them transparent based on the pixel in the lower left corner of the image. If this cause a problem with you image I would suggest erasing the 4 corner pixels or doing a one pixel transparent border around the image. In our case most of the badges have some 3d effect and shadows to give then a "pop" on the screen. You can make your any way you want.

Each badge/flag/insignia is located in a specific country folder. If you want it to be available for selection in scenario construction or in-game avatar selection (same dialog is used for selection) it must be in every country folder you want it to appear for.

If you image is smaller or larger than the 100 x 100 pixel size, the game engine will scale it to fit the window.

4.2.2 Location of Assets

All of the Badges are located in /Modules/FPRS/Data/<Country Name> folder.

4.2.3 Size and Format Required

A badge must be 100 pixels wide by 100 pixels tall.

It must be saved as a PNG type file.

The file name can be any name you wish to identify the badge. The shorter the name the better for display in the Avatar Selection dialog.

4.3 Weather Panels

Flashpoint Campaigns does track the time of day and weather over the battlefield. We show the current conditions with a graphic on the Battle Information Center in a panel. The various combination of time of day and weather are shown on a scenic image of the German countryside.



4.3.1 Use

Currently the game engine uses four general times of day and three types of weather.

The Time of Day is one of the following:

- Dawn – Covering the pre-sunrise and sunrise hours where there is some light from the sun.
- Day – The period where the sun is up and providing full illumination of the ground.
- Dusk – This is the time of sunset and just after as the light of the day fades.
- Night – Covers the hours where there is no sunlight and the only light is from the stars and the moon.

The Type of Weather is one of the following:

- Clear – The sky is clear to partly cloudy.
- Mist – Vision limiting mist/fog/haze that occurs either at night or in the morning hours.

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- Rain – This covers everything from light rain to storms.

In the future, more types of weather will be included in the engine and we will expand the number of types to show this.

If your image is smaller or larger than the 192 x 85 pixel size, the game engine will scale it to fit the window.

4.3.2 Location of Assets

All of the Badges are located in /Modules/FPRS/Assets/Weather folder.

4.3.3 Size and Format Required

A badge must be 192 pixels wide by 85 pixels tall.

It must be saved as a BMP type file.

The file name must match the one in the folder exactly to be used by the game engine. This is in the format of "Weather <Time of Day> <Type of Weather>.bmp".

4.4 Map Markers

These are the various markers seen on the map other than counters. They show everything from losses to craters to victory locations. Each one of these items can be modified with a new image.

4.4.1 Use

Most of the map markers are placed when designing the scenario. This includes the following:

- Bridge (Ok and Blown) Markers
- Chem and Radiation Markers
- Exit Hex Markers.
- Improved Positions (IP) Markers
- Minefield Markers
- Obstacle Markers
- Pre-Planned Fire (PPF) Markers
- Victory Point Location (VP) Markers

Some of the markers are placed by the game engine during orders resolution. This includes the following:

- Kill Markers
- Chem and Radiation Markers
- Crater Markers



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- Gas and Smoke Markers

The only non-map marker in the folder is the Dead.png. This graphic is used to show subunits which have fallen out do to damage or destruction in the game in various information panels in the game.

The Gas and Smoke marker images have a full image transparency so the map underneath will show through somewhat giving the effect of real smoke.

VP markers will have the cost of the hex placed in the center of the box seen on our graphic. This cannot be changed, so any new VP markers should be made knowing this limitation exists.

4.4.2 Location of Assets

All of the Map Markers are located in /Assets/Map Markers folder.

4.4.3 Size and Format Required

The size of the image can vary based on its function in the game. We recommend staying within the size of the marker you wish to replace. If you go beyond 64 pixels tall the marker will bleed over into other hexes. This is used by the various smoke/gas markers.

The images must be saved as a PNG type file. This will preserve any transparency in the image.

The file name must match the one in the folder exactly to be used by the game engine. Craters have been given a special ability to be randomly used when needed by the game engine. As long as you name your images "CraterX.png" where X is a sequence of numbers from 1 to some number (in our case 5), the game will select one at random when artillery or airstrikes it a hex.

4.5 Dialog Images

Dialog boxes pop up at certain times in the game to alert the player to certain information or events. The images add a bit of color to the dialog.

4.5.1 Use

In the game right now there is the red color based Soviet dialogs and a blue NATO based dialogs for these two images. With these items located in a country folder, it is possible to make ones unique to each nation.

It would be a good idea to still include some form of text stating what is going on like the "NATO Air Strike!" or "Radio Traffic". This helps the player quickly identify the reason of the dialog faster than reading the dialog form header in many cases.

If you image is smaller or larger than the stated size below, the game engine will scale it to fit the window. This could cause a loss of resolution or odd edge effects.

4.5.2 Location of Assets

All of the Badges are located in /Modules/FPRS/Data/<Country Name> folder.

4.5.3 Size and Format Required

The Airstrike dialog art must be 200 pixels wide by 256 pixels tall.

The Radio Traffic dialog art must be 126 pixels wide by 177 pixels tall

It must be saved as a BMP type file.



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The file name must match the one in the folder exactly to be used by the game engine. This is "AirStrikeController.bmp" or "msg.bmp" in this case.

4.6 Map Art Assets

How maps are made is covered in Section 3 of the Guide. The specific art files we use are packaged separately and support the third party HexDraw application we use to make maps. You can copy and modify these elements or make new elements to add to your maps. To work well with the HexDraw program the sizes of the texture and overlay elements should match what we are using or you may experience odd offsets or positioning of you elements. The only season we have in the game is a spring/summer look. You could make other seasons of course.

4.6.1 Use

The Elevations show the different elevation level in use in the game by darkening shades of green. Of course you could select other colors like gray or brown. The idea is to enough darkness change for each level that it is easy to see on a map and to be simple enough not to be confusing as the ground terrain. At this time the game supports only 5 elevation levels, but will be expanding to 10 in the near future.



Overlay elements are those pieces of significant terrain that impact the battlefield. In Red Storm they are the fields, forests, and Rural and Urban areas on the map. We have many variations of these elements in order to have a better more real look on the map. We would recommend have several of each type of varying shapes and sizes to give the map a more natural look.



4.6.2 Location of Assets

Textures are located in <HexDraw Folder>/Textures folder.

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Overlay Elements are located in <HexDraw Folder>/Overlays folder

4.6.3 Size and Format Required

Texture art is 320 pixels wide by 320 pixels tall.

Overlay elements vary widely from 900 x 900 pixels down to 65 x 48 pixels. 320 x 320 pixels fills a hex at the scale we used in the HexDraw program. Look at the fields to get an idea of shaping to fill a hex.

It must be saved as a PNG type file.

File name can be anything you want. We do recommend using something that reflects the item(s) to make in editor selection easy.

4.7 Counter Background Art



4.7.1 Use

A new feature we added in the 2.03 update was the ability to use a bit map for the counter background in place of the solid color used at launch. This allows you to go in and make your own backgrounds for a nation's units. We added in our versions with a more pronounced 3d edge and a bit of a gradient color change across the counter. If you decide to make your own you need to be aware of the following:

- The existing location of the text and symbols as well as the silhouette cannot be moved.
- The existing black and white text is hard coded and cannot change. The larger white text does have a black outline to help stand out, but the smaller black unit designation text is too small for a white outline. If you choose colors that are too dark or use too many colors, you run the risk of washing the text out or making it too hard to read.
- Less is more. A simple single color or a simple stripe is better than a full color image of some kind.
- You can add graphic elements to the background. We did a subtle maple leaf imprint for the Canadian counter background and in another case small unit badges were added to the single color background for US units. Again less is more and you have to keep the counter information visible.

4.7.2 Location of Assets

Counter Backgrounds need to be located in the correct national file. The currently selected default background needs to be stated in the National tab of each data file. If missing the counter will default to the indicated counter color found in the National tab.

4.7.3 Size and Format Required

Counter Background art must be 64 pixels wide by 64 pixels tall and 8bit color.

It must be saved as a BMP type file.

The file name can be anything you want. We do recommend using something that use the nations name or code in order to be easily recognized. To use it in game, the name must be entered into the Nation tab of the data file you are using or to replace the ones used by OTS files, the graphic must use the same name as the existing default background. I would strongly suggest backing the original art file up for a rainy day.

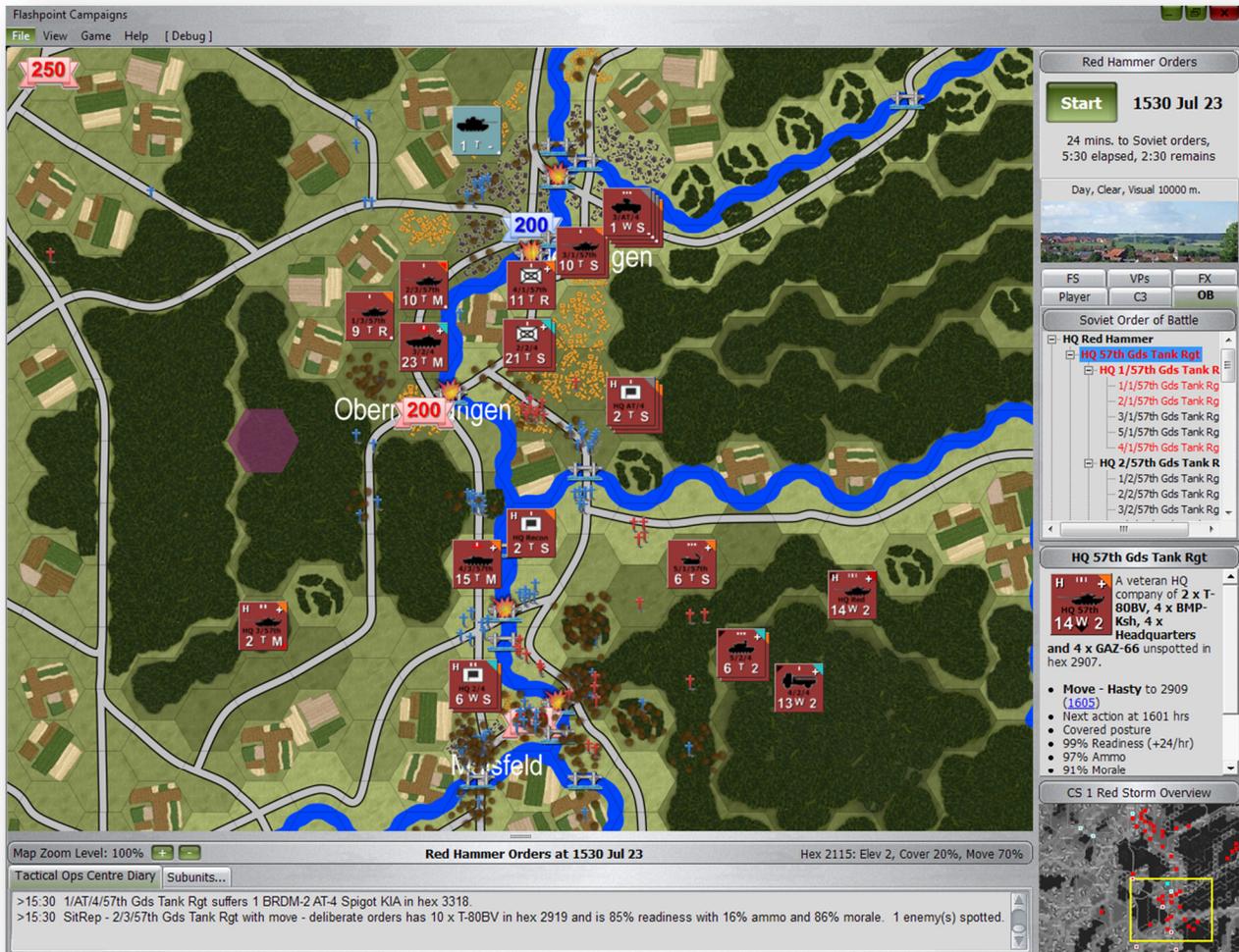
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4.8 Art Restrictions

The above art elements may be modified or replaced freely. What is prohibited from being modified are the OTS, Matrix and other logos in the game. Also the Red Storm Splash Screen must also not be altered or used in any way without permission from On Target Simulations and Matrix Games. If you create a module level mod, you can place your own splash screen in the modules root folder for viewing during modules selection (pending feature).

4.8.1 Animations

The game animations including the opening credits may not be altered in any way nor should they be removed. The game's use of these items is hard coded and unexpected results could arise if files are missing, mislabeled or altered in format.



Various Art Elements in Action

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5 Replacing Sound Assets

Flashpoint Campaigns has a number of music and sound effects built into the game engine to add to the atmosphere of the battle raging on the screen. You can replace these sounds if you follow the format options below and in many cases add more sounds to increase the variety of effects heard in-game. If you decide to replace our sounds I would suggest saving them to another folder so they can be recovered if something fails to work with your sound effects.

With the exception of the two themes, all other sounds are played only during turn resolution when the action is being played out on the screen.

5.1 **Vehicle Sounds**

Every vehicle type used in the game and found in the data files has a sound effect for it that is heard when the unit is moved in game. These sound effects add to the overall atmosphere of the game.

5.1.1 **Use**

The following list is all of the current movement sound types used in the game based on the mobility type of the unit.

- helo.wav, leg.wav, jet1.wav thru jet5.wav, track1.wav and track2.wav, truck.wav, ssm.wav, and prop.wav

These sounds are hard coded based on the mobility type of the unit. To replace them, you must use the same file name and replace the existing sound file. We would recommend backing up the default Vehicle sound files to another folder so they can be recovered in case the new sound file does not work.

Each movement sound is only a few seconds long (1 to 3 seconds) in most cases.

The volume levels are controlled in the game options.

5.1.2 **Location of Assets**

All combat sounds are located in /Assets/Audio folder.

5.1.3 **Format Requirements**

It must be a WAV type file to work with the game engine. No MP3s or OOGs.

The Bit Rate must be 512kbps. Other bit rates may work. If you choose a setting and hear no audio, try another bit rate.

WAV files are also recorded for Stereo output.

The file name must match to the name in the list above. There is no file name link in the data file for movement sounds since they are based on the mobility class of the unit and hard coded to the given sounds.

5.2 **Combat Sounds**

Every weapon type used in the game and found in the data files has a sound effect for it that is heard when the weapon is fired in game. These sound effects add to the overall atmosphere of the game.

5.2.1 **Use**

The following list is all of the current combat sound types used in the game.

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- Weapon Sounds: agl.wav, atgm.wav, auto cannon.wav, blast.wav, bomb.wav, flak gun.wav, flame.wav, gat.wav, HSA.wav, hvy arty.wav, LSA.wav, med arty.wav, missiles.wav, mortar.wav, MSA.wav, rpg.wav, sam.wav, tank gun.wav, HvyArtyStrike1.wav, and LtArtyStrike1.wav.
- General Combat Sounds: airstrike.wav, hit.wav, miss.wav, nuke.wav and AC_Crash.wav sounds.

For each sound type there may be more than one sound file. This is the case for most of the weapons and a few of the general combat sounds. If there are multiple sounds each name will have a numeric value added to the filename. For example, HSA1.wav and HSA2.wav are two of the Heavy Small Arms files used. We have added many different sounds for the same type of weapon in order to have a variety of sound during a battle. You can replace any or all of the sounds we have in the Audio folder. Just remember to back up the originals in case any problems arise.

Each combat sound is only a few seconds long (1 to 3 seconds) in most cases. It is a good idea not to make them longer than they are now. Extending the sounds too much could lead to dropped sound effects or other unwanted behaviors from the audio.

The volume levels are controlled in the game options. Care should be taken to try to match the existing volumes and not have sounds of the same type with widely varying volume levels.

5.2.2 Location of Assets

All combat sounds are located in /Assets/Audio folder.

5.2.3 Format Requirements

It must be a WAV type file to work with the game engine. No MP3s or OOGs.

The Bit Rate must be 512kbps. Other bit rates may work. If you choose a setting and hear no audio, try another bit rate.

WAV files are also recorded for Stereo output.

There are two ways to create/replace the existing combat sounds.

- You can replace the existing file with a new sound with the same exact name. These sounds will play for any scenario used that used the standard sounds.
- The path of more work would be to change the sound filename of a specific weapon in the data files and then add the new sound file to the Audio folder. These sounds will only work when new scenarios are made using the modified data files.

5.3 Theme Music

The game has two pieces of theme music. One gets the blood flowing before the fighting begins and the other sets a more calm and serene atmosphere to review the destruction of the day.

5.3.1 Use

The Main Theme starts when the game is loaded and loops through until a scenario is started.

The End Theme is played during the post-mortem of a scenario.

The volume levels are controlled in the game options.

Both pieces of music last around 3 minutes. You can replace with any length music file you like, but wav files get large quickly (about 10mb-20mb per minute based on the sample rate used).

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5.3.2 Location of Assets

Both themes are located in /Assets/Audio folder.

5.3.3 Format Requirements

It must be a WAV type file to work with the game engine. No MP3s or OOGs.

The Bit Rate must be 1411kbps and us a 16bit format. Other bit rates and bit formats may work, but as we found out after launch certain OS versions and codices may not work together with non-standard bitrates. If you choose a setting and hear no audio or generate a crash in the game engine, try another bit rate and/or bit format.

WAV files are also recorded for Stereo output.

The file name must match the one in the folder exactly to be used by the game engine.

5.4 Background Battle Sounds

The game has three sound files that are used to create the sounds of distant battle as an ambient effect. They are a mix of various weapon and movement sounds.

5.4.1 Use

Each battle background lasts around 1 minute. You can replace with any length file you like, but wav files get large quickly (about 3mb per minute at 512kbps sample rate). To replace them, you must use the same file name and replace the existing sound file. We would recommend backing up the original Background Battle Sounds to another folder so they can be recovered in case the new sound file does not work.

The volume level for the background sounds is controlled in the game options.

5.4.2 Location of Assets

Background Battle sounds are located in /Assets/Audio folder.

5.4.3 Format Requirements

It must be a WAV type file to work with the game engine. No MP3s or OOGs.

The Bit Rate must be 512kbps. Other bit rates may work. If you choose a setting and hear no audio, try another bit rate.

WAV files are also recorded for Stereo output.

The file name must be "Battle_backgroundX.wav" to be used by the game engine (we use Battle_background1.wav thru Battle_background3.wav in game). The game will randomly play one of them at random times during the scenario. The name of the new file must match one of the existing to work.

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6 CREDITS

6.1 On Target Simulations Design Team

Lead Programmer and Head Honcho: Robert “Ironman” Crandall

Data, Programming, Graphics, and Sound: Jim “Cap’n Darwin” Snyder

Maps, Scenarios, and Campaign Designer: Steve “Mad Russian” Overton

Quality Czar and Testing Lead: Charles “Hawkeye” Belva

Facebook Site Design/Maintenance: Rebecca “Beck” Snyder

6.2 Flashpoint Campaigns Modding Guide

Author and Graphics: Jim “Cap’n Darwin” Snyder and Steve “Mad Russian” Overton

Editing and Review: Rebecca “Beck” Snyder

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