

# An Idiot's Guide to Managing Blofeld Samples

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## Introduction

This paper is very much a case of the partially blind leading the vision impaired! I bought the Blofeld Keys synth specifically because I wanted to use some of my own samples in it and such beasts are rare to find these days.

I don't have a great understanding of synthesis - I can struggle by - but I was severely challenged by getting samples into the Blofeld. Having finally managed it, I thought I'd write up this paper to help others.

Unfortunately the Blofeld documentation is poor, at least for people like me, and it seems clear from online forums that people are frustrated with Waldorf for their lack of support in terms of developing more useful software and support. It's unbelievable that having produced a wonderful instrument, they can't be bothered to develop a bit of software - that works consistently - to manage that instrument. There are free apps that are far better at communicating with the Blofeld than their own proprietary software - and if an app is free, it can't be that hard to develop! Rant over.

You may be well ahead of me in terms of knowledge around how such systems work, so forgive me if I use simplistic or erroneous terms - this is written for someone with a similar knowledge base as myself!

## My Setup

I have the Blofeld Keyboard with firmware v1.25 installed. If you have the Blofeld Desktop you'll need to buy and install the Waldorf Licence SL Sample Option software which unlocks the onboard 60MB of RAM - it currently costs 103 Euros.

I use a Mac and for the purposes of managing Blofeld Samples I use the following:

**Logic Pro** - but any DAW will do.

**DSP Quattro** - to trim samples and create loops.

**Spectre** - Waldorf's free app that communicates with the Blofeld

**Softknobs** - a free app that allows manipulation of patches on the Blofeld.

It's also recommended that you use strong coffee or alcohol to aid the process.

## About Oscillators and Why Samples?

The Blofeld is cool as it gives you three options to generate sounds - following which you mess around with these sounds (that's the synthesis bit) in order to create patches.

In a nutshell you have the option of:

**Basic Waveform**

**More Complicated Wavetable**

**Actual Audio Sample**

All these sound sources can be synthesised (messed around with) in a similar way. Using audio samples as sound sources really opens up extra options.

## What's a Patch

Well is it a patch or a program - Waldorf seem to be confused - I'll call it a patch.

It's probably best to think of a patch as a saved 'instrument' on the Blofeld that consists of its referenced sound sources along with any synthesis (manipulation) assigned to those sounds.

In terms of sound sources the Blofeld has up to 3 oscillators per patch, the first two of which can either be a Wavetable, Audio Sample or Waveform, with the last oscillator being just a Waveform.

You can save up to 1024 patches on the Blofeld consisting of 8 banks of 128 patches.

**Warning - if you remove a sample from the Blofeld to create more space for your own samples - you need to make sure it is not being used by a patch that you want to keep!**

## Preparing Samples

You can create your own samples, maybe in your DAW, or buy or download - whatever.

The Blofeld **ONLY** plays **44.1kHz/16bit .wav** audio files.

Whilst it can read stereo files - there's no point because it plays them back as mono files anyway, so it's best to **prepare your samples in mono** (and save your Blofeld memory).

So the Blofeld has 60MB free for samples - that's around 11 minutes of audio - which isn't much.

I found it tricky to get my head around the issue of setting up and saving audio files with **LOOPS** - in fact I don't yet understand exactly how this works. It would seem the loop points are somehow embedded in the audio file. It can be tricky to find suitable loop points (that don't click on loop) and it's always best to create the loop points at a zero crossing point on the waveform.

It sounds like there's more options for loop creation software on the Windows platform. I ended up using **DSP Quattro** (<https://www.dsp-quattro.com>) which I already had and is a neat solution.

So let's assume that you have now prepared your samples and are ready to import them into the Blofeld.

## Create a Working Folder on Your Computer

Some of the problems I had were to do with files being unable to reference samples because they had been moved or were not within the same folder (not sure which - probably the former) and so the best workflow is to setup a working folder on the your computer and do everything in that!

## A First Look At Spectre

The software you use to communicate with the Blofeld is **Spectre** - a free download from Waldorf.

I found it unintuitive, archaic and buggy.

When you open it it looks like this:



The left hand column is labelled '**Programs**'. This is where we will import what would be more accurately called **Sample Sets** (and I'll use that name from now on).

The right-hand column is labelled '**Samples**'. This is where you load **Samples** which are part of each **Sample Set**.

Confused? So was I.

## What's Sample Set?

A sample set is a file which can and often does reference several or many samples.

Why? It's logical, but let me explain. Imagine you want to play back a Steinway piano. In theory you could just sample middle C, load it into Spectre and have the Blofeld change the pitch of the middle C sample for all the other notes. But the more pitch manipulation that occurs the more compromised the note will sound. Basically only the middle C note will be 'true'. This is why something like a professionally sampled piano instrument may have gigabytes of samples attached. Each note would be individually sampled, sometimes with different mic positions and velocity etc.

So if you want to replicate a realistic instrument, you'll need to sample lots of notes, or at least reduce the range of pitch manipulation required for each note.

OK, so that's a first stab at the Sample Set/Sample concept.

Let's carry on looking at the Spectre:

This panel gives you the controls you need to import/save/create new Sample Sets, connect to the Blofeld, Save MIDI files and to Transmit/Upgrade information to the Blofeld.

Let's look at them one at a time:

**Load** - Let's you load a pre-existing **Collection of Sample Sets** into Spectre. These files are either **.wpc** files or **.xml** files.

**Save** - Let's you save your **Collection of Sample Sets** as an **.xml** file - **WARNING this overwrites your original file!**

**Export** - Let's you save your **Collection of Sample Sets** as a new **.xml** file.

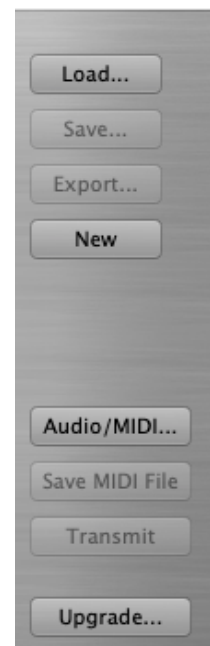
**New** - Creates a new **Sample Set** at the bottom of the Programs column.

**Audio/MIDI** - Let's you connect to the Blofeld.

**Save MIDI File** - Saves the **Collection of Sample Sets** in Spectre and crucially also saves the **Audio Samples** referenced in Spectre as part of the MIDI file.

**Transmit** - In theory transmits all the data in Spectre as well as the audio referenced to the Blofeld - it's dodgy so **ignore this command!**

**Upgrade** - This sends a pre-existing MIDI file to the Blofeld - **this is the command to use!**



So let's look at these in more detail one at a time.

### Load and .wpc and .xml files

The Load function let's you load **.wpc** and **.xml** files into Spectre. You can also drag and drop them too.

**Warning** - It would appear that you can load multiple **.wpc** and **.xml** files into Spectre at the same time - this is not only confusing but, if unchecked and uploaded to the Blofeld, could change all the reference locations that your Blofeld patches need to access samples - causing absolute chaos!

The samples that are supplied with the Blofeld are **.wpc** files. Each **.wpc** file appears to include a Collection of Sample Sets and also has the audio samples embedded into it as well as having suitable information/references required by Spectre and the Blofeld.

The **.xml** files simply summarise the **Collections of Sample Sets** information shown in the **Programs** column and includes references to the audio samples whether they be part of a **.wpc** file or as stand alone samples in a referenced folder. **Because you'll end up using .xml files it is important that the folder in which your audio samples are stored always stays in the same place relative to the saved .xml file.**

I can't see that you can save your work as a **.wpc** file.

## Export - Don't Save

Given the uncertainty around using Spectre I would always recommend exporting your work rather than overwriting an existing **.xml** file. They're tiny files anyway and you can just tuck them away in an archived folder (*though you'd need to drag them back into your **Working Folder** to reference all samples if you want to use them again*).

I use a file name system such as bobsblofeld300821 - that is; no strange symbols or spaces and a date reference.

## New

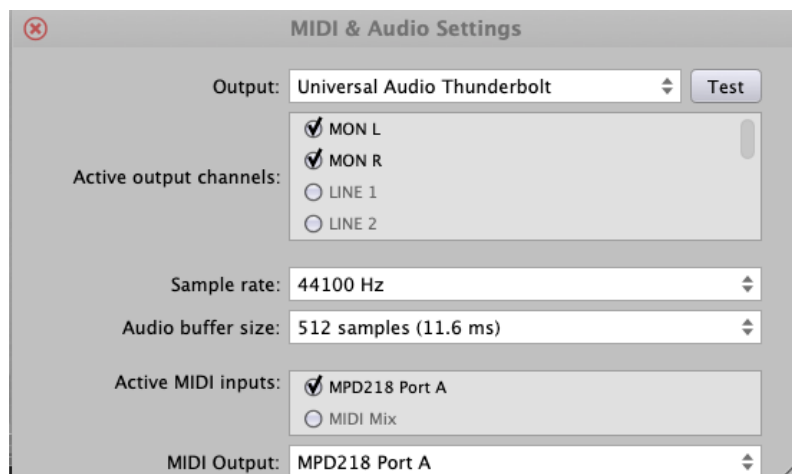
Creates a new **Sample Set** at the bottom of the Program column. I'll talk more about this below.

## Audio/MIDI

This is how you connect to the Blofeld - assuming you have it connected to your computer over USB.

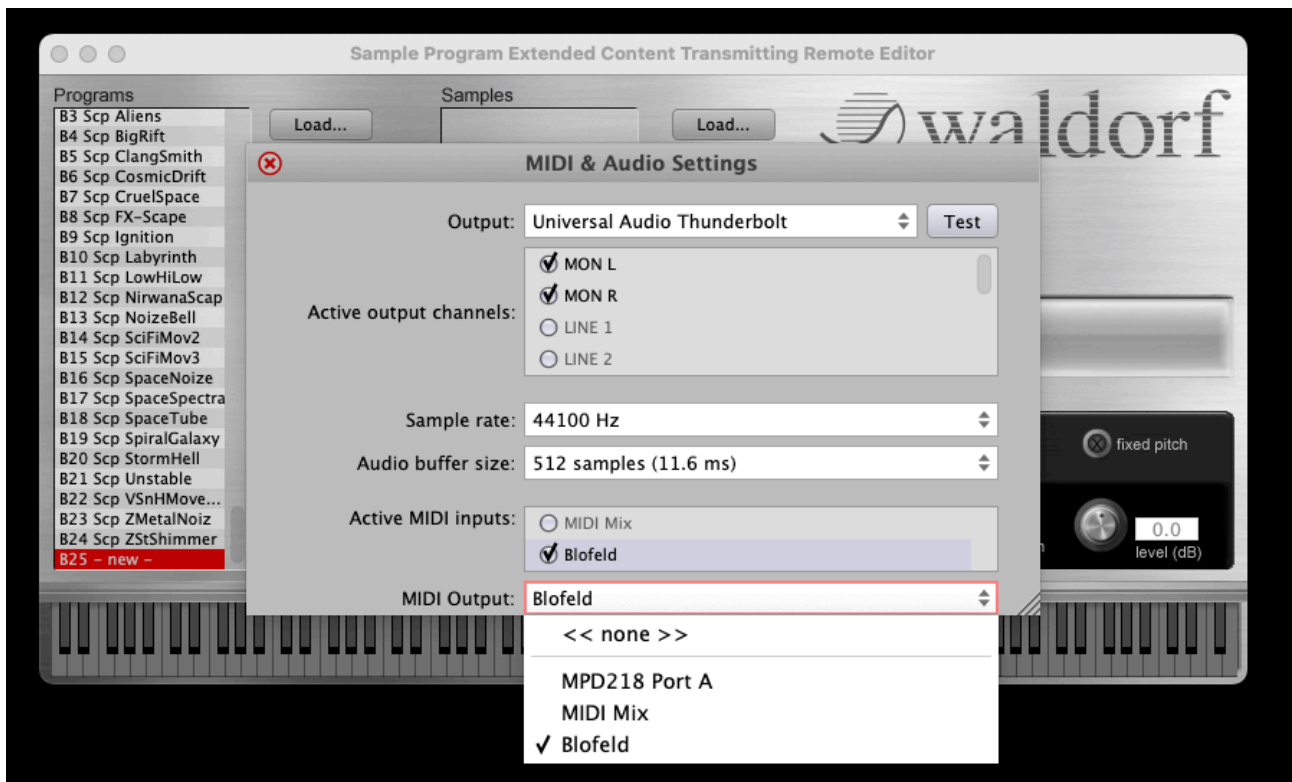
Here's when we get into Waldorf La La land!

You are met with this window:



And wonderfully you have no options to select the Blofeld as your MIDI ports, which is what you need to do!

For me, I have to scroll down the Active MIDI inputs list to select Blofeld and then click on the MIDI Output options box to select it there:



Frustratingly you have to do this each time you open Spectre! Even free patch management software manage to remember this - which is so basic.

Moving on - perhaps now's a good time to make sure your Blofeld can speak with Spectre:

## Settings on Blofeld

Using Shift/Global on the Blofeld make sure the following are set up:

- MIDI Channel - Omni
- Device ID - 0 (00h)
- Local Control - On
- Prg Send - Off
- Ctrl Send - Ctrl+SysEx
- Ctrl Receive - On

## Save MIDI File

Spectre and the Blofeld communicate over MIDI and it seems best practice to Transmit your changes to the Blofeld by first of all saving them as a MIDI file and then transmitting the MIDI File - wait for it - by not using the Transmit command, **but by using the Upgrade command.**

When saving the MIDI file I use a simple filename again - something like: bobsblofeld300821 - no spaces or weird characters. The MIDI file contains all the audio information, so it's large (for a MIDI file) and can take up to 35 minutes to transmit.

## Transmit/Upgrade

As mentioned above don't use the Transmit command. The workflow is:

1. **Save MIDI File**
2. **Select Upgrade**
3. **Select MIDI File to Transfer**
4. **Select 'Play' command on the Blofeld when promoted and transfer is complete.**

**Warning - As soon as you select the MIDI file the upgrade will commence.**

It doesn't always work, in the sense that the Press Play option doesn't always show on the Blofeld and a simple power cycle doesn't seem to be sufficient to enact the changes. But try again and it generally does work.

## The other Load option

There's a 'Load' button to the right-hand side of the Samples column. This loads samples into Spectre, but it's just as easy to drag and drop.

Note that any samples loaded will be referenced against the highlighted **Sample Set**. I'd imagine it would be a very bad idea to try and load a sample into one of the existing Blofeld Sample Sets - let's tag the descriptor 'native' to the original Blofeld Sample Sets from now on.

## Managing Programs - Wrestling with Spectre

Just like James Bond we have difficulties with Spectre.

As I mentioned above I find Spectre to be unintuitive and dodgy at the best of times. Approach with care and take your time.

In this section we will focus on the Programs (Sample Set) column as well as the Samples column.

You'll need to start by opening Spectre - the columns will be blank - and then loading in the existing Blofeld Samples that came with your Blofeld. It'll be a **.wpc** file and you just drag it into the Programs column.

At this point your Spectre page will look something like this:



Let's now take a close look at the Programs column.

Each Sample Set has two components to its name. Its location and its name. Here's an example (the first one shown above):

### A1 Cpl-ArcaneSpere

So what that means is the Sample Set Cpl-ArcaneSpere is referenced to what I'm going to call **sample slot A1**.

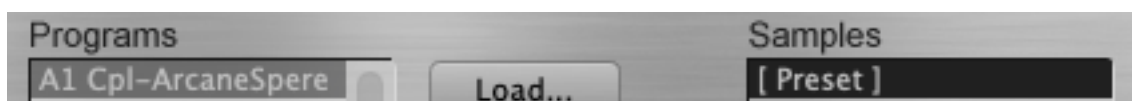
Let's think about this. The Sample Sets are filed in much the same way as patches (though in a different place so you're not overwriting patches). In other words in banks of 128. So the above Sample Set/Program is located in the first location in the A bank.

**This is important** - A patch in the Blofeld will reference the location of the sample - **NOT its name**.

So if you want your existing patches to reference their correct Sample Sets **YOU MUST NOT CHANGE THE LOCATION OF THOSE SAMPLE SETS**.

**You'll be thrilled to learn that not only is this easy to do in Spectre - it's actually hard to avoid!** I'll come back to this shortly.

Anyway if we highlight that first Sample Set we see that the samples associated with it are simply **[ Preset ]** which means you can't mess around with them and they are referenced to the **.wpc** (or .xml) file:



## Creating a New Sample Set

To create a new Sample Set click '**New**'.

What you'll notice is that there's a new highlighted Sample Set created at the bottom of the list, which in my case happens to be in location B1. You can double click onto the 'new' part of the location to name the Sample Set. It's worth noting that some apps which allow managing patches on the Blofeld don't recognise Sample Sets in banks other than in bank A.

Now you can add a sample into this Sample Set by clicking and dragging it into the Samples column - something like this:



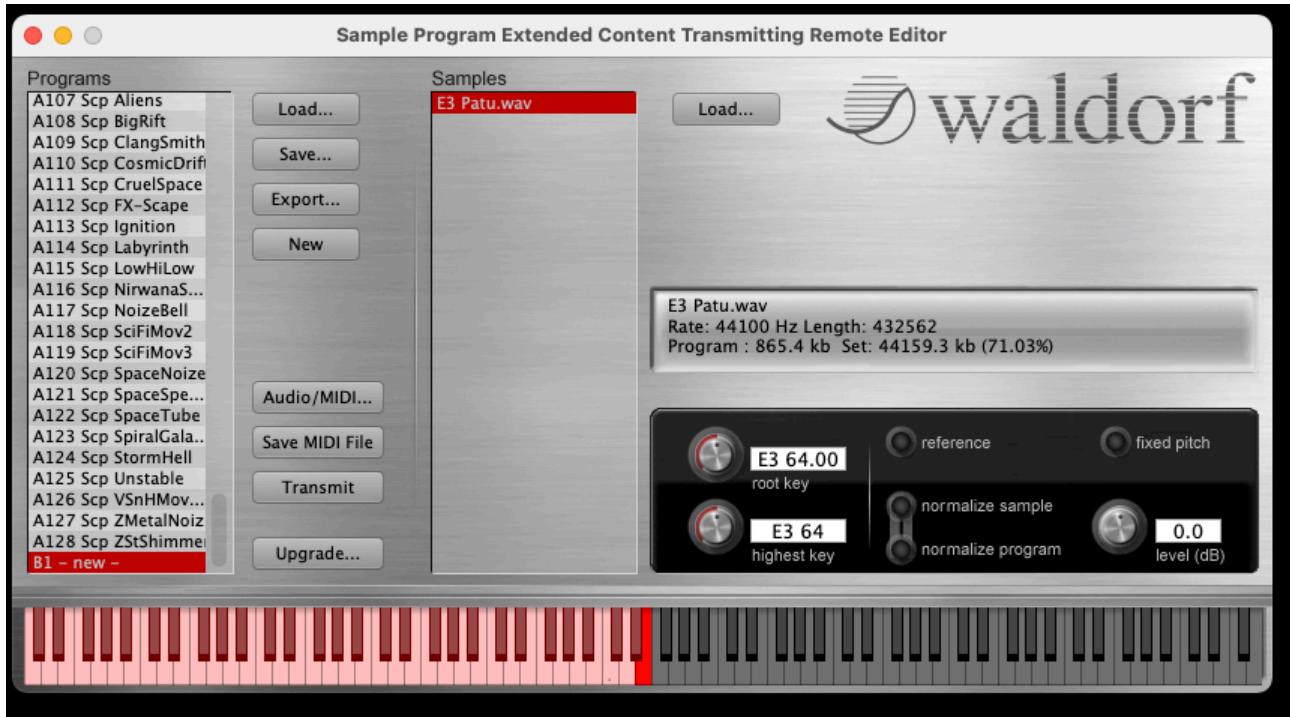
So now you can see the sample **E3 Patu.wav** is part of the **B1 New** Sample Set. Now Spectre is supposed to look at the audio file name and allocate the sample to the note at the beginning of the name (E3 in this case) - it doesn't often work as you can see above!

Next up you need to decide the root note placement and note range of the sample you've just uploaded - this is best done with this control panel:



You first determine the root key (the highlighted red key on the keyboard) which is the top left control and then you decide what the highest note for this sample, the bottom left control. The observant amongst you will have noted there is no lower limit to the note range (which seems odd).

So with the above sample if I correct the root key to E3 and make the highest key the same - it looks like this:



You can see the new root key highlighted and all the notes lower than that in pink - they will all play but the further away from the root key you get the more distorted will be the sound due to pitch manipulation.

By the way you could always select the fixed pitch option and then all the notes would play as per the pitch of the sample file on each key.

## Loading Multiple Samples into a Sample Set

We can now load further samples into our Sample Set.

In the example over the page I have loaded a further two samples into the above sample set.

Spectre has determined that the root key of these samples is C3 - but that happens to be amongst the keys used by the E3 Patu sample. In effect I can only now allocate keys to the new samples to keys above those already used - but they are all higher than the allocated root key, so they will be pitch manipulated accordingly.

The solution is to allocate a new root key to the sample above any previous sample key allocation and then set its highest key. The new sample will then play in the range between the highest key of the previous sample and the highest key of its own (yes, I'm scratching my head at this point too!)

Try and follow this on the next image. The new 'Brook' sample has been allocated a root key of C4 with its highest key determined to be C5. It'll play on the pink keys in the image (F3 to C4)



So as you can imagine this requires some pre-planning and I've found (because you can't set the lowest key of a sample) that it's easier to work from the bottom of the keyboard up!

And a handy hint, I find it easier to type the root/highest keys into the pane rather than set them using the keyboard.

## Deleting Sample Sets to Create More Memory

**Warning - if you delete a Sample Set from the Blofeld to create more space for your own Samples - you need to make sure it is not being used by a patch that you want to keep!**

**Warning - Deleting Sample Sets in Spectre automatically moves every other Sample Set and changes its reference location so the patch that wants to use that Sample Set will use whatever Sample Set is in the old location!**

**Warning - Clicking on a Sample Set to move it on the list often picks up and randomly moves other Sample Sets - always click elsewhere to neutralise after an action!**

**Yes, it's annoying, scary and you will swear a lot!**

You have been warned - proceed with great caution.

Here's what I did to create more space for my own samples. Bear with and have pity.....

I happened to have the Exo-Worlds and Utopia Sound Sets installed, which may have complicated things for me, but there's a few pads and atmospheres in those collections that I wanted to keep.

First up I needed to determine which patches used which samples. There's probably a really neat and quick way of doing this - let me know what it is - but I ended up doing it manually on the Blofeld.

I auditioned all 1024 patches and analysed which oscillators each were using.

Interestingly of all the factory supplied banks A to F, only one patch used one sample set!

The Exo-Planets and Utopia Sound Set patches used more but in the end I determined that I really only needed 20 of the original samples out of 128, which would potentially release heaps of memory for my own samples.

As you may have picked up in the red warning panel Spectre is a dog! It'll change Sample Set locations at the drop of a hat which means your patches can no longer reference them.

I decided that the best safe practice was to move the native Blofeld Sample Sets I needed to the first 20 Sample Set slots, that is A1 to A20, and only work on locations A21 and above due to the way Spectre messes with Sample Set locations. That way any work I did with my own samples would not interfere with the patches I already had and wanted to use.

To do this I had to draw up a table of Sample Sets with old and new locations. The list of native Sample Sets I decided to keep are opposite.

Before I did any work in Spectre I went into each patch I wanted to keep that used a Sample Set and changed its reference location to the new location.

As an example, if a patch used sample Cho-ArtVox, I would change its reference location from A75 to A9 (on the assumption that I'd be able to successfully edit the Sample Set List in Spectre).

This takes time - yes, actually a lot of time.

Having done that, I then went into Spectre and deleted the Sample Sets I didn't want to use. I ended up with a list of 20 Sample Sets only.

I then tidied up their order so that they matched the order on the table.

That's where things get tricky!

Spectre has an annoying bug which means that when you click on a Sample Set to move it's position, if you don't click outside the Sample Set column, it'll pick up other Sample Sets and they'll move randomly.

Even a list of just 20 Sample Sets proved tricky until I realised what the problem was!

Sample Set Name	Old Location	New Location
Scp-DarkCalling	A25	A1
Syn-Alaska	A43	A2
Syn-OberHorn	A59	A3
Syn-P5Saws	A60	A4
Syn-Stringelizd	A68	A5
Syn-To2Horns	A71	A6
Syn-TopSaws	A72	A7
Cho-AirVoice	A74	A8
Cho-ArtVox	A75	A9
Cho-BreathyCho	A76	A10
Cho-FatQuyer	A77	A11
Cho-VocNoVox2	A80	A12
Cpl Fatwave	A89	A13
Cpl MemoryStrings	A92	A14
Cpl-Voc String2B	A15	A15
Cpl StringSection	A103	A16
Cpl-Zephir	A18	A17
Cpl -SlowMyst	A11	A18
Cpl-Wonderworld	A17	A19
Syn-Foghorn	A53	A20

So after many hours of work I ended up with this list of native Blofeld Sample Sets with heaps of memory to spare and my favourite patches all saved:



Now do an **Export** and save your work as an **.xml** file.

At this point you may wish to upload your work to the Blofeld (so that your favourite patches will work). So select **Save MIDI File**, then select **Upgrade** and select the MIDI file you just saved - transmission will start immediately. It can take time 35 minutes for a full sample collection. When complete the screen on the Blofeld should ask you to press play and the Blofeld will do a power cycle.

At this point you can start to work on your own Sample Sets (as discussed above). Once the work is complete repeat the upload process above.

## Support Material

I've found the Blofeld forums to be near useless (compared to SOS) and probably the best resource I found online was this nice chap who spends a huge amount of earnest time discussing the process - perhaps not enough detail, but hey.....

Waldorf  
Blofeld  
Samples 1:  
Is it a Sampler?

Waldorf  
Blofeld  
Samples 4:  
Transmission

Waldorf  
Blofeld  
Samples 2:  
How to activate?

Waldorf  
Blofeld  
Samples 5:  
Application

Waldorf  
Blofeld  
Samples 3:  
Preparation

## Overview of Process

So there we have the idiot's guide to managing Blofeld Samples - I hope it helps!

Let me try to summarise what's been said:

- 1) Purchase Licence SL from Waldorf if you're using the desktop version of Blofeld and install on your synthesiser.**
- 2) Download and install the free Spectre application on your computer.**
- 3) Prepare your samples as 44.1kHz/16bit .wav files.**
- 4) Create a 'Working Folder' and keep your samples and any saved .xml files in that folder.**
- 5) Connect the Blofeld to your computer over USB and select Blofeld as the MIDI input/output device in Spectre - check your Blofeld MIDI settings too.**
- 6) Decide which patches that you want to save on the Blofeld use native Sample Sets and make a note of their names along with their Sample Set locations.**
- 7) Determine what the new Sample Set locations will be once unused samples are deleted and make a table of Old versus New locations against Sample Set names.**
- 8) Re-program patches using the new locations.**
- 9) Load your existing .wpc or .xml file into Spectre**
- 10) Delete unused Sample Sets in Spectre and re-arrange into the new Sample Set location order.**
- 11) Save your work as an .xml file.**
- 12) Save the new Sample Set list as a MIDI file.**
- 13) Select Upgrade and select the MIDI file you've just saved.**
- 14) Following transmission select 'Play' when prompted on the Blofeld to reboot.**
- 15) DRINK!**

Easy really.....

Bob Bickerton  
30th August 2021

*Prepared so as to support a post on the SOS Forums.*