

# altiverb

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## *Making Impulse Responses from real acoustic environments using starter pistols*

This documentation :

### *Making starter Pistol IR's.pdf*

This manual describes how to make Impulse Responses by making recordings of starter pistol shots. While this is the quickest way to obtain impulse responses, it gives lesser quality than the sine wave sweep method, described in *Making post production IR's.pdf* and *Making IR's for music.pdf*

Related documentation :

### *Making post production IR's.pdf*

This manual describes how to make Impulse Responses in locations such as film sets, bathrooms and outdoor spaces in order to use them for post production purposes (i.e. for ADR and Foley purposes). It focuses on quick and practical ways to use portable equipment to obtain Impulse Responses.

### *Making IR's for music.pdf*

This manual describes how to make Impulse Responses in acoustic spaces such as concert halls, Studios, and churches in order to use the resulting files to process music using the Altiverb. We are assuming that you want to create the highest possible quality Impulse Responses.

### *Making IR's from gear.pdf*

This manual describes how to create Impulse Responses from hardware effects processors such as reverb and EQ units.

### *Portable Sweep Gear.pdf*

You can make Impulse Responses by playing back a sine wave sweep CD using portable, self powered gear. Audio Ease has created correction equalization curves for three tested playback sets. These curves are accessible in the *Altiverb IR Preprocessor* application that comes with Altiverb. This document lists the tested portable machines, and their availability .

## Outline

Making Impulse Responses with a starter pistol involves:

1. Recording a starter pistol shot
2. Naming Files
3. Assembling the takes in folder
4. Using the Altiverb™ IR Preprocessor

**Note: Use proper hearing protection when firing a starter pistol.**



## 1. Recording a starter pistol shot

The type of starter pistol used in our recordings fires ammunition blanks that are .22 caliber, (or 6 mm). This type of pistol produces an impulse that lacks high and low frequencies. The *Altiverb IR Preprocessor* application will make up for this in a later stage. The rounds look like this:



figure 1 - A .22 caliber starter pistol blank

You can overload many (even professional) recorder inputs before the audio hits the meters. This means that in many cases you cannot trust your meters, and sometimes not even your input overload indicators. In addition, you may have overloaded your recorder's microphone preamplifiers *before* the recording level control applies attenuation. This means you can have distorted material in your recording that, when transferred to disk, does not even hit maximum level.

The best way to confirm that the recording has not been overloaded is by examining the waveform when the recording is transferred to disk.

While figure 2 gives no reason to assume something has clipped, figure 3 shows a recording that at some stage *has* clipped; samples in the beginning are recorded at the exact same volume, yet the waveform does not even reach the maximum level possible.

In this discussion we assume you will fire a single shot, while recording with two microphones. You will obtain a mono to stereo Impulse Response from that, but you can make stereo input impulse responses by firing twice at different positions.

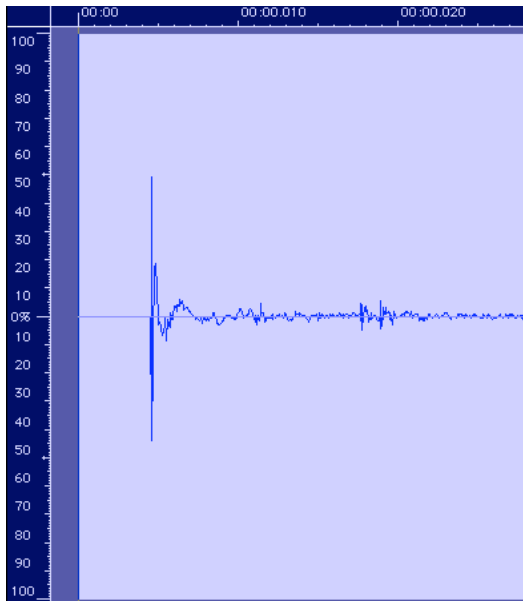


figure 2 - All seems to be OK

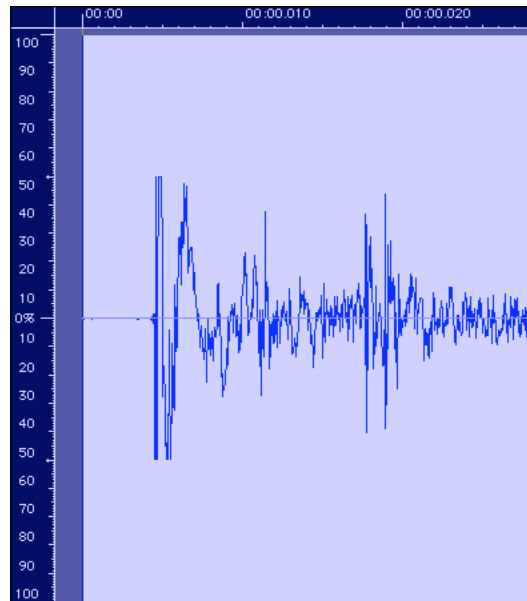


figure 3 - Obviously some stage has clipped

## 2. Naming files.

Create separate sound files for each channel. Stereo or quad interleaved files are not recognized by the Altiverb™ IR Preprocessor.

If two microphones were used to make the recording you can name the clippings like this:

**Post Office.1** (for the left channel)  
**Post Office.2** (for the right channel)

If you will be creating stereo input IR's you need to use the following naming convention:

Venue.starter pistol position.microphone number

**Post Office.L.1** (for the left recording channel of the left starter pistol position)  
**Post Office.L.2** (for the right recording channel of the left starter pistol position)

a second recording will then be named

**Post Office.R.1** (for the left recording channel of the right starter pistol position)  
**Post Office.R.2** (for the right recording channel of the right starter pistol position)

## 3. Assembling the takes in folders.

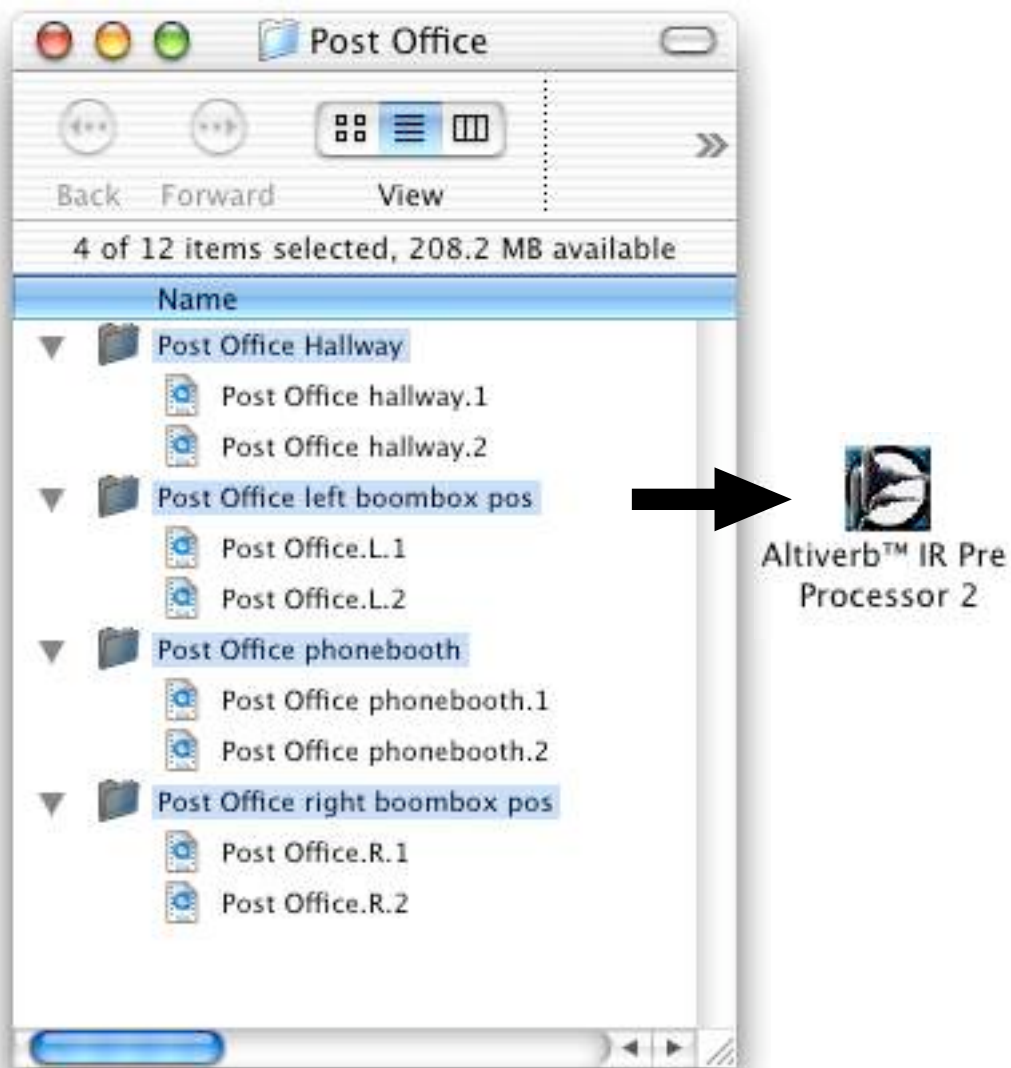
The two clippings (left and right recording channel) of each starter pistol position should be placed in a separate folder. If you want to produce stereo to stereo Impulse Responses, you should not yet put the recordings of left and right starter pistol positions together in a folder. You can do that after the folders went through the Altiverb™ IR Preprocessor.

#### 4. Using the Altiverb™ IR Preprocessor

Create a new empty folder in your *Impulse Responses* folder (located in the *Applications/AudioEase/Altiverb* folder and call it for instance “*Post Office IR's*”

This phrase will show up as the gray category item in the Impulse Responses pop-up in Altiverb.

Drag all the folders you have just created onto the Altiverb™ IR Preprocessor application.





Press the topmost select button and select the file *6 mm flobert starter Pistol* located in the *Altiverb IR Pre processor/Pre-processor Correction Files* folder. Press the bottom select button and select the empty folder “*Post Office*” that you have just created.

Hit Process. The Altiverb™ IR Preprocessor will automatically fade tails into the noise floor and correct for the characteristics of the starter pistol. It will equalize levels to make the Impulse Response fit in with other Impulse Responses, and place the results in your Altiverb Impulse Responses folder.

Any resulting Impulse Responses from left and right starter pistol positions can now be placed together in a single folder. By doing this you are creating a stereo to stereo Impulse Reponse from 4 separate files:

```
Post Office.L.1
Post Office.L.2
Post Office.R.1
Post Office.R.2
```

You are now ready to launch your sequencer or audio editor to listen to your new IR's in Altiverb.