WAVES

Abbey Road Reverb Plates

USER GUIDE

WAVES

Abbey Road Studios

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Chapter 1 – Introduction

1.1 Welcome

Thank you for choosing Waves! In order to get the most out of your Waves processor, please take the time to read through this manual. In conjunction, we also suggest you become familiar with www.wavesupport.net, where you will find an extensive answer base, the latest tech specs, detailed installation guides, new software updates and more.

By signing up at www.wavesupport.net, you will receive personalized information on your registered products, reminders when updates are available, and information on your authorization status.

1.2 The Original Reverb Plates at Abbey Road Studios

One of the unique tools available to artists recording at Abbey Road Studios in the mid-twentieth century was access to the studios' three echo chambers for the creation of unique reverb effects. The sound created by the chambers was very natural, but not easily adjustable, allowing only a single fixed reverb and decay time per chamber. With just three chambers existing to facilitate reverb for all of Abbey Road's recording, remix and transfer rooms, availability would often also be an issue. To combat this, in 1957, Abbey Road Studios purchased four brand new state-of-the-art plate reverb units to complement the existing chambers.

Designed in Germany by EMT, these were the first professional electro-mechanical artificial reverb units made available to studios worldwide. At 8 feet long, 4 feet tall and 1 foot wide, these plates were considerably more compact than the chamber rooms. Each plate contained a large sheet (or "plate") of steel suspended vertically by a set of springs to allow it to resonate, and was fixed to a stable steel frame. A small transducer speaker was fixed to the plate's center point, and when a signal was played through the speaker, the plate would begin to vibrate, sustaining the tone for several seconds. Two pickups were attached to each plate, on both sides of the speaker, a quarter of the distance from the plate's edge. The pickups sensed the vibration, converted it to a line level, and sent it to the output plate amplifier.

Unlike the reverb chambers, these plates had a damper system that allowed adjustment of the reverb decay time. The damper system consisted of a fiberglass panel suspended parallel to the plate, which could move towards or away from the plate sheet. The damper could control variable distances, ranging from 1/8” away from the plate for a one-second reverberation time, to 2” away from the plate for a five-second decay. This system let the user tune the decay time with whatever precision was required to meet the needs of the particular recording or mixing session.

To this day, Abbey Road Studios house the four reverb plates – labeled A, B, C and D. Plate D has all-valve amplifiers on both the input and output stages, consisting of E81L, E80CC and EF804ES valves. Plates A, B and C also have an all-valve amplifier on the input, but on the output stage EMI Central Research Laboratories custom-built hybrid solid-state/valve amplifiers, in an attempt to keep the noise floor to a minimum. The sound of the plates is generally considered smoother than that of an echo chamber, if not entirely natural. Most Abbey Road engineers initially preferred the more organic-sounding chambers, but this became less of an issue when bands started to experiment with psychedelic sounds and ‘natural’ sounding recording techniques were becoming less in vogue for pop music. Due to the nature of analog valve equipment and manufacturing techniques (plus the EMI custom-built amps), no two plates sound the same: each has its own distinctive sonic characteristics. From the mid-1960s onward, ever Since the *Sgt. Pepper’s Lonely Hearts Club Band* era, these four plates have seen significant use on nearly every pop recording done at Abbey Road Studios – from the Beatles and Pink Floyd, to Radiohead, Adele, James Blake, Florence + the Machine and Frank Ocean. The plates even started being favored by some of the classical engineers, and before long were being used on a wealth of films scores – so much so that the plates would often have to be booked well in advance of sessions to guarantee their availability.

1.3 Product Overview

The Waves Abbey Road Reverb Plates plugin faithfully models the above-mentioned plates A, B, C and D. A plate selector control allows you to switch between the four modeled plates, letting you find the exactly reverb ambience that you need. You can also choose from 11 different damper positions, giving you different reverb decay times – anywhere from 1 to 5.4 seconds, depending on the selected plate. The bass cut circuit at the start of the driver amplifier chain has also been modeled, so you can decrease the overall low-frequency area to avoid rumbles.

The Treble control is a high-shelf filter that adds brightness and air to the overall reverb sound. It can also decrease the top of the high-frequency range, resulting in a darker sound. The Drive and Analog controls model the original amplifiers' THD behavior and the plates' hum and noise: switch them on or off, and select the exact amount added. The Pre-Delay control sets the amount of delay between the direct dry signal and the processed wet sound, while the Wet/Dry control sets the balance between the two.

1.4 Concepts and Terminology

Since the original hardware plates at Abbey Road Studios are not located inside the control room, engineers need to use a remote control in order to set the damper position. The Damper control of the Waves Abbey Road Reverb Plates plugin is inspired by that remote control. The bass cut control is modeled on the original bass cut circuit located at the original plates' input amplifier. The Treble control has been added as an extra feature: it is modeled on Abbey Road's EMI mixing desks, which were often used to brighten up the signal.

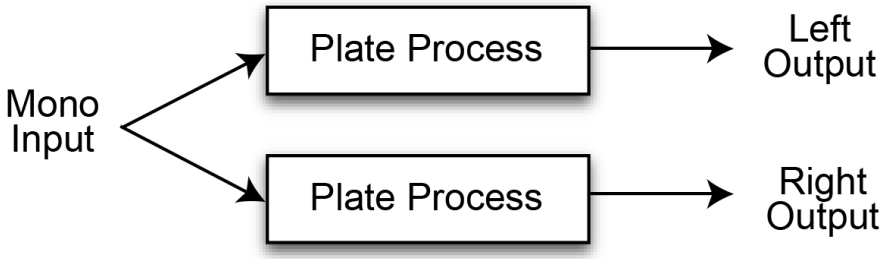
1.5 Components

WaveShell technology enables us to split Waves processors into smaller plugins, which we call **components**. Having a choice of components for a particular processor gives you the flexibility to choose the configuration best suited to your material.

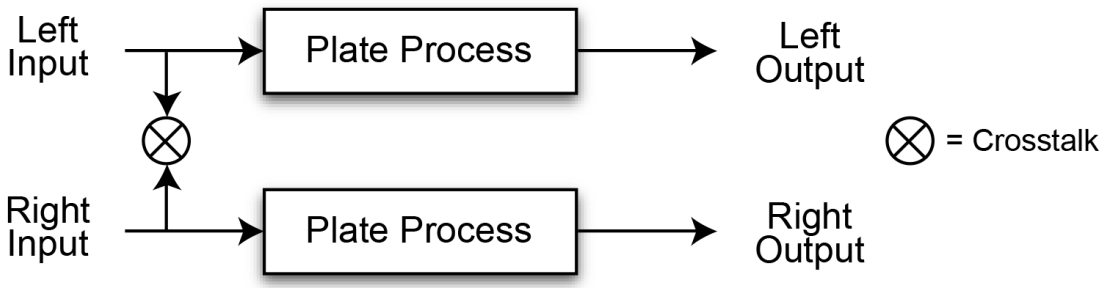
The Waves Abbey Road Reverb Plates plugin includes three components:

Mono – One plate process engine:

Mono to Stereo – One input into two plate process engines (L, R):



Stereo – Two inputs into two plate process engines (L, R), with the inputs summed:

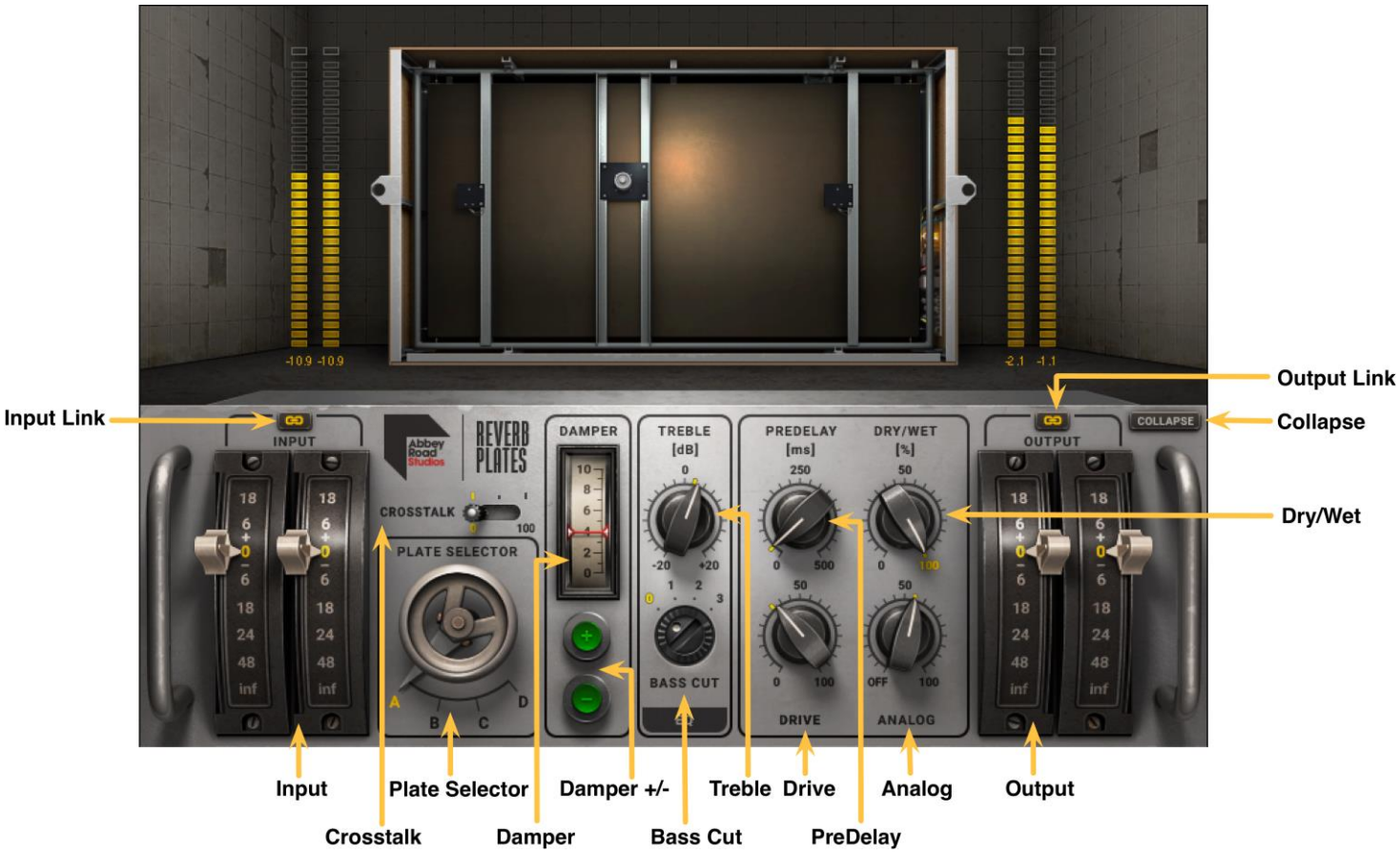


Chapter 2 – Quick Start Guide

- Launch the Waves Abbey Road Reverb Plates plugin on your reverb aux buss or track insert.
- Send a signal to the reverb aux and listen to it through the default preset.
- Set the Damper value that fits your overall sound image.
- Try to change the Plate selector to find the precise plate reverb sound you want. Each plate reverb sounds different, depending on the spring, the type of amplifier engine, and the plate sheet itself.
- If the overall sound has more low frequencies than you need, use the Bass Cut control to decrease them.
- Use the Pre-Delay control to get a delay between the dry signal and the wet reverb sound. We suggest using 15 ms for instruments and 40 ms for vocals. This is only a suggestion, however; use whichever delay time best serves the mix in your view.
- Use the Treble control to brighten up the overall reverb sound.
- The Drive and Analog controls allow you to add, or to turn off, the modeled THD behavior and noise-and-hum levels.

Chapter 3 – Interface and Controls

3.1 Interface



3.2 Controls

Input

Controls the input gain level before any processing takes place. In the Stereo component, the left and right faders can be moved independently. You can also move them together by clicking and dragging up or down in the small area between the two faders.

Range: -inf to +18 dB
Default: 0 dB

Input Link

Links the left and right Input faders (Stereo component only). When the Link control is activated, moving one fader will also move the other, and any offset between left and right input will be kept.

Options: On, Off
Default: On

Plate Selector

Selects between plates A, B, C and D.

Please note: Switching plates does *not* change the values of any of the other plugin parameters (Damper, Pre-Delay, Drive, Analog, etc.).

Options: Plate A, B, C, D
Default: Plate A

Damper

Controls the reverb decay time, letting you choose from 11 different damper positions (0 to 10). Select the damper position by clicking the **+** and **-** buttons (both of which respond to extended mouse clicks), or by clicking and dragging inside the damper meter itself.

Please note: The numbers on the meter represent different damper positions; they do *not* represent the number of seconds of decay time. Each of the four plates has its own damper behavior. The same damper position will therefore correspond to different reverberation decay times, depending on the plate you are using. For example, damper position 3 in Plate C will give you a much shorter reverberation time than damper position 3 in Plate A.

Range: 0 to 10 (approximately 1 to 5.4 seconds, depending on the plate)
Default: 2

Bass Cut

There are four high-pass filter modes on the plate input amplifier that cut frequencies at the range between 10 Hz to 1000 Hz.

Options: 0, 1, 2, 3
Default: 0 (no bass cut)

Drive

Controls the amount of drive added to the signal by modeling the THD behavior of the driver amplifier and the plate itself.

Range: 0–100
Default: 0

Analog

Controls the amount of modeled hum & noise added to the signal.

Range: Off–100
Default: 50

Treble

4000-Hz High-shelf filter to control the reverb's brightness.

Range: -20 dB to +20 dB
Default: 0 dB

Pre-Delay

Controls the amount of the delay between the dry and wet signal.

Range: 0 ms–500 ms
Default: 0 ms

Wet/Dry

Controls the balance between the dry and wet signal and thus the amount of reverb added.

Range: 0% (dry) to 100% (wet)
Default: 100% (wet)

Crosstalk (Only in Stereo to Stereo component)

Controls the summing between the Left and Right inputs to get a stereo effect.

Range: 0%–100%
Default: 0%

Output

Controls the output gain level after processing. In the Stereo component, the left and right faders can be moved independently. You can also move them together by clicking and dragging up or down in the small area between the two faders.

Range: -inf to +18 dB
Default: 0 dB

Output Link

Links the left and right Output faders (Stereo component only). When the Link control is activated, moving one fader will also move the other, and any offset between left and right output will be kept.

Options: On, Off
Default: On