

WAVES : ABBEY ROAD

THE KING'S MICROPHONES

USER GUIDE



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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 that you become familiar with www.wavesupport.net. There you will find an extensive **Answer Base**, the latest **Tech Specs**, detailed **Installation** guides, new **Software Updates**, and current information on **Authorization** and **Registration**.

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 Product Overview

The Waves: Abbey Road – The King’s Microphones plugin is a digital audio processor, created in concept by Abbey Road Studios and engineered by Waves. The plugin is based on three historical microphones currently held by The EMI Archive Trust, which belong to the royal family and were used by its members in public addresses.

The microphones are:

- King George V (circa 1925) – Carbon microphone
- King George VI (circa 1936) – Dynamic moving coil microphone
- Queen Elizabeth (circa 1936) - Dynamic moving coil microphone

These iconic microphones were used to record the score and speech dialogue for the multi award-winning hit film *The King’s Speech*.

1.3 A Few Words from Abbey Road

Abbey Road Studios

Abbey Road Studios is an iconic symbol in the international music industry. The studios have been at the heart of British music for almost 80 years and been the home of countless landmark recordings and innovative techniques, equipment and technology.

Today, Abbey Road Studios is one of the most technically advanced recording, mixing and post-production facilities in the world. For many years the studios benefited from EMI's research and development division, which custom-built mixing consoles, outboard gear and microphones to meet the needs of studio engineers and artists. Most of this equipment was only available to EMI studios and was never sold commercially.

The Royal Microphones

In the 1920s and 1930s, EMI had the honour of crafting special microphones for the British Royal family for use at important and significant occasions. From this extremely rare collection, three microphones have been used as a basis for this unique plug-in.

H.M. King George V model:

This Carbon microphone was designed by Marconi–Reisz circa 1925. It is comprised of fine carbon dust held between output electrodes, fronted by a mica diaphragm and encased in a grand marble shell. The microphone needs a constant DC voltage which can be achieved today with a domestic 9v battery.

Carbon microphones are rarely used today. Despite this model's limited bandwidth and relatively high noise floor it was one of the best microphones available at the time, therefore this particular microphone has a wonderful coloured sound unlike any manufactured today.

H.M. King George VI and H.M. Queen Elizabeth models:

Both of these microphones are based on the EMI CPM201 model. These moving coil

microphones were specially built in 1936, encased in silver by G & S Co Ltd of London. The front grill bears individual insignias of GRVI (George Rex VI) and E (Elizabeth) and the top of the silver 'headlamp' style microphone is adorned with the Royal coat of arms. The diaphragm is made of PVC and shaped almost like a loud speaker cone. It is presumed these microphones were designed for outside broadcast, as they are more robust than the more popular ribbon microphones of the time.

Use on Sessions Today

These Royal microphones and many other fascinating EMI memorabilia and equipment are held in special storage by the EMI Archive Trust, based in Hayes. Peter Cobbin, Abbey Road Studios' Senior Engineer, was visiting the archives about 12 years ago when he noticed an ornate box on one of the shelves. Upon asking, he was told that it housed a microphone made for King George the V.

Peter thought nothing more of this until recently, when composer Alexandre Desplat asked him to record the score for the award-winning film 'The King's Speech'. Remembering what he had found over a decade earlier, Peter was keen to borrow the King George V microphone for inspiration during the film's recording sessions in Studio One.

He was delighted to discover that in addition to microphones created for King George V and Queen Elizabeth, the archives had the microphone used by King George VI, the central character of the film.

The EMI Archive Trust kindly agreed to loan the microphones, and upon their arrival Peter was curious to see if they could actually function. Lester Smith, Abbey Road Studios' legendary microphone technician, was able to get three of them working.

As three microphones were available, Peter placed these in front of the orchestra in a Decca Tree formation – this became known on the sessions as the Royal Family Tree.

The oldest, King George V was placed in the centre position, with the two moving coil microphones on either side. The King George V carbon microphone has a narrower

frequency response and a very special “1920s radio” type sound, which worked beautifully in conjunction with the fuller sounding stereo pair. Each microphone has its own unique sound; the Queen Elizabeth model has a little more bottom end than the King George VI. All three microphones have a beautiful, colourful tone that wowed the film’s director and composer in the control room.

The Royal Tree was used extensively on the music mix for the film (in conjunction with more traditional orchestral microphones). The director was so impressed by the sound these microphones produced he was determined to find a way of using this unique quality for the film’s speeches. Keeping in mind the film’s dub mix was already underway, Peter found a solution to this by re-recording all the flat ‘speech’ dialogue through a speaker and back into the Royal microphones at Abbey Road Studios. It is at this time Peter thought this microphone effect would make a great plug-in.

After the film was finished, it was only too tempting to try these microphones out on other sources to see how they sounded. In the relatively acoustically transparent vocal booth in the Penthouse at Abbey Road Studios, a B&W 802 loudspeaker was set up in front of the microphones. Drums, guitars, vocal and synths were then played and ‘processed’ through the microphones at different proximities.

Peter’s curiosity was rewarded with some fantastic and unique ‘filter’ type effects. The resulting plug-in allows sound designers, engineers, producers and musicians all over the world to give their audio the ‘royal’ treatment!

1.4 Concept and Terms

The King’s Microphones plugin is a special EQ filter processor that recreates the unique tonal character of each of these microphones, with three proximity positions for each: Close, Ambient and Natural.

Close emulates the response from a source located 5cm from the microphone capsule, creating a warmer tone through proximity.

Ambient emulates the response from a source located 40cm from the microphone

capsule.

Natural emulates the basic response of the microphone, without any proximity effect or artifacts

All positions were created “on axis,” meaning that the source is directly in front of the microphone capsule.

1.5 Components

The King’s Microphones plugin consists of two components:

- The King’s Microphones Mono
- The King’s Microphones Stereo

Chapter 2 – Quick Start Guide

The King’s Microphones plugin is extremely easy to use.

- Insert the plug on the audio track you wish to process.
- Play your audio source through the plugin.
- Listen to its tone.
- Click through the various microphones and positions to find the setting that is best suited to your source.
- Use the Gain control to set your level and avoid clipping as needed.

Chapter 3 – Interface and Controls

3.1 Interface



The King's Microphones graphic user interface is divided into 3 main sections:

- The top section is the WaveSystem Toolbar, which provides general plugin functions, detailed in Chapter 4 of this manual.
- The middle section displays a picture of the currently selected microphone and information about the selected position.
- The bottom section includes controls for microphone and position selection, gain knob, trim control, peak meter, and clip indicator.

3.2 Controls

Microphones / Positions



KING GEORGE V

Range: 1 (Close), 2 (Ambient), 3 (Natural)

KING GEORGE VI

Range: 1 (Close), 2 (Ambient), 3 (Natural)

QUEEN ELIZABETH

Range: 1 (Close), 2 (Ambient), 3 (Natural)

Gain / Trim



GAIN controls input level.

Range: -48dBFS up to +12dBFS

TRIM is used to adjust input gain, to eliminate clipping or boost a weak signal.

Range: 0 to 12

The Trim button displays the amount of gain adjustment needed in order for the signal to have the highest possible level without clipping. Clicking the Trim button will

automatically apply this value to the Gain knob, and reset itself to display the trim information for the new gain value. Adjusting the gain knob manually will also reset the value on the Trim button.

Peak Meter / Clip LED



PEAK METER displays the peak level in dBFS.

Range: -48 to 0 dBFS


CLIP (image above, top left) lights up when the signal peak surpasses the full digital scale. It will remain lit until it is manually reset by clicking on it, or anywhere in the meter area.

Chapter 4 – The WaveSystem

4.1 The WaveSystem Toolbar

All Waves plugins feature the WaveSystem toolbar which takes care of most administrative functions you will encounter while working with your Waves software. The features of the WaveSystem toolbar are the same on practically all Waves plugins, so familiarity with its features will be helpful whichever plugin you are using.

Toolbar Functions

	Opens the plugin About box
Undo	Undoes the last 32 actions
Redo	Redoes the last 32 undone actions
Setup A/B	Toggles between two presets, useful for comparison of parameter settings
L/R Arrows	Move to the previous or next preset
Copy A→B	Copies the current settings to the second preset register
Load	Recalls presets from file
Save	Saves presets in the Waves file formats
?	Opens the PDF manual for the plugin you are using

4.2 Preset Handling

Preset Types

Factory Presets are permanent presets in the Load menu. Due to the simple nature of The King's Microphones plugin, it does not offer any special factory presets but will allow saving and recalling of user presets and settings, using the Save and Load preset buttons of the WaveSystem Toolbar located at the top of the plugin.

User Presets are your favorite settings of the plugin saved as a preset in the Load menu, under 'User Presets'. User Presets can be overwritten and deleted.

Setup Files may contain more than one preset. For example, a single file can contain all the presets for a session. When you open a Setup File, all its setups become part of your Load pop-up menu for fast access. This can be particularly useful with multiple instances of a plugin in a single session. By saving all the settings you create into a single Setup File, they can all be quickly available for every instance of that plugin.

Loading Presets and Setups



Click on the Load button to see the Load pop-up menu. The menu is divided into four sections. If a section is not currently available it will not appear in the Load pop-up menu.

- Open Preset File...** Select to open any setup or preset file, whether from the Library or your own creations.
- 'Filename.xps':** Displays any currently loaded Setup File and its presets.
- Factory Presets:** Displays the default Factory Presets.
- User Presets:** Displays any loaded User Presets.

Saving Presets and Setups



Click on the Save button to see the Save pop-up menu. Four options are available. If an option is not currently available it will be grayed out and inaccessible.

- Save to New File...** Select this to start a new Setup file. There are two prompts - first for the setup filename, then for the preset name. You must provide a name for both the setup file and the preset. Click OK (ENTER) to complete the save. It is a good idea to create a folder in which to save several setup files for a project.
- Save 'File Name' – "Preset Name"** Overwrites the settings of the loaded preset (whether a User Preset or a preset from a Setup File) with the current settings. If a Setup File is currently loaded, the name of the Setup File is displayed followed by the name of the preset itself. If a User Preset is loaded, its name is displayed.

Save to 'File Name' As...

Saves the current settings as a new preset into the Setup file that is open (if one is not open, the option is grayed out). You will be prompted to give the preset a name.

Put into Preset Menu As...

Save the current settings into a User Preset that will always be in your Load menu (until deleted). You will be prompted to give this preset a name. User Presets are stored in the plugin's preference file.

Please note: Special characters (such as: !, @, #, %, ^, etc.) are not supported in preset names.

Deleting Presets

You may delete User Presets and presets within a Setup File. Factory Presets and Setup Library files cannot be deleted or overwritten.

1. Hold the Command (Mac)/Control (PC) key down.
2. Click-and-hold the Load button to see the pop-up menu.
3. While still holding the Command/Control key, select the preset or setup to delete.
4. A confirmation box will appear, allowing you to cancel or 'OK' the deletion.

A/B Comparison and Copying

The Setup A/Setup B button may be clicked to compare two settings. If you load a preset in the Setup B position, this will not affect the preset loaded into the Setup A position, and vice-versa.

If you want to slightly modify the settings in Setup A, you can copy them to Setup B by clicking on the Copy to B button, then alter Setup A and compare with the original Setup B.

The name of the current setup will be shown in the title bar (on platforms which support it), and will switch as you change from Setup A to Setup B.

Note: an asterisk will be added to the preset name when a change is made to the preset.

4.3 Interface Controls

Controls can be in one of three states:

- **Not Selected** where the control is not the target of any user entry
- **Selected** where the control is the target of mouse control entry only
- **Selected and Active** where the control is the target for both mouse and keyboard entry
-

Toggle Buttons

Toggle buttons display the state of a control, and allow switching between two or more states. **Single-click** to change the control's state. Some toggle buttons have a text display which updates with the current setting, and others (bypass, solo, or monitoring toggles) illuminate when the control is active.

Some plugins have **link buttons** between a pair of toggle buttons, allowing click-and-drag adjustment while retaining the offset between the controls.

Value Window Buttons

Value windows display the value of a control and allow **click-and-drag** adjustment, or **direct control via the keyboard**.

- **Using the mouse**, click-and-drag on the value window to adjust. Some value windows support left/right, some up/down (as you hover over a button, arrows will appear to let you know which direction of movement that button supports). You may also use your mouse-wheel to adjust parameter values.
- **Using the arrow keys**, click once with mouse to select the button, and then use up/down – left/right (depending on the direction supported by that button) to move in the smallest incremental steps across the button's range (holding down the arrow keys will move faster through the range).
- **Using key entry**, double click on the button to open the value window, and directly enter the value from your keyboard. If you enter an out of range number, the button stays selected but remains at the current setting. (System beeps if system sounds are on.)

Some plugins have **link buttons** between a pair of value windows, allowing click-and-drag adjustment while retaining the offset between the controls.

Sliders

Click or scroll the mouse-wheel on the slider itself or anywhere within the sliders track. The numerical value of the slider settings is displayed in a hover window above the slider path.

Hover Box

Hovering boxes will appear and display the control value when hovering with the mouse over the control.

Multiple Control Selection

One of the most powerful features of the WaveSystem is the ability to select and adjust multiple controls simultaneously. Using the mouse, drag-select the desired group of buttons or graphic controls by clicking and holding at a point outside the controls, and forming a rectangle that includes the controls you wish to adjust. Alternatively, press and hold Shift while clicking the mouse on any control you wish to link. This method is useful when you want to select two or more controls that are not adjacent to one another.

TAB Functions

TAB moves the 'selected' status to the next control, with shift-TAB moving in the reverse direction.

Additionally, the Mac has an option-TAB function for 'down' movement and shift-option-TAB for 'up' movement where applicable.

If you have several Value Window Buttons selected, TAB functions will take you through the selected controls only.

Hitting Esc or Return will return the 'focus' to the DAW application.

4.4 Waves Preferences (Pro Tools only)

When launching Pro Tools, hold Shift to view the Waves plugin Preferences window.

The following options are available:

- Don't use AudioSuite plugins
- Don't use RTAS plugins
- Rescan all plugins
- HUI control surface support (low resolution)
- Enable single-click text entry