

# **ELECTRONIC AUDIO EXPERIMENTS**

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## **Technical Manual**

The Bard

Manual Revision 1

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# 1 Introduction

Thank you for your purchase of The Bard by Electronic Audio Experiments. This manual includes all the information you need to properly use and enjoy your pedal. We've also included some background that you might find interesting.

The Bard is an homage to one of our favorite misunderstood amplifiers of the past: the Music Man HD130. We love these amps for their bright clean tones, trashy overdrive, and very wide frequency response that suits both guitar and bass. Because we love an offbeat passion project, we editorialized our favorite parts of this cult classic into pedal form. This originally took shape as an open source project (which was also built by Nerd Knuckle Effects for a while), but due to popular demand we decided to create a production version as well.

Manufactured from 1974 to 1984, the HD series amps were among the first hybrid amps to combine a solid state preamp with a tube power amp. This was an unusual choice, perhaps inspired by the relative novelty of op amps at the time. Whatever the reason, these amps were gravely underrated in their time, which is a nice way of saying they were a commercial flop. Music Man's amp production fizzled out after an asset sale to Ernie Ball. While the guitars have lived on under their stewardship, the HD130 and its siblings were never reissued, which further underscores their relative obscurity. In the decades since, they have developed a reputation as being one of the more affordable and reliable vintage amps on the market. While only a handful of notable guitarists ever used them—Joe Strummer, Joan Jett, and Eddie Vedder, apocryphally—I have seen HD130s and HD65s at countless DIY shows and small clubs over the years.

The Bard's circuitry resembles a classic 1960s American amplifier, with op amps in the place of tubes. The clean tones are clear and sparkly, with a gentle dip in the midrange thanks to the passive tone stack. Increasing Drive delivers medium gain sounds with a glassy edge, and at the highest Drive settings, the op amps distort in a way that is unapologetically not "tube-like"—a hallmark of the original amps. The tone stack is located before the primary clipping stage and can emphasize specific textures within the overdriven sound. In the process of editorializing this circuit for pedal use, we re-scaled the gain for standard 9V operation and added a low pass filter on the output to shave off any overly harsh harmonics. These design elements make The Bard a versatile performer: it works as a standalone drive, as a tonal enhancer, as a boost for other pedals, or even as a clean base layer. No matter what, it can effortlessly traverse between traditional and angular stylings.

Thanks for reading, and enjoy.

-John Snyder, EAE

## 2 Power and I/O

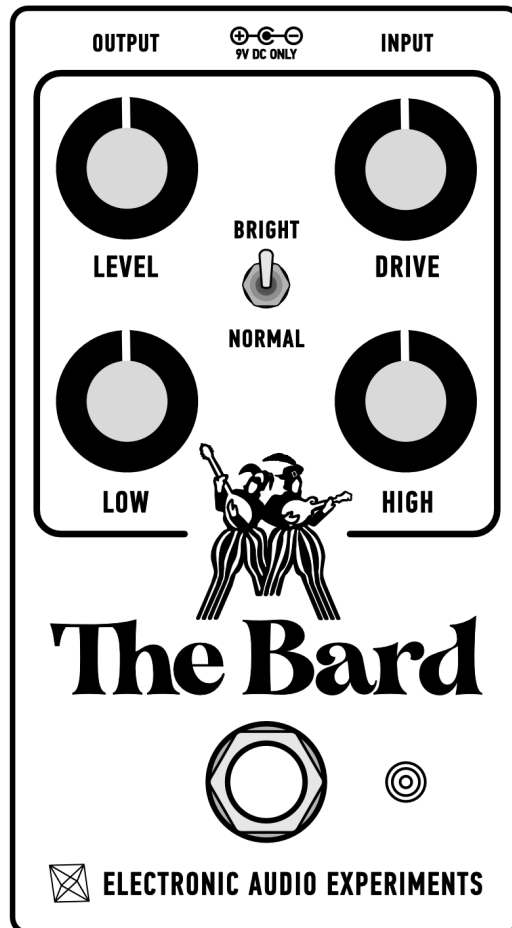
To power The Bard, use a standard, reliable 9VDC center-negative supply with a 2.1mm barrel tip. The Bard has a current draw of 60mA when active, so you can use a typical low current output on a brick supply. The Bard will work great on a daisy chain, but an isolated power supply is preferred especially if you are also using digital pedals with a high current drawn. Recommended power supply brands include Truetone™, Voodoo Lab™, Cioks™, etc. Please note that all Electronic Audio Experiments products do not use batteries.

The Bard's power input is protected against reverse polarity and will tolerate brief over-voltage excursions up to 18V. However, operation at voltages greater than 9V is not recommended and will risk voiding the warranty.

Use standard 1/4" patch cables to patch The Bard into a pedal chain, as normal. The input jack is on the top right and the output jack is on the top left. The Bard works anywhere in a signal chain, but like the original HD130 it does have a lower-than-normal input impedance of about 200kΩ, which will make it react a little bit differently with certain pickups if there is not a buffer before it in the signal path. Compared to the buffered case, your pickups will sound very slightly darker and smoother.

The Bard uses soft-touch relay switching in a true bypass configuration. The relay will default to the bypass state in the event of power loss.

### 3 Controls



**Level** Turn clockwise to increase the output volume. Handy as a boost!

**Drive** Increases the gain, from clean to touch sensitive grit to heavily overdriven. The taper of the control is highly influenced by the EQ settings and the position of the Bright/Normal switch.

**Low** Passive bass control, with about 15dB of range below 300Hz. Higher settings will make the drive more fuzzy.

**High** Passive treble control, approximately 15dB of range between 1kHz-4kHz. Higher settings will increase gain for high frequencies, sharpening the drive sound.

**Bright/Normal Switch** Changes the treble contouring of the Drive control. At low drive settings, adds a glassy character. As drive is increased, the switch is more subtle. At maximum drive, the switch makes no discernible difference in the sound.

## 4 Detailed Operating Instructions

Dialing in The Bard is straightforward, though it has a few tricks up its sleeve due to the interactivity between its controls. Start with the tone controls at noon, then set the Drive and Level to taste to explore how much gain is available. At higher Drive settings you will want to decrease Level to compensate. This is a good time to experiment with Bright switch, which specifically changes the behavior of the Drive knob. This switch has a more pronounced effect at lower Drive settings, which lets you dial in sparkly, glassy clean sounds or add edge to medium gain levels. In Normal mode, the overall tone is smoother and darker. (Note: at maximum Drive, Bright mode has no effect. This is just like the original amp.) Overly harsh or piercing tones can easily be reined in with the Treble control. Or, you can embrace the razor sharp attack. These controls affect the high frequency content in different ways, so try all the combinations to see what you prefer.

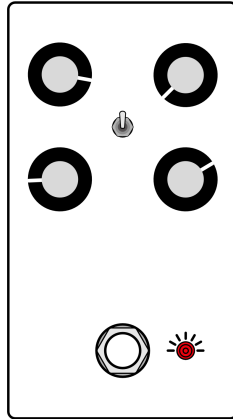
The Bass control is in general more subtle. It affects low frequencies below 300Hz (for reference, the low E on a guitar in standard tuning is about 83Hz, but most of what you hear consists of overtones). Its impact will be most noticeable when using a down-tuned guitar or a bass in the cleaner gain range of the pedal. At higher gain, increasing Bass can soften your attack and make the overall gain character more fuzzy.

Once you're acquainted with the controls, try the Bard in tandem with other pedals. Because it is clear and dynamic, it makes a great boost into other pedals or into an amp that is on the verge of breaking up. Try lower Drive settings in Bright mode, and increase the Level to slam whatever is next in your signal chain. You can also use the Bard as a tone shaper for other pedals before it. Try cleaner settings with the toggle set to Normal mode, then use the tone controls for more precise sculpting.

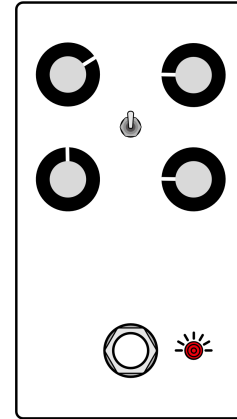
Finally, you can also use the Bard as a foundational clean sound. It's not quite a full amp-in-a-box, but works great as a clean platform in an ampless setup. Try the Level near max and use the Drive control to set your volume. There is plenty of output on tap to use with a DI or a power amp.

## 5 Suggested Settings

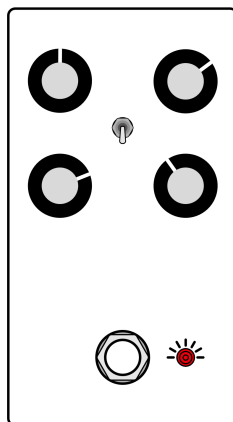
Here are some handy settings as a starting point to help you get to know The Bard.



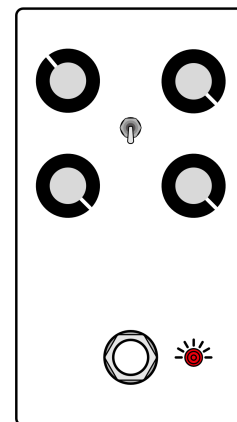
(a) **Glassy:** This is a good representation of what the original amp sounds like when set clean. It's incredibly clear. Great on its own or for boosting other stuff.



(b) **Warm:** The Treble control can balance out Bright mode, making for an excellent always-on sweetener. Turn up the Drive to get some dynamic clipping when you dig in.



(c) **Woolly:** Turn up the Bass and Drive knobs together for a thicker medium gain sound. Also works great on bass!



(d) **Trashy:** Turn up all the knobs for a bright, angry op amp distortion. (If you do this with the original amp, it will probably annoy your bandmates and/or blow up.)

## 6 Specifications

**Size:** 121mm x 66mm x 40mm

**Bypass:** Relay switching w/ true bypass

**Input Impedance at 1kHz:** 200k $\Omega$

**Output Impedance at 1kHz:** <5k $\Omega$

**Power Input:** 9V DC, 2.1mm center negative barrel connector

**Current Draw:** 60mA nominal current draw when active

## Revision History

Version	Changes
1	Release for Bard V1
0	Draft Copy