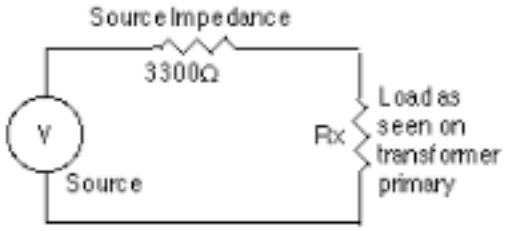
Guitar Amplifier Design

from

Stroud Audio Inc.

The vacuum tube guitar amplifier still sets the performance standard for the desirable sound of this music production instrument. Elements affecting this sound include the cleverly designed tone stacks, the specially developed loudspeaker, and the soft-edged distortion performance offered by vacuum tube circuits.

The Guitar Amplifier Design Course was developed for the designers, builders and suppliers of vacuum tube guitar amplifiers. The course starts with a discussion of the basics of electronic concepts . This is followed by explanations of components, the detailed understanding of subsystem level circuit blocks, and the overall amplifier operation.

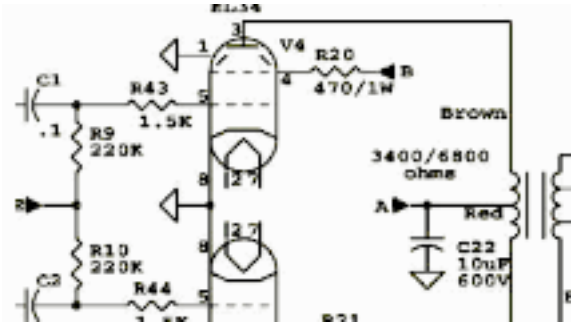


An Example of basic guitar amp concepts

Correct guitar amplifier layout offers much to stability and reduction of hum and noise. This course teaches the student effective layout concepts and some grounding techniques that are not generally seen today.

The use of oscilloscopes in testing and troubleshooting is taught. Spectrum analyzers and amplifier circuit simulations are also discussed.

The student's 70 page booklet will be accompanied by an illustration-filled PowerPoint presentation. The student will receive a certificate of completion upon satisfactory conclusion of the training course.

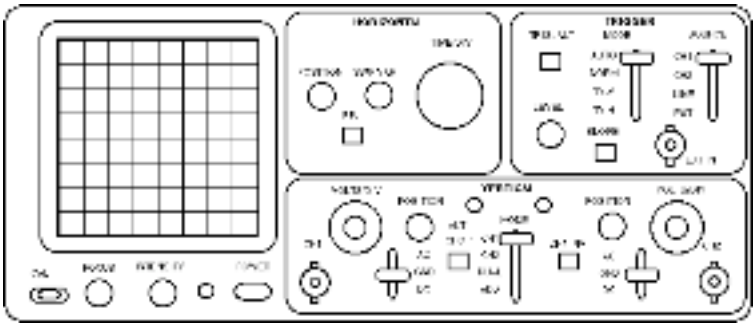


A schematic of an amp output stage

If the student desires, we can include oversight of his/her building a complete guitar amp at the conclusion of the training part of the course. The students will supply the kits, or needed

amplifier parts. Stroud Audio will provide access to a workspace with soldering iron, necessary tools, a multimeter and a dual-channel oscilloscope.

The student will emerge from this course with an understanding of guitar amplifier schematics, circuit components,subsystems, amplifier build and amp diagnostics. He/she will learn how to effectively use the multimeter and the oscilloscope.



Dual-Channel Oscilloscope

This class can be readily modified to meet the needs of the student. If the student desires, the course can also be enhanced to also discuss solid-state guitar amplifier circuitry and to learn how close these amps can come to vacuum tube guitar amplifier performance.

Attached please find a table of contents for this class. Please contact Stroud Audio Inc. for questions, comments, or class scheduling.

Thank you,

Richard Stroud
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Guitar Amplifier Design

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2.0 Components

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2.2 Capacitors
2.3 Resistor-Capacitor Filters
2.4 Inductors
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2.7.3 Output stages
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3.2 Circuit Blocks
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3.2.5 Tone stacks
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3.2.12 Reverb
3.2.13 Overdrive and Distortion

4.0 Guitar Amplifier build and layout

4.1 Amp component layout
4.2 Amplifier grounding issues
4.3 Radiation from wire currents
4.4 Radiation from wire voltages

4,5 First Time Power-Up

4.6 Amp testing and troubleshooting

5.0 Loudspeakers

5.1 Speaker construction

5.1 Speaker tone characteristics

5.3 Speaker directionality

5.4 Speaker impedance

5.5 Power handling

5.6 Speaker distortion and noise

5.7 Speaker power compression

6.0 Electronics Analysis Tools

6.1 Multimeter and safety

6.2 Oscilloscope (with student's amp or my Fender Bandmaster)

6.3 Signal generator

6.4 Spectrum analyzer

6.5 Circuit simulation

Optional, but recommended, is a build of a guitar amplifier,as the student desires.

Please contact us for class scheduling.

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