

A Greek Triad

With its unusual shape, this little tube amp—dubbed the Wood Star—shines brightly.



PHOTO 1: The completed Wood Star.

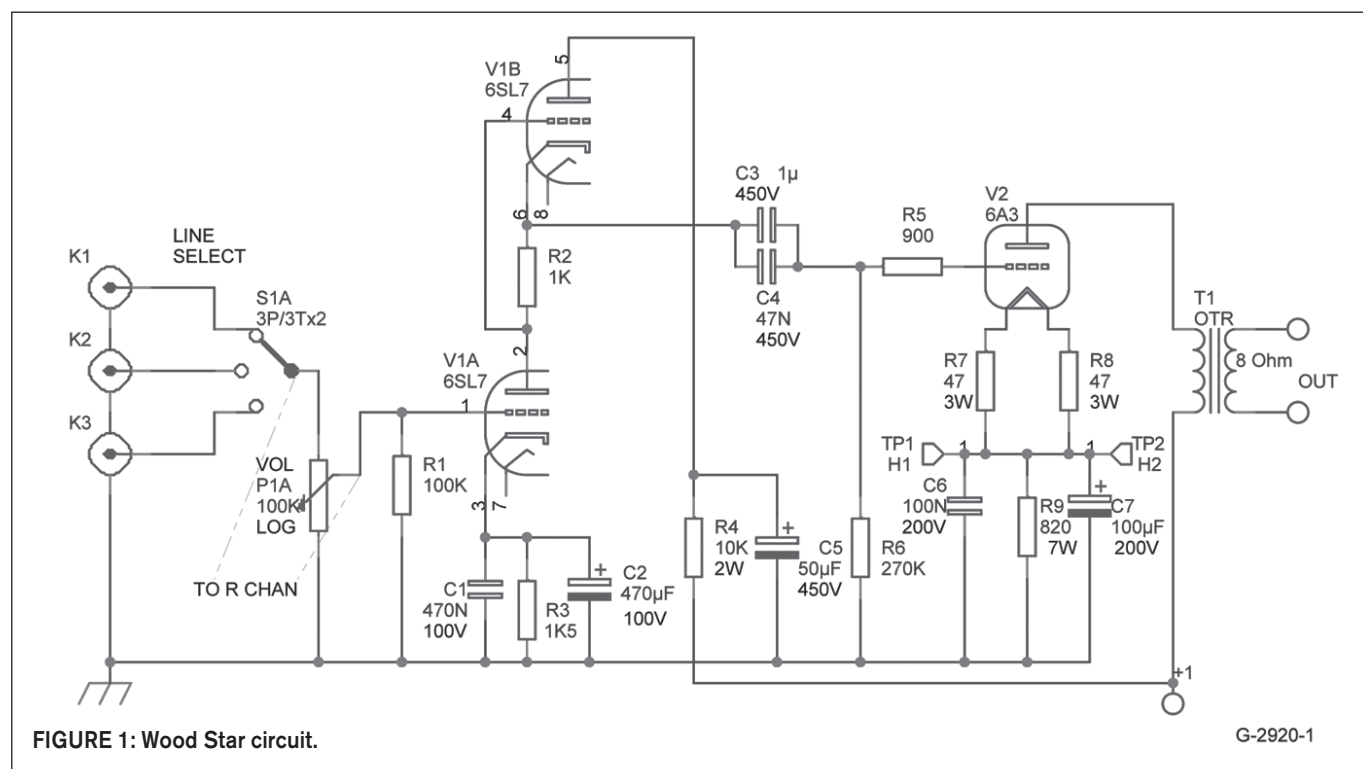
The idea to build a little SE tube amp was my friend's, Paris K., who worked for many years as a contributor to *Sound and Image*

magazine here in Athens. For years, he begged me to make him the smallest SE using only a tube, if possible. Then I built him "The Mosquito," a

2W amp with one ECL82 (6F3P Russian or 6BM8 American equivalent) on each channel.

Paris did not want any special look, so I made the Mosquito on two thin plates of aluminum—1.5mm mounted one up and the second down, linked by four long screws. I took all the parts from old TV sets, with special attention given to the two little output transformers, which I treated seriously. Tim Giatras made them to meet our specifications.

Astonishingly, the little unit worked fine, with different sensitive speakers,



and is still working. Then, all the team assembled in my little lab to brainstorm. After consuming some bottles of Uzo, we finally hit upon an idea for better construction.

THE PLAN

We dubbed our next amp—due to its shape—“Wood Star.” It includes the following features: no feedback, three channel line type inputs, volume control, and all the transformers hidden inside the chassis, with a big toroidal power transformer, in the upper leg, and the two output transformers inside the other two legs.

I chose a pair of 6A3s I had in stock (RCA) and two 6SL7 (6H9C Russian) as preamplifiers, because the 6SN7 in SRPP configuration didn't give enough “attack” to the power stage. Referencing many *GA* and *aX* articles, I finally came up with the circuit schematic (Fig. 1).

As you can see, there were no complications and no crazy ideas in this conventional design. There also was no feedback and no hum because of the special mounting of all the transformers

Precision Acoustic Measurements Require Precision Microphones



PS9200KIT™ USD

A complete IEC and ANSI traceable Type 1 Measurement Microphone System 2 Hz to 40 kHz, 15 dBA to 160 dBSPL

*½ inch capsule *4012 Preamp *PS9200 2 Channel PS

*AC adaptor *WS1 windscreen *SC1 die cut storage case.
Options: 511E Calibrator; 1 & ¼ inch mics; and Gain for DRA's MLSSA and other board level products.

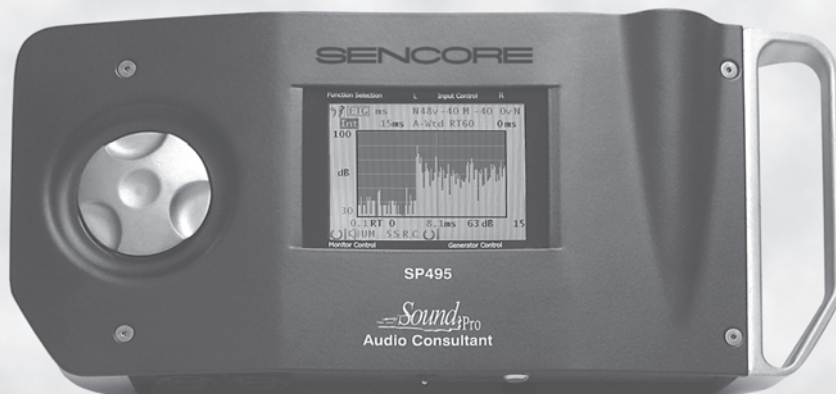
ACO Pacific, Inc.

2604 Read Ave. Belmont, CA 94002 USA
Tel: (650) 595-8588 FAX: (650) 591-2891
e-mail acopac@acopacific.com

ACOustics Begins With ACO™

The SP495 Audio Consultant will help you confidently install and analyze all your sound jobs.

Call 1-800-**SENCORE**
(736-2673)



Walk into a venue with the SP495 Audio Consultant and instantly begin making sound measurements, quickly make system adjustments, and confirm proper operation — all with complete confidence.

Visit our website: www.sencore.com

Quality • Stability • Total Business Solutions

SENCORE

3200 Sencore Drive • Sioux Falls, SD 57107

sales@sencore.com

1-800-736-2673 or 1.605.339.0100

Lundahl Transformers in the U.S.

K&K Audio is now selling
the **premier European audio
transformers** in the U.S.

New Lundahl Products

- Amorphous core tube power output transformers – SE or PP
- Special SE 845 output transformer
- Compact high inductance power supply chokes
- Tube line output transformer

High-End Audio Kits

- RAKK DAC 24bit/192kHz D/A Converter w/ tube output stage
- MM/MC Phono Preamplifier
- MC Phono Step-up Unit
- Differential Line Stage Preamplifier
- Minimal Reactance Power Supply
- Tube Microphone Preamplifier

For more information on our products
and services please contact us at:

www.kandkaudio.com

info@kandkaudio.com voice/fax 919 387-0911



**ELECTRA-PRINT
AUDIO CO.**

AUDIO TRANSFORMERS

- Single Ended
- Push-Pull
- Parafeed
- Cathode Follower
- Interstage
- Line Level Outputs
- Audio Chokes
- Moving Coil
- Step-up/down
- Low level input
- Phase splitting
- Silver windings
- Nickel core designs

POWER TRANSFORMERS

- High Voltage
- Filament
- Filter Chokes

Custom transformers built to your specifications.

Custom Amps and Pre-amps of our design.

Visa, MC & Amex

ELECTRA-PRINT AUDIO COMPANY

4117 Roxanne Dr., Las Vegas, NV 89108
702-396-4909 Fax 702-396-4910
electraudio@cox.net www.electra-print.com

PHOTO 2: Bottom view showing
connectors.

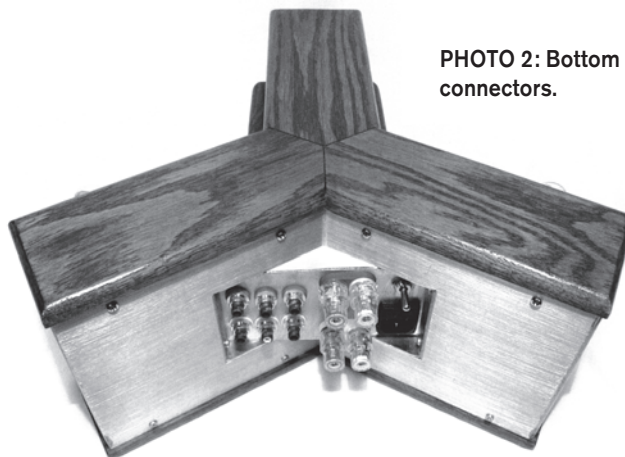


PHOTO 3: This versatile
amp can be oriented hori-
zontally or vertically.

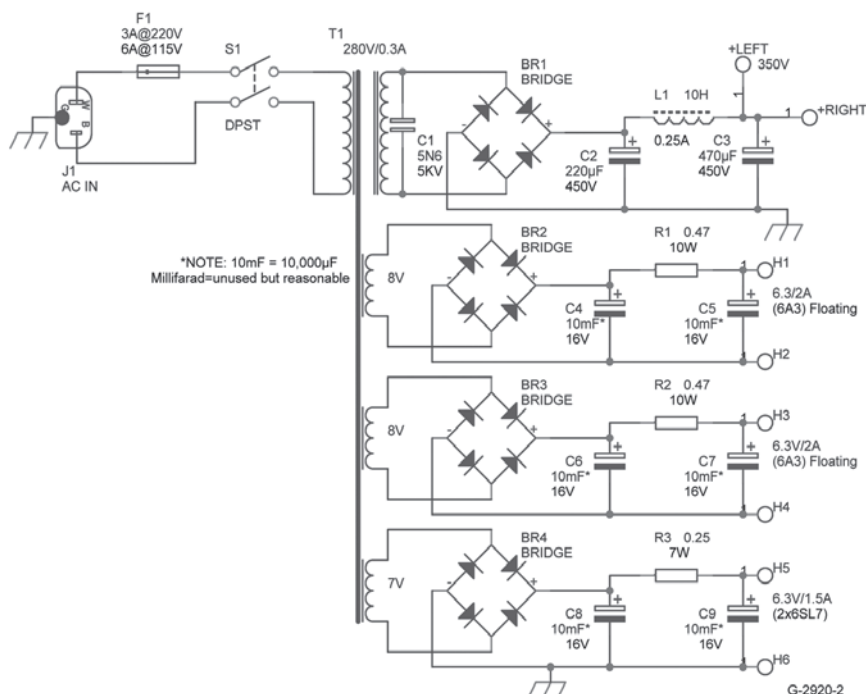
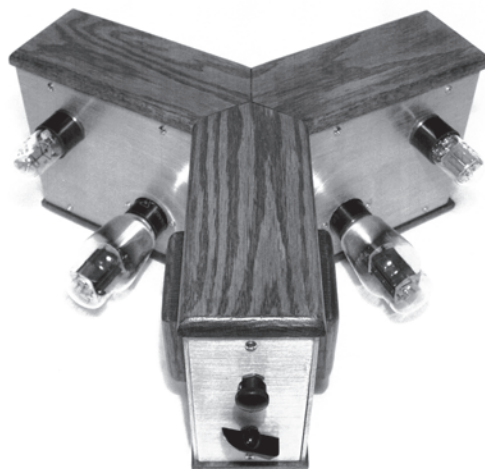


FIGURE 2: Two tubes per channel.

and the very good quality of all the parts used. For the power supply, I used super-fast diodes in all the four bridges, and for the high tension I did not use a tube rectifier because I promised to use only two tubes on each channel (Fig. 2).

Due to the big toroidal power transformer (Tim), and to the special electrolytic capacitors (Nippon Chemicon), I didn't find it necessary to stabilize another power source, but I rectified all the heater supplies. Hristos D. provided me with massive silver connection wire (for the signal paths only); Aris made the technical design; George P. dealt with many problems in the beginning; and I began to solder the RCs on the isolated military supports. As I said, we used only expensive and brand name parts, such as Alps pot, WBT connectors, Multicap caps, and Caddock, Siemens resistors. All these parts were wired point-to-point.

RESULTS

The results were pretty good for a minimal SE: 3.5W RMS, an 8Ω charge, and 22Hz to 65kHz. With ±1dB band of frequency, the input sensitivity was 1.2V RMS for all three line inputs. The general aspect was made with six oak pieces, cut as in the photos. The amp can work in two positions—vertically or horizontally. The knobs are old-fashioned (American radio transmission), and the in/out connectors are located down.

During construction, I experiment-

ed with different input tubes, such as 12AX7 (6H2P), and E82CC (12AU7), and the Star worked well enough with minimal parts changes, but the general "look" was not the same—the old-fashioned 6A3id wasn't matched with the modern miniature noval tubes!

In summer 2006, I carried the Star to *Sound/Image* magazine, and after the tests the staff fell in love with it. The mechanical and electronic construc-

tion was not easy, due to the strange space inside the three legs, but the sweet sound of 6A3 was ample reward. The WE-A3 has the best bass sound, but even with Chinese or Svetlana tubes the Star was working OK—with, of course, easy speakers, up to 90dB sensibility. Those willing to tackle this project can get detailed technical data for the chassis and all the mechanical data from me at arcosound@hotmail.com. **ax**

Your one-stop-supply

Authenticaps



The true and real FP mount capacitors that make your old amps sing again. Direct replacement, also for compact amps. Custom designs and dealer pricing upon request. Authenticaps fit 100% and are proudly made in Germany by FTCap

High Grade precision Caps

Metallized polypropylene. Due to a special fabrication technology our platinum quality High Grade film caps are almost free of parasitic inductance and offer brilliant sound experience in guitar-, audio-, crossover and all other uses. Rated 1500 V DC they are also excellent for repairs.

Available types range from 0.001 to 1uF / 1500 VDC and 2.2 to 100uF/630VDC Custom designs are no problem. High Grade Caps are made in Germany by FTCap



Mica and PIO-Caps
NOS, large variety
directly from stock

FTCap high voltage electrolytics radial axial, twin axial and screw mount up to 550V/600V Custom designs upon request



And even much more: We stock more than 5000 different types of tubes, sockets, books, cables, resistors, spareparts, transformers, chokes....

Transformer service: custom made designs, large variety from stock and upon request. OPTs made with 150 years of winder's experience on the job



Serving the world with tube technology since 1993: www.Askjanfirst.com, Frag Jan zuerst -Ask Jan First GmbH & Co KG, Mr. Jan Philipp Wuesten Preiler Ring 10, D-25774 Lehe, Germany, phone +49-4882-605455-1 Fax -2 fjz@askjanfirst.com <http://www.askjanfirst.com>

PARTS LIST

Part	Reference
C1	470nF 100V
C2	470µF 100V
C3	1µF 450V
C4	47N 450
C5	50µF 450
C6	100N 200V
C7	100µF 200V
J1-3	RCA JFem
R1	100K
P1A	100K Log, Dual
R2	1K
R3	1k5
R4	10K 2W
R5	900
R6	270k
R7, R8	47 3W
R9	820 7W
S1	2p3Pos Switch
TP1	H1
TP2	H2
V1	6SL7
V2	6A3