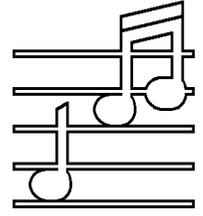


AUDIO BASICS



A MONTHLY NEWSLETTER OF AUDIO INFORMATION
VOLUME NINE NUMBER SEVEN JULY, 1990

More Thoughts about "Real Live Music."

We have received mail about Frank Jr.'s comments last month, and the most interesting letter came from an *Audio Basics* subscriber in Hong Kong. His letter (and the magazine clipping attached thereto) is worth repeating here.

Dear Mr. Van Alstine,

The latest issue of *Audio Basics*, containing Frank Jr.'s piece on unamplified music, arrived during a week when I and my fellow Harvard alumni in Hong Kong were hosting two *a cappella* singing groups — a group of men from Harvard, and another group of women from Yale (that's right — women from Yale!). We had them in a small theater — it was originally the local milk company's ice house — and of course completely unamplified. The whole experience — of immediacy, or "imaging" in the sense of being able to trace each of 14 voices back to its owner — was great. And yet, while we were able to fill this small theater of 100 seats, I fear that had we reached for a bigger arena we would have failed to fill it. The fact is the public is most to blame for the lack of opportunities to hear real music — they won't show up.

Meanwhile, as shown in the following clipping, the impresarios keep trying to find ways to turn classical music into a stadium filler.

A blast from the past. (*From the July 7, 1990 The Economist*)

"CLASSICAL music, bloody loud"

So said the posters for the Power Concert at London's Hammersmith Odeon on June 26th, when works by the great and good were pumped through a 30,000-watt amplifier system. The organisers were Virgin Records; the perpetrators were the London Chamber Orchestra, which has had a history of wackiness since it started in 1921, and which now intends to open classical music up to a wider audience.

In this, at least, they succeeded. The Odeon was besieged. The audience (leather-jacketed executives, smartly dressed students) smoked continually; the start was delayed by 45 minutes. Concert T-shirts, posters and compact discs were on sale, everything emblazoned with the "Power emblem", a strawberry. In the glossy souvenir programme a Virgin marketing chief talked of "criminally elitist barriers" surrounding Mozart and Co. Up to now, of course.

Inside the Odeon, the 30 odd musicians — dressed in anything but black tie and tails — rattled out a package of favourite tunes from favourite composers. The whole thing was disappointingly quiet. More remarkable was the lighting: from a cheerless blue wash for Albinoni's "Adagio", to a blaze

of rotating spotlights during Elgar's "Introduction and Allegro". Wispy clouds of dry ice drifted up during the quieter moments. Not all rock-music's finest traditions were observed: no violins were smashed against speakers.

Horrid, said the classical-music reviewers to a man. Yet the organisers, undeterred, are planning a Power tour for the autumn. There is method, of sorts, in their madness. Sales of classical records are booming; most of the buyers are first time listeners, largely inspired by the World Cup theme tune or scores from television commercials. On the other hand, fewer and fewer people are going to classical concerts. According to Virgin's researchers, such concerts are a big disappointment for an audience weaned on compact discs and Eric Clapton gigs: above all, the music is not loud enough. Whether sitting at home or at a concert, modern man expects to hear his music through an amplifier. And a powerful one, at that.

So, there is a deep significance in your headline this month — "Live Music is Possible, IF You Attend the Right Theater." IF you find a theater that presents real music, and IF you attend, and get your friends to attend, and attend regularly, then the theater will thrive, and real music will be saved. Otherwise, get ready for "classical music, bloody loud."

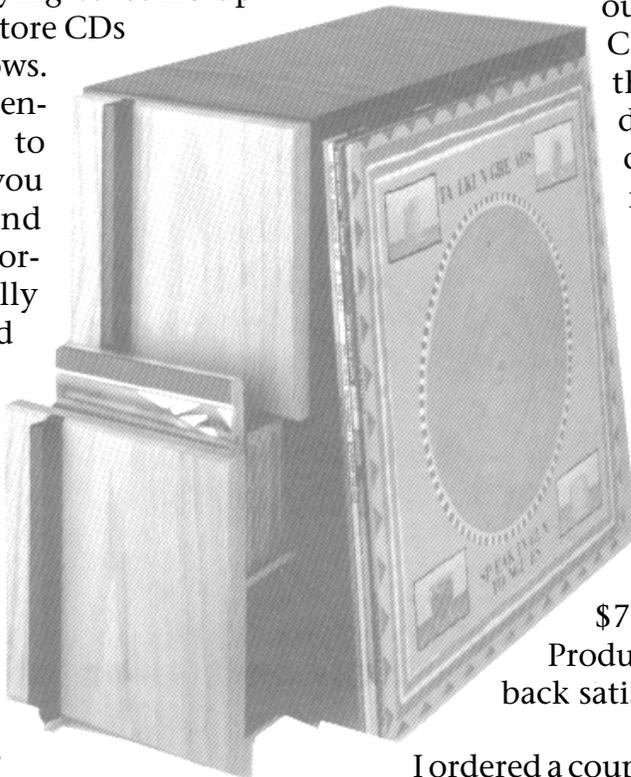
Best regards,

J.R. Williams

A Useful CD Storage System

If you are like me, dear reader, you are going crazy about now trying to come up with a good way to store CDs as your collection grows. You probably have plenty of shelves built to hold records and you have probably found that almost no CD storage rack fits usefully into that dedicated record storage space. The CD racks are either too big or too small and lots of space is either wasted or cannot be used.

I have finally found a very nice "cure" for this problem from Hill Products Inc., PO Box 1015, Hillsboro, New Hampshire 03224 (phone 1-800-247-2018). They build a stor-



age system for Compact Discs that is designed to fit perfectly into record storage space. Each CD-BOX™ has two slide out drawers that hold 30 CDs (60 per cabinet) with the label end up. Each drawer has two removable dividers for further organization if desired. Each cabinet is 12 3/4" high x 14 3/4" deep x 6 3/8" wide. A variety of finishes are available for the front panels: maple, light or dark oak, teak, walnut, and black lacquer. The list price ranges from \$49.95 each for maple up to \$79.95 each for teak. Hills Products offers a 30 day money back satisfaction guarantee.

I ordered a couple of samples for my own home system. I am satisfied – I ordered twelve more. We think you will like them too if you need compact compact disc storage.

New 6GH8A Driver Tubes for the Super Seventy Amplifier

We have bad news and good news this month. The bad news is that the 7199 vacuum tube is discontinued and is no longer available except as residual old stock at a very high price. This tube was the heart of the Dyna St-70 amplifier and our Super Seventy upgrade thereto. It was a special design, a high voltage gain pentode first section and a high current gain triode second section, and it was supposed to be built to a low noise specification too. The only similar tube with the same pinout is the 6AN8A which is used in the Dyna MK III, but this tube is in short supply too and is not a viable long term replacement.

The good news is that Geoff Pomeroy, a consultant for John Peterson of Sound Values (Stereo Cost Cutters) has completed an extensive tube search and evaluation for Sound Values because they too need a replacement for the 7199 to keep their St-70 kits in production. Mr. Pomeroy notes that although there are many other nine pin pentode/triode tubes available, none are plug-in replacements for the 7199 because they all use different pinout configurations. He narrowed his evaluation to those tubes falling into just 2 pinout categories for the sake of broad replacement practicality. Then he evaluated the six tubes (6EA8, 6GH8, 6HL8, 6JW8, 6LM8, and 6U8) that all use the 9AE pinout because he was familiar with the performance, application use, and availability of some of this family. He actually ran distortion and open loop gain tests with these six tubes in a stock St-70 amplifier with the pinout changed to accommodate this tube family.

More good news is that the most available tube in this family, the 6GH8, actually provides lower closed loop harmonic distortion, lower noise, and higher open loop

gain across the frequency range than the 7199. Because it is widely used as a consumer television tube, it is available at a much lower price than the 7199. Interestingly enough, although it does not have a noise specification as does the 7199, the samples tested were actually significantly quieter. This is because the remaining dregs of 7199s simply didn't meet their noise specification. Mr. Pomeroy then experimented with reductions in the internal high frequency compensation of the stock St-70 circuit in the interest of further reducing distortion - but he discovered (as we knew) that doing so decreases the stability of the amplifier, a very undesirable trade-off.

John Peterson provided me with a copy of Mr. Pomeroy's very thorough report, and we proceeded to evaluate the use of the 6GH8A tube in the Super Seventy. We looked at the amplifier's internal error correction signals in addition to the output distortion, and the best news of all is that the 6GH8A makes the Super Seventy work much better than ever. The open loop linearity is significantly improved, the correction signals have a much more desirable shape, and the noise is as low as with the best "cherry picked" set of 7199s I still have. Because the tube has better drive capability in our circuit application, we were able make a low frequency compensation change that significantly improves bass linearity. The Super Seventy is a much clearer amplifier across the band with no negative trade-offs at all.

Thus we urge you to buy a set of 6GH8A tubes from Sound Value/Stereo Cost Cutters (I don't know their price - call them at 1-614-889-2117 to find out) and make the following circuit changes to your Super Seventy. If you are still running a stock old Dyna St-70 driver board I have included the diagram of the necessary foil cuts and jump-wires to convert that to 6GH8A use too.

PC Card Changes Required for Use of 6GH8A Tubes in Super Seventy & St-70

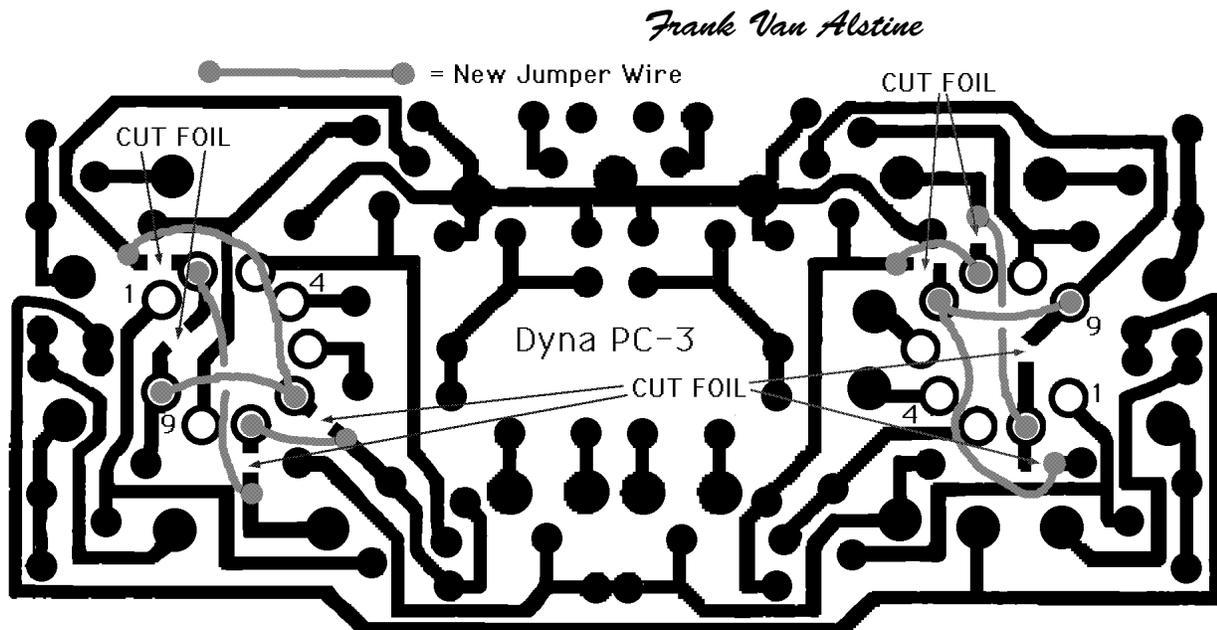
1. Note that once these changes have been made, 7199 tubes cannot be used, so get a set of 6GH8A tubes first. *Note that we are now supplying a pair of 6GH8A tubes in the Super Seventy rebuild kit at no extra cost and have already made the appropriate circuit board changes for you.* The kit, with 6GH8A tubes, is still \$150.00.
2. With the amp turned off, unplugged from AC, and cold, remove the top and bottom cover and the tube set keeping track of which sockets the output tubes were removed from.
3. Turn the amp upside down and locate the PC card foil for the Left and Right 7199 tube sockets as shown in the diagram on the next page.
4. With a Moto-Tool and a sharp burr tool, make the four foil cuts per channel as shown in the diagram. You will be isolating tube pins 2, 6, and 7 from the rest of the circuit.

Now you will install four short insulated jumper wires per channel. Solder them to the foil paths as

indicated by the black dots. Keep the wires short, but not touching the foil except where soldered.

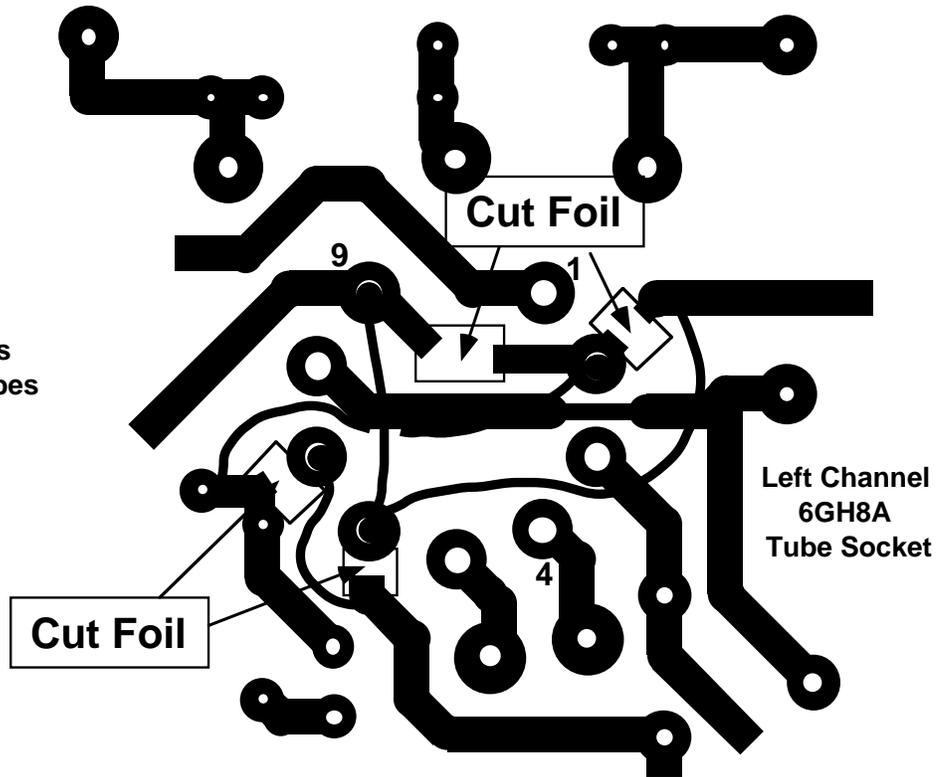
5. Install a jumper from pin 9 to pin 6.
 6. Install a jumper from pin 7 to the foil trace separated from pin 6.
 7. Install a jumper from pin 6 to the foil trace separated from pin 2 (outside of pin 2).
 8. Install a jumper from pin 2 to the foil trace separated from pin 7.
- Repeat for the other channel.
9. Remove C5 from each channel (.047 μ F/400V and replace each with a 0.33 μ F/250V or 400V capacitor (now supplied with the Super Seventy rebuild kit).

10. With a stock St-70 circuit board and either a stock or our modified circuit, make the same changes, referring instead to the diagram below.
11. Install the new 6GH8A tubes, install the power tubes back into the sockets they came out of, check the bias setting when you turn on the amp (it should not have changed) and enjoy a much more robust and dynamic amplifier.



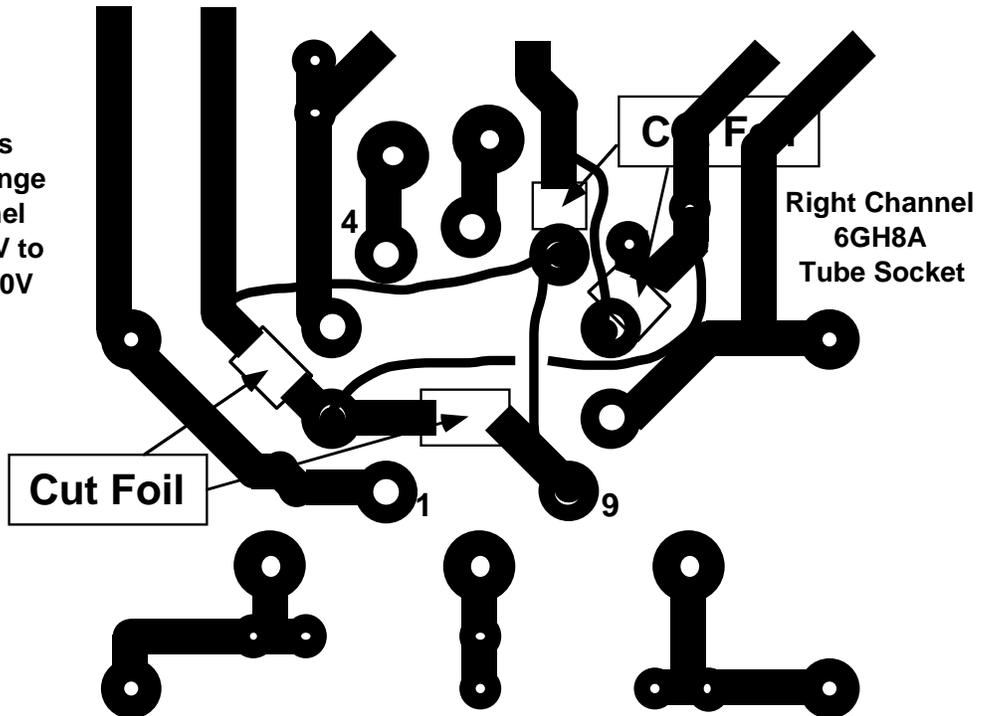
Foil Changes Necessary at tube sockets to convert Dyna St-70 PC-3 board for use with 6GH8A tubes instead of 7199 tubes. Four foil cuts and four jumper wires per channel are required. FVA 8/1/90

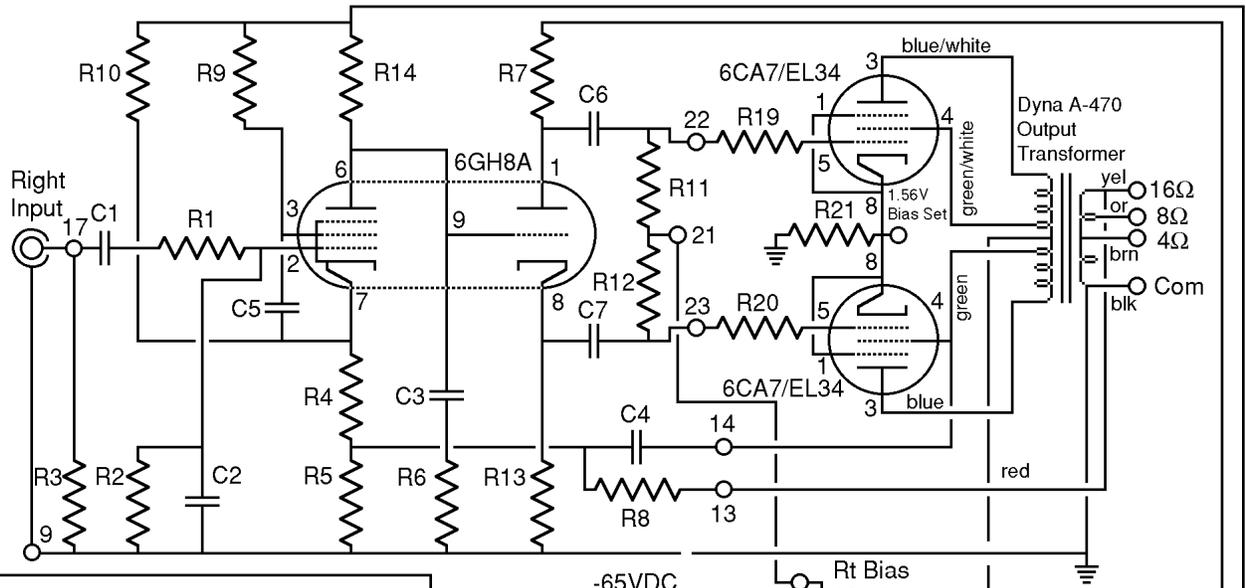
Note:
**6GH8A tubes
 MUST BE USED**
 after these changes
 are made. 7199 tubes
 cannot be used
 because socket
 pinout has been
 changed.



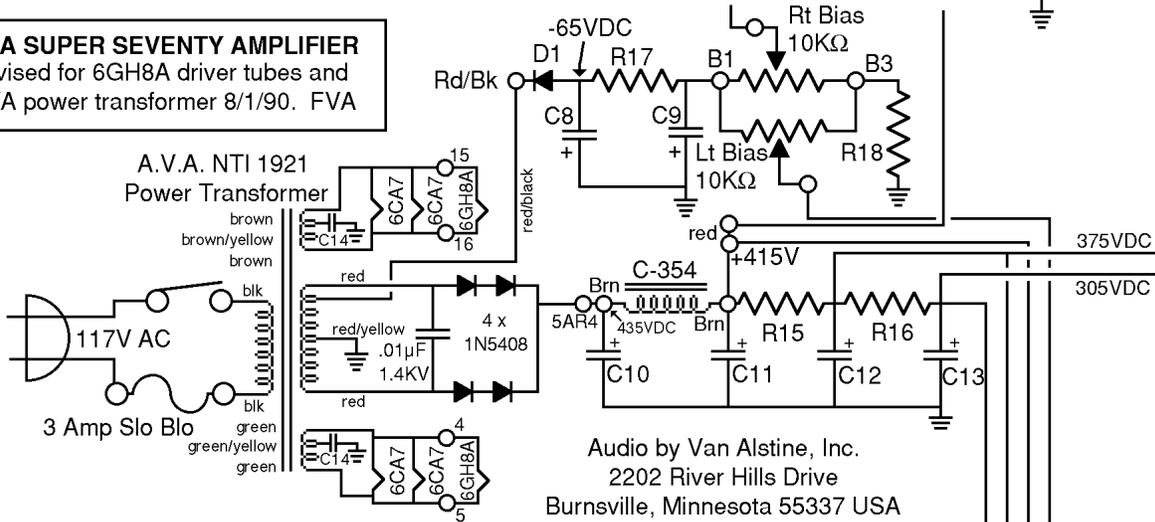
Foil Side View of AVA PC-189 Super Seventy Circuit Board
 Diagram showing four foil cuts and four jumper wires needed per channel
 to convert circuit board to use 6GH8A driver tubes instead of 7199 tubes
 for higher performance and better future tube availability. 8/1/90 FVA

Note:
 For improved bass
 performance, change
 C5 on each channel
 from 0.047 μ F/400V to
 0.33 μ F/250V or 400V





AVA SUPER SEVENTY AMPLIFIER
revised for 6GH8A driver tubes and
AVA power transformer 8/1/90. FVA



A.V.A. NTI 1921
Power Transformer

Audio by Van Alstine, Inc.
2202 River Hills Drive
Burnsville, Minnesota 55337 USA

