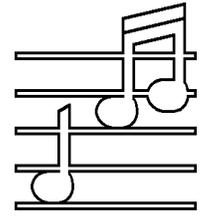


AUDIO BASICS



A MONTHLY NEWSLETTER OF AUDIO INFORMATION

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Audio Engineering vs. Audio Magic, Continued.

I can tell the information is not getting through when I read an article in another publication dealing with “mods” for the B&W 801 Matrix loudspeaker and find that the author wants to know if anyone has had experience with the “Van Alstine mod” and whether it sounds as good as rewiring the speakers with seven ply radial tread octopus wire and painting all the edges green (or whatever). When you cannot tell magic from technology, you get sold some very high priced magic.

Our fix for the 801 is not magic, it is based on 8th grade general science observations. The first observation is that two bar magnets in a row form one longer bar magnet. Don't you remember playing with the magnets and the iron filings? The second observation is that if you wind two coils of wire on a magnet and put an AC signal into one of the coils, you get the signal out of the other coil – transformers exist! Our 801 “magic mod” is simply observing the blunder in the speaker's crossover layout – that two big inductors (coils of wire wound on magnetic cores) were in line with and close to each other. Thus, the two coils were not the crossover inductors that B&W intended, they were actually the crossover transformer that was not intended – sending all the midrange signal to the woofer and all the bass signal to the midrange. *Audio* magazine noticed that the bass crossover coil was saturating but did not notice why – it is essentially seeing twice the signal it was designed for! Evidently not very many people have passed 8th grade general science in recent years.

We get pretty tired of dealing with engineering and making statements such as $2 + 2 = 4$ and getting responses from the audioflake jungle such as, “well, that's your opinion.” So its back to the basics, dear readers. Lets continue with our observations regarding good audio engineering.

Component Compatibility is a Loaded Issue.

You will read lots of reviews informing you that speaker A sounds best with amplifier B and so on. The assumption has been made that by mixing and matching the musical virtues of various components you get the best possible system. Then, once it has been established that a given product is “musically right,” only those components that

sound good when used with the reference are also assumed to be musically accurate. In a similar manner, some products are written off by the experts because system imperfections are heard when they are used with the previous subjectively picked standards. For example, 801 speakers prior to the Matrix series are considered by many authorities to have muddy bass response

because the bass does sound muddy with many so called audiophile grade amplifiers.

What a load of baloney!

Unless it can be proven that the reference amplifier has absolutely flat frequency response into a wide variety of loads, that it has a resistive input impedance that does not change dynamically even when the amplifier is clipped, that its harmonic and IM distortion is inaudibly low into complex loads, and that it has no overshoot at all at low or high frequencies (that it is critically damped so that it can only reproduce signals, not make signals), then one does not have a reference amplifier even if it makes sounds you like.

For years many audiophiles have used underdamped and overpriced vacuum tube power amplifiers as references. The bass response could most politely be described as "tubby." Actually one does not want to measure the low frequency transient performance of a big vacuum tube amplifier into a complex load at high power because the waveform will look so awful that one might not like the sound any more at all. It is much better to "be sure" that a B&W 801 has muddy bass response than it is to blame one's pet amplifier, isn't it?

B&W finally got smart and built the Matrix series to be so efficient (87 dB for one watt out at one meter) that so little power demands were made on the amplifier that deep bass notes could be played relatively cleanly in spite of how badly the amplifier behaved at high power at low frequencies. So now the reviews say that the 801 Matrix, unlike earlier models, has great bass response. Of course you are still supposed to use the 801 on an expensive speaker stand. What does the stand do? It reduces the bass, of course. Why, because that pet amplifier

still had an underdamped bass boom, even when it isn't worked as hard. So, pay a bundle for a speaker that plays the best fundamentally clean deep bass available in a rational package, and then pay some more for speaker stands to take bass away. You are really getting good advice, right!

Unfortunately it is likely that when you are subjectively mixing and matching different sounding components to get just right overall system sound you are building another leaning tower of Pisa. When you pick a warm and mellow preamp to go with your thin and bright moving coil cartridge you are selecting complementary problems, not components free of problems. When you are told, "this is a rather analytical speaker, so you need a really fine and mellow tube amplifier on it" think instead that what you really need is some other loudspeaker. When you are told that a B&W 801 has muddy bass, what you really are being told is that the amplifier trying to drive the speaker has muddy bass.

The way to ensure that you end up with a good sounding system is to select each component to be neutral, transparent, and uncolored. A good amplifier should be happy driving a wide variety of loudspeaker types and should let you isolate speaker flaws from amplifier limitations. A good speaker should be musical and neutral with the resolution to let you hear the characteristics of different amplifiers (and you should choose the amplifier with no characteristics at all). You should never have to pick one extreme sounding piece to contrast the characteristics of another component—then you can be pretty sure both are bad. A good test for electrical components is to listen to how they react to different brands of interconnect cables and speaker wires. With truly great electronics, you won't hear the sound of the wires at all.

We design our electronics knowing they have to work well for you in the real world. We don't know what our components will be connected to, what the source and load impedances will be, or what shades of out of band distortion your associated equipment and source music may contain. Thus we design our equipment to be gentle on sources – all have simple passive resistive input impedances that do not vary, even when the equipment is driven into clipping. We design our equipment to drive complex loads without misbehaving. We design our equipment to not distort on distortion. We don't care how bad anything before or after our equipment is, our components won't make the situation worse. They may, however honestly tell you that you have a component that should be replaced – see the report on Denon CD players later herein.

We have always known that big B&W loudspeakers have excellent high definition bass response because we have always used them with amplifiers that reproduce bass without sludge. Our first test for a power amplifier is to turn it on and off on the test bench and see how much the centerline bounces around. That test alone will predict whether there is a chance of music or mud at low frequencies. Centerline bounce means the amplifier will generate low frequency output with no low frequency input at all! A neat trick – but not music.

We suggest that the reference components must first be objectively correct (no “but we like the sound” allowed unless we can first be reasonably sure that what we like is what the equipment is not doing). Then when you substitute equipment that does measure off center we suspect it will then sound off center to you too. We have been doing it this way for years and are getting consistent results. With some reasonable objective standards applied before the listening

tests, we build straight towers, not leaners. We suggest you not acquire equipment with complementary problems, but that instead you acquire equipment with no problems at all.

More on Grado Headphones

I have a bit more information for you regarding the prices of Grado headphones and the future availability of lower priced models.

Right now, three Grado models are available at \$395, \$495, and \$595. These are in the Grado Signature line and they are beautifully finished with machined aluminum housings. The top model has phase reverse switches on each headphone, the lowest priced is built with drivers that don't quite meet Joe Grado's personal specifications but are still very good. We are not a Signature line dealer and have no plans to sell these phones because –

Much lower priced versions of these best ever headphones are coming soon in the standard Grado product line. They will be built with injected molded plastic parts instead of metal, but will use the same technology in the active drivers. I have been assured that the sound quality is so close to the expensive models that most people will not be able to tell them apart. They are supposed to be ready for the market in June.

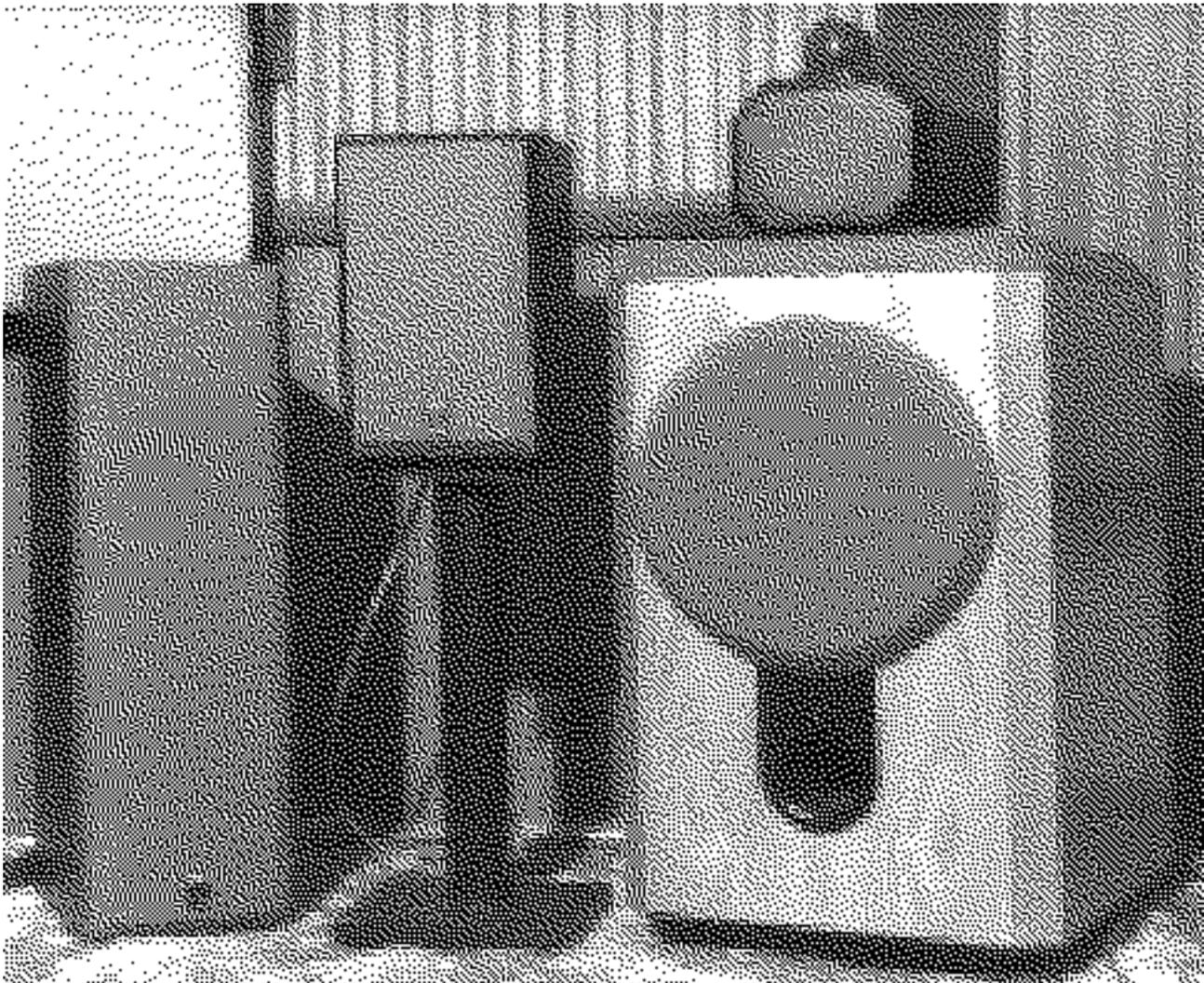
What you will be able to tell apart is the price. The standard Grado headphones will be priced in the ballpark of \$150, \$200, and \$250 (pricing is not firm yet). I do not have all the details on the differences between the models yet, but I am expecting very good things from even the lowest price model. If it performs anywhere close to the Signature standards, it will be an absolute best buy.

I definitely will be carrying the standard Grado headphone line as soon as it becomes available. For lots of detail about the construction and sound of the currently available Grado HP-1 headphone, read the May, 1991 issue of *Stereophile*. They confirm what I said, but they do it in about 8 pages of small print. It does make for interesting reading.

New Low Cost Stands for the V201s

You are supposed to first be looking at the speaker stands in the picture below, not the array of speakers themselves. The stands make the low priced B&W V201 a much more attractive looking *and better sounding* loudspeaker.

B&W of England has not supplied a low priced stand for the smaller speakers so B&W of North America, the Toronto based importer, has filled the gap by tooling new stands themselves. They come as a pair of disassembled three piece sets. Two long screws hold the 6" x 6" top plate to the center post, two more hold the 9.5" x 9.5" base plate to the post. The post is 19" high and has a rectangular cross-section with a curved front face. Spiked feet press fit into the base. The construction is black vinyl over particleboard. The overall effect is solid and very attractive - making the V201 look like a much bigger and more expensive speaker.



The speaker itself is affixed to the top plate by several spots of putty like non-hardening adhesive. This is a very good idea. First, the speaker is safely stabilized on the stand without screw holes or damage to the finish. It can be removed. But most important the mounting damps the speaker cabinet and makes the whole assembly more massive. The V201 simply sounds clearer and purer on the stands with better bass response too. Not only do you eliminate unhappy shelf acoustic reflections and vibrations, but you put the speakers at the proper relationship to you and away from room boundaries. We are very happy with the way these stands work.

The price is just \$50.00 per pair. The retail price of the V201 speakers (shown on the stands in the standard black ash vinyl finish) is \$270.00 per pair. As an introductory special, we will supply the V201 speakers *with the new STAV-201 stands* for \$258 per pair with no shipping charges in the continental 48 states. We bet you won't be able to think of a nicer graduation present for that student you like. Call us with your order now.

Consider too that these stands can work for the CM1 speakers and the DM550s and other older models too. There is a second version available for slightly larger speakers. The STAV-202 is 4" shorter (a 15" post instead of a 19" post). They are the same price and are useful with the V-202 speakers, the DM310 speakers, or many of the older bookshelf systems.

Now consider 2 more items in the picture.

First, the speaker on the left is the new DM620, an absolutely lovely and musical floor standing speaker. It plays big and with no box colorations or rough edges at all. It uses B&W's new metal dome tweeter, an active synthetic cone woofer, and a passive

synthetic cone woofer. Our price is \$680 per pair delivered in the lower 48 states. It will make a big system upgrade for any of you with older low priced speakers of most designs. Because it is 90 dB efficient and a simple 8 ohm load it demands little from your amplifier. You will be pleased with the results even with a small receiver as a source. Are you still using old AR, KLH, or Dyna speakers because most so-called modern speakers are not improvements? You will be surprised how much you really can improve your system with a set of DM620s. They reproduce music, they don't make "hi-fi" sounds.

Next, if you have been thinking about the very best there is, consider the speaker on the right – my demo walnut finish B&W 801 Matrix loudspeaker.

My pair has been set up for about 30 days and is in absolutely perfect condition with all the shipping materials and paperwork and a new five year warranty.

Our price on this demo set only, including shipping to you in the continental 48 states and also including our crossover improvements is \$4500.00 (plus 6% sales tax for deliveries inside Minnesota). The retail price is \$5900 per pair and we expect that price to rise in June. If you have been thinking about 801s, now is the time to act because I doubt if we will have them available again priced this advantageously. Call me now to insure that they are still available and own the most musical and most dynamic loudspeakers you have ever heard. They are long term keepers.

Denon CD Players Give Us Problems.

I like best to tell you about the really good audio products that I run across that can be useful to you, whether we sell them or not. I don't like having to tell you about prod-

ucts that we find troublesome, because it means we are going to make waves and make somebody unhappy. But, when a product works so badly with our equipment and speakers that it starts to cost us system sales, it is time to tell you about it. Denon CD players seem to be that kind of a product.

Denon CD players look nice, they are well built, they have fine displays and buttons, and the top models even have variable pitch, but – with our electronics and big B&W speakers they simply do not play music the way we want. We had one complete system returned because the user thought the big B&W speakers sounded "clanky and boomy" on piano music. He absolutely refused to consider that his Denon CD player could be the culprit. It had to be our fault - his opinion cost us a whole system sale and the client a considerable restocking fee.

Soon thereafter we set up another complete system for a local client with an Ω mega 400 power amplifier and B&W 801 Matrix speakers. The client was going to furnish his own CD player from another source because ours do not offer remote control volume adjustments. Because we were doing the set-up we did bring along an insurance policy – our Ω mega CD player – we wanted to be sure that we could get great music at the client's location in spite of what his other equipment might be doing. It is very fortunate for us that we did bring our CD player along because the client had a top of the line Denon CD player.

We hooked up everything using all our own electronics and CD player first and got great music – powerful deep bass, clean and extend highs, and lots of space and air. Then we substituted the Denon CD player and the results were dismayed! The bass became very muddy and boomy (now we

understand why so many B&W 801 Matrix owners – who don't use our electronics – buy expensive stands for the speakers to reduce the bass response). The highs compressed and became hard. And piano music became clanky and boomy – the system replicated the exact colorations that had so confused the earlier client. I have heard many inexpensive and some expensive CD players that give "digital sound" a bad name – players with harsh bright highs and no life or musicality at all. But never have I heard a CD player interfaced with our electronics and big B&W speakers that resulted in as muddy a bass and as oppressive a mid-range coloration as we got with the Denon CD player that day in that system. But this time we had a system cure for the client to consider. He didn't have to believe us when we suggested that the Denon wasn't a good match with the rest of the equipment. All he had to do was switch CD players and believe his own ears. We did not lose a system sale, in this case we gained a CD player sale. The client wanted great musical results in his system more than he wanted variable pitch and remote volume control. We both won. He even kept the Denon CD player for its original intended use. He is an amateur musician and the variable pitch feature is useful. He could tune the Denon to his instrument for "play alongs." But for serious listening it is our much less expensive Ω mega CD player that gets selected.

Although we (and our clients) feel that normally our electronics tend to get the very best out of associated equipment, our experience with Denon CD players interfaced with our equipment is not at all satisfactory. We suggest that if you insist on a Denon CD player, then you better stick with Japanese amplifiers, preamplifiers, and speakers too. We will tell you up front that a Denon CD player used with our electronics and choice of speakers is not going to make you happy.

The New A.V.A. Catalog - Finally!

Our new catalog is at the printer and we should have it ready to mail to you about the time you are reading this. It is far too expensive for us to mail out on an unrequested basis – 32 pages of text and photos on coated stock plus the cover at about \$3.00 each with postage. It does explain and show our products better than ever and it is free of charge. Call or write us now if you want a copy. If you have requested a catalog recently you are already on the list without needing to ask again.

Used Equipment

Fet Three Pat-5 with phase inverter, \$295. A very clean full function preamp.

Save \$100 on an Ω mega 240 or Mos-Fet 240, we have a good used Dyna St-150 chassis that can be built as either. Call us for details.

Frank and Darlene Van Alstine