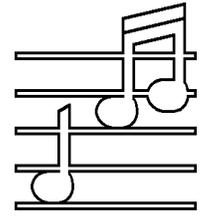


AUDIO BASICS



A MONTHLY NEWSLETTER OF AUDIO INFORMATION
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Free Compact Discs!

What – You are not a subscriber to *CD Review* (formerly *Digital Audio*) yet? You did not know that each month this magazine features coupons good for free compact discs from many outstanding sources? (Well almost free - you get to pay all of \$3.49 shipping and handling each). Some months there are more than one free CD offered. Some are samplers and many are complete first rate CDs.

When I say free CDs from outstanding sources I mean offerings such as *Bob's Diner* from DMP, *Ties & Tails* from ProArte and *Hidden Harmony* from White Swan. So far this year I have acquired twelve very nice CDs through *CD Review* for a grand total of \$39.43.

Right now a one year subscription to *CD Review* costs \$19.94 and you also get a free CD for subscribing - *Henry Mancini's Monster Hits* - a collection of his thriller movie sound tracks. The special CD has its label printed in glow in the dark ink (really!) - what a deal - no it doesn't make it sound better or help the laser find the pits in the dark.

The subscription address is CD Review Monster Offer, Forest Road, Hancock, NH 03449 and the free glow in the dark CD offer ends December 1, 1990 so get with the program now.

The magazine is well worth your money even without the free CD offers. It provides hundreds of unassuming CD reviews each month in language you and I can understand (no quibbles on what shape of french cuffs the conductor wore that night or other nits picked so fine that I gave up on classical record reviews in most magazines long ago). The sound and the performance are both rated on a 1 to 10 scale and they are not afraid to call a dog a dog and usually I am in agreement with their ratings. It is a source of information you should get each month. Get your subscription in now.

Five New Speakers from B&W

We are now getting our first samples of B&W's newest loudspeaker designs in and set up and there are some real good news here – for the most part better sonic quality and value for the money than ever in spite of a dollar decreasing in value against English currency. Note that the prices quoted are the suggested list price for the speakers

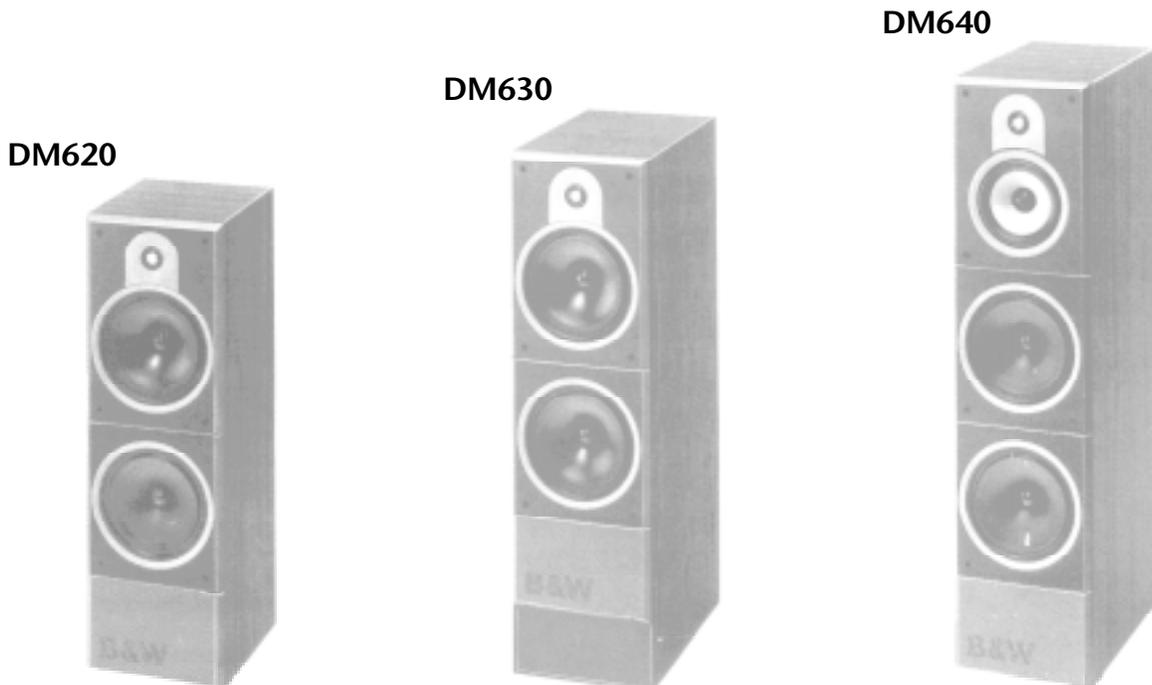
for comparison purposes. In many instances we can offer much lower than list price to you. Call us for details.

The entire 500 series of speakers has been replaced. A new model 310 two way bookshelf unit joins the line at \$490 per pair. The 310 is an upgrade of the DM560 performance level at this price range because it has a polypropylene woofer instead of the

paper cone woofer of the DM560 and has improved range and power handling and dual sets of terminal posts for bi-wiring. Unfortunately, the B&W made stands for the model 310s are not being imported because they are too expensive. You will need to find some good general purpose stands for these speakers if you wish to use them on the floor. At the low priced end of the line, the small two way V201s and the normal bookshelf two way V202s remain in production at \$270 and \$390 per pair.

The bigger 500 series speakers have been replaced with the new 600 line - three new 9.3 inch wide floor standing towers of very impressive quality and value. All feature dual terminal sets for optional bi-wiring and bi-amping. See our editorial in the April, 1988 issue of *Audio Basics* for the facts regarding bi-wiring, in general its ludicrous to do it unless everything else in your system has been perfected first. The "smallest" 600 series tower is the DM620, a 29.2 inch tall three driver passive radiator design. It has the newest metal dome tweeter (as do all except the 200 series), a polypro-

pylene 8 inch mid-woofer and an 8 inch passive radiator woofer. It has 90 dB sensitivity and 8 ohm impedance (an easy load to drive). Its list price is \$800 per pair. One of our favorites is the 33.5 inch tall DM630, a bigger three way design with all active elements (the metal dome tweeter and two 8 inch polypropylene bass/midrange units). This speaker is 91 dB efficient and is also an 8 ohm load. It features the **user tunable bass system** first perfected in the Acousti-tune woofer. The speaker comes with short and long user installable port tubes and a plug to block the port completely. Out of the box, the longer port is installed, but to reduce the bass response for a difficult room or a tubby amplifier the user need only to spend about 5 seconds removing the long port and installing the blanking off plate. If the room is solid and the electronics stable and free of their own resonances and strange bass noises then the short port can be used for significantly extended clean bass response - bass people usually pay more than twice as much for. The list price is \$1100 per pair (our price is much less). The sonic quality is very very



musical with a much extended dynamic range and purity over the bigger 500 series speakers and a much greater bass range. The 630s have the look, feel, and sound of \$2000 class British speakers and will make almost any audio system more enjoyable. The biggest 600 speaker is the 38 inch tall model 640. It offers the great Kevlar midrange diaphragm formerly used in only the most expensive B&W models famous for their clarity and quickness. The 640 plays even bigger than the 630 with a midrange definition close to the quality of the four times more expensive 801. Its bass is tunable too, with two user adjustable ports and plugs for the ports to adjust the bass for room conditions. With two active polypropylene woofers, the Kevlar midrange, and the metal dome tweeter, this speaker handles gobs of power and plays very solidly in bigger rooms. It is attractive and impressive at \$1500 per pair.

These "normal" new B&Ws are great news for you and us, but now on to a more complex story, and how we overcame a vexing problem to realize the potential of a sophisticated and creative new high end speaker from B&W.

The Matrix 803 (Improved by A.V.A.)

Early this year you should remember the series of articles we wrote regarding our (and Tom Lewitt's) discovery of engineering errors in the B&W Matrix 801 crossover and our detailed engineering redesign curing the problems. Before our redesign, the 801 Matrix actually sounded about as recently reviewed in *The Absolute Sound*. They heard every problem the crossover had and downgraded the speaker for these problems. Of course they didn't know why the speaker didn't behave as well as they would have liked and didn't know how to fix the problems. Because we are engineers who

can listen, design, improve, and write, rather than just being listeners who can write, we didn't just write about what we didn't like, we righted the problem. Any of you who have actually made the corrections we suggested know we know what we are talking about. Too bad almost all of you calling about the crossover fix had only one question, "What brand of wire should I use to reconnect the coil to the PC card." We got so little useful feedback (unfortunately none at all from *Stereophile*) that we did not produce a complete new crossover board solving all the magnetic coupling and interaction problems between the coils. We

Matrix 803



fix the speakers free of charge when we sell them to our clients, but we won't turn out a new crossover board for those that only want to know what brand of wire to use. The answer to the question is obvious, it does not matter. There are hundreds of feet of small gauge plain old lousy magnet wire wrapped around that coil, what you use for the last six inches is absolutely immaterial as long as it is an insulated hookup wire.

Anyway, our fixed 801 Matrix speakers now play music the way the *Stereophile* review says they do (not the way theirs actually did without our fix). Anyone claiming that the speaker has a better midrange and top end with the stock "bass filter" in circuit (as the reviewer did) needs an ear cleaning job or has awful audio electronics. The bass filter is nothing more and nothing less than an inexpensive general purpose op-amp with about a 20 dB bass boost built in at about 18 Hz. We call it the "ghetto blaster" box as it adds bass boom and decreases midrange and high frequency definition.

To reiterate, to make the 801 play music you fix the crossover so the bass driver doesn't have to play midrange and so the midrange driver doesn't have to play bass, then you remove the tweaks from the crossover probably put there to make up for the problems. Now the response is flat and without audible bass or midrange peaks. Now you throw away the bass filter box (you don't need it when the speaker is working properly) and use the speaker on its floor casters as it was designed to be used. No, we are not using the speaker in a boomy barn of a studio so we don't need to decrease the base response we paid so much for by paying more for a stand. It's a floor standing speaker. We pay no attention to people making different expensive bass filters or exotic extra cost stands. They haven't

fixed the basic crossover problems in the first place so they have no idea of the way the speaker is supposed to work. Lunacy abounds.

Unfortunately, now that we have the 801 sounding like live music the price has been raised again (now \$5900 a pair list!!!). Yes, I know the dollar buys less pounds these days, but I am sad when a great product gets priced far too high to be considered by many of my clients. **Thus when B&W released the new 803 Matrix at half the price (\$3300 a pair) we hoped they had a change of heart and had produced a more affordable 801.**

The new 803 is a great looking speaker. The grill has color coordinated anodized aluminum extrusion side pieces that seem to seamlessly wrap around to the sides, blending the grill into the wood in a very pleasing way. The big main cabinet (37.5 inches high, 11 inches wide, and 13.5 inches deep) contains a 190 mm Cobex bass driver and a 190 mm Kevlar bass/midrange driver in a Matrix honeycomb enclosure. The metal dome tweeter is similar to the units used in the 801 and 802, but in a restyled free-standing housing mounted on top of the main cabinet to eliminate diffractions. The cabinet is ported, and the efficiency seems to be in the 90 dB range. Two sets of binding posts are supplied, with provisions for bi-wiring and bi-amping. Our first set came missing instruction manuals, and it wasn't until we carefully re-examined the packing material that we discovered that unlike the 801s where internal jumpers must be removed to bi-wire, with the 803s external jumpers must be installed if you want to run the speakers normally. Otherwise either the tweeters or the main speakers will not play.

We set the 803s up next to my 801s and gave them a listen. Shades of *deja-vu*, we heard the same midrange and high fre-

quency problems of the unfixed 801s, only worse. The mids were far too aggressive and the highs far too bright for our taste and this was a real shame, because underneath the rough edges was a great speaker. The bass was powerful, very deep, and very clean, and the lower midrange was seducing, big, and musical. Fortunately, the tweeters on the 803s can be disconnected in an instant, so we turned them off and listened again. To our ears all the problems seemed to be with the drive to the tweeters, not with the main cabinet and driver design itself, so the next step was to pull the crossover board and do an engineering analysis of it.

The crossover board is much simpler than in the 801 and the three coils were spaced far enough apart so magnetic interaction was not the problem. We modeled the crossover schematic in the computer and examined the slopes and gains of the various elements and looked to see if any undamped electrical resonances existed. Sure enough, Aado Perandi, my electrical engineer, found that the problem was that the crossover was too simple - somehow the bean counters had simplified the tweeter crossover so much that it had no damping - there was an oscillation at about 3500 Hz and the impedance of the tweeter crossover fell to near zero at that point too. We felt the tweeter was also turned on too hard - perhaps to make up for the fact that an amplifier would have trouble driving the tweeter crossover in the critical upper midrange area. If their lab amps tended to die on the tweeter load and not make the tweeter go loud enough, then setting the tweeter crossover level too high might try to make up for that - kind of a two wrongs are less bad than one wrong situation.

We wanted "No Wrongs" So We Redesigned the 803 Crossover.

Aado looked at several ways to damp the crossover response and we tried idea after idea making progress, but not getting the speaker to be exactly what we wanted - music as pure as the 801 can play at half the price. We had the 801s right beside our lab samples for comparison, and both music and white noise tests showed us when we were getting closer or drifting further away from our goal. Finally crossover redesign number ten did the job, perfect critical damping of the tweeter crossover and driver electrically, and a gain adjustment (down) to blend the tweeter seamlessly with the Kevlar midrange. A few minor tweeter enclosure resonances were resolved by packing the tweeter housing with damping foam. All the rough edges, all the harshness, all the unmusical brightness vanished. Now the violins sound real with air, not grain and without "fingernails on the blackboard" harmonics. Female voices say "stay and listen" instead of "go away" to us.

Now we have an improved 803 that plays music absolutely as musically as the 801 and with almost the same range. The sounds are not completely identical. The 803 is a tiny bit warmer. The 803 plays deep bass with stunning authority, but without that last measure of window breaking heft that the 801 is capable of when properly driven. The 801 has a slightly more focused midrange due to its exquisite free standing midrange cabinet, but the 803 sounds big and beautiful in the midrange, a slightly different perspective of the music, but one just as enjoyable to hear. I could happily live with either speaker.

Why would you want the 801s? If you want what still is the very best dynamic speaker and you can afford the very best the 801 is the answer. If you want to play VERY

LOUD and clean the 801 can handle more power and will go louder. If you like the idea of the 801s' timeless and updateable cabinet design there is no other choice. The 801s are very expensive, but for those seeking absolute excellence, price no object, they remain the logical answer.

Why would you want the 803s as improved by Audio by Van Alstine? If you have been lusting for the musicality, imaging, range, and transparency of the 801s but simply could not justify their price, now perhaps you can afford the purchase. If you wanted the sound of the big 801 Matrix but simply didn't have room for them, the 803 has a much smaller footprint but still plays all the music. If you were turned off by the styling of the 801, likely the more conventional, but exquisitely detailed and finished 803 will be more to your taste. Perhaps you need two sets of great speakers but don't want to go to the poorhouse. With four 803s surround sound at its best is here.

Listen to the B&W 803 at your local B&W dealer. If you don't like what you hear, don't despair, everything you have reservations about is fixable and more. **Our 803s will automatically get their crossovers upgraded free of charge when we sell them to you. Our clients will get the benefits of our engineering project at no extra cost.** Others won't. This time we are not giving away the cure. Only two people ever called us to say "thank you" after doing our free 801 crossover upgrade. One person was a long term client, a friend for years. The other was an audiophile that spent hours on the phone with us having us walk him thru the project, and who has bought nothing other than that *Audio Basics* back issue set before or since. Not a single potential customer has said, "Gee, if you guys have such a good grasp of audio engineering to make my speakers work that

much better, then maybe your amplifiers are well designed too and I had better look into them."

We need an occasional thank you to keep going. We get many from our *Audio Basics* subscribers and our general clients. Your kind comments are what makes us want to do our very best. But almost without exception we got no support from "outsider audiophiles" – those that "know" that they have to buy \$500 stands and \$1000 filter boxes for their 801s and who "know" that magnetic interaction between the coils is "our opinion." Thus, this time our work on the B&Ws will be reserved for our clients. If you want great B&Ws at nearly half the price of 801s, call us about the Audio by Van Alstine improved 803s, we have got them for you now.

The Used Equipment Listing

We have a few special value items for you this month, all from our own stock. Every customer owned unit in this month has sold before we went to press – no point listing items that are already gone. Remember to call us any time during the month for bargains in used AVA equipment (and to list your own for our trade up brokerage service). Things go on sale as soon as we have tested them. We don't wait for the next *Audio Basics* listing. Our goal is to make the sale for our client at a fair price as soon as possible, first come, first served.

Mos-Fet 120D Amplifiers in completely refinished black chassis. We have two more of these beauties available with one year warranties. The chassis were striped and cleaned and completely refinished to look better than new. We even refinished the transformers. These beautiful sounding (they are powerful, clear, but tube-like) 60 watt per channel solid state amps are great values at \$445.00 each. Buy both and

an A.V. A. solid state preamp and we will install an A.V.A. phase inverter card in the preamp for no extra charge to give you a great 180 watt per channel dual-mono system.

Omega FM Tuner in a good used Dyna AF-6 chassis. This is our best all analog tuner and a long term keeper. It is liquid and musical, easy to tune and use. One only at \$375 with a 6 month warranty.

Upgraded Super Seventy vacuum tube amplifiers with our most recent circuit enhancements (6GH8A tubes, improved bass response, high voltage diode bridges, and the AVA power transformer). \$595 builds you the best St-70 ever with a 6 month warranty.

Frank and Darlene Van Alstine