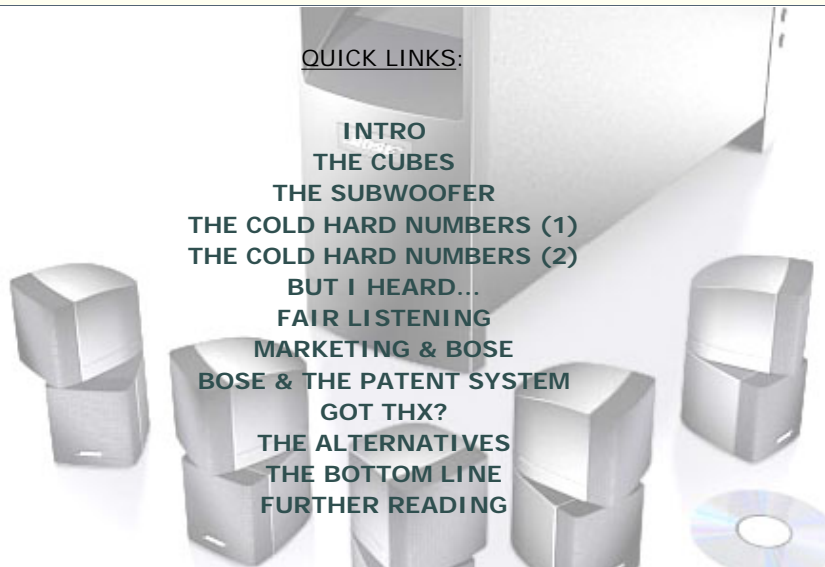


BOSE Acoustimass - Better Profits Through Marketing

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Last updated on October 27, 2004

INTRO:

As a part of a small sect of audio enthusiasts who loathe the company Bose Corp. for its marketing deception, shortcutting in manufacturing, and shameless consumer trickery, I was recently passed on a [website](#) written by a "Bose-o-phile", who was defending the company. Upon reading his site, I vowed to represent *our side*: the TRUTH. However, knowing very little about the products themselves other than the fact that they sound bad for the price, I took it upon myself to audition the Bose AM-15 and perform a little "surgery" on them while I was at it. The review on this page is directed towards the Acoustimass-15, one of Bose's most popular systems, and holds truths to the entire Acoustimass and Lifestyle series products as well. After all, the Lifestyle system is merely Acoustimass speakers packaged with a Bose integrated preamp. The AM-15 is priced at US\$1299.99 MSRP. When you are done reading, check out my Bose alternatives page [here](#).

THE CUBES:

The \$1300 Bose Acoustimass system implements five dual-cubed, 2.5-inch, paper-cone satellite speakers. Incidentally, you can buy these exact same drivers for \$35 a pair [here](#). The material that is used to build these speakers may seem adequate to the unassuming novice; However, upon closer inspection, it is clear that they are built with little regard for performance. To start off, the cubed satellites are made of what Bose once claimed to be "revolutionary new space-aged paper", when in fact my own observations lead me to believe that they are nothing more than dyed Manila hemp. Paper grade is besides the point here, as any type of large paper driver has poor resonant properties in upper octave frequencies (2 KHz to 20+ KHz). When designing satellite speakers where size is the primary consideration, a conventional dome tweeter is ideal. In a cube speaker the size of the Acoustimass, a dome tweeter would perform much better than a cone tweeter. However, Bose disregards this fact because making paper cone tweeters is a much cheaper manufacturing process. You find this practice abundant in \$200 Aiwa boom boxes and mini-systems.

There is also something to be said about the diameter of the drivers. The 2.5-inch paper cone Bose uses falls into the range where conventional tweeter and midrange drivers perform weakest. This incongruous selection of dual 2.5-inch drivers is plagued with substantial shortcomings in the high and mid-frequency range. Remember that sound is merely the rapid movement of air so there are very specific driver sizes that correspond to acoustic properties which allow for the magnet-coil structure to drive the speaker at its targeted frequency band with greater

ease. In home applications, high-pass tweeters should be between 0.5 to 1 inch in diameter, and never more than 2 inches. Larger tweeters are especially poor performers when underpowered by tiny magnets such as those used in the Bose cubes. The unusually large size of the Bose drivers creates a substantial frequency response limitation in the highs at 13 KHz. Midrange drivers should never be smaller than 3 inches in diameter, and are commonly 3 to 6.5 inches (ideally over 4 inches). Boses use of a 2.5 inch midrange creates another substantial limitation, this time in the mid-bass response. The smaller the driver, the less surface area on the cone, and thus the more excursion that is required to push the same amount of air need to produce audible sound. Thus with a 2.5 inch driver, the physical excursion of the cone would have to be tremendous in order to perform like a standard 6-inch midrange. Unfortunately, the Bose drivers do not possess this supernatural excursion ability so the midbass drops off at 280 Hz.

Another one of the Acoustimass' major flaws is the fact that they rely on one small driver to reproduce midrange and high frequencies together. I'm referring to the satellite cubes, which are forced to reproduce signal from 200 Hz to 20 KHz. You may argue that there are two speakers in each satellite, but there is also no active crossover separating the signal, so both are driving the same frequency bands. In this specific speaker design, you must use large speaker cabinets and a line array to get any midbass due to the small radiating area and low X-max. But no, Bose tries to recombine two incompatible audio principles, giving you, in the end, the worst properties of both. Though they are perfectly capable, no other consumer-market speaker company even considers building these pre-equalized miniature dual-driver "crossover-less" satellites because the resulting performance is evident in the sound produced, or rather, not produced. However, this isn't some major oversight in Bose's R&D (or rather, marketing) team... This system was designed to be small and aesthetically appealing (WAF), and this concoction was the only way to make it so. If high and midrange frequencies each had their own discrete drivers with high quality crossovers, Bose would have the same satellite speaker as every other competitor on the market---except without remotely similar performance, and thus nothing to market.

The Bose satellites are also enclosed in cheap, thin plastic cabinets, which I assume is due to size constraints again. This is another unwise choice from an acoustic standpoint. The purpose of a speaker cabinet is to provide an inert barrier that absorbs sound, prevents many levels of distortion and cancellation, and dampens resonance caused by the driver. The thin plastic enclosures that Bose uses is very light and resonant, and fails miserably at all of the aforementioned goals. When you push the speakers hard, you can actually feel the entire enclosure resonating with it. That is the trademark of a poorly manufactured design. In addition, the cube enclosures also fail at magnetically sealing the drivers so that it not only gives off EMI (electromagnetic interference), but also receives it with little resistance. The with price Bose is charging for ALL their speaker products, you could be paying for real wood or real veneer MDF cabinets from other companies.

THE SUBWOOFER:

The Bose Acoustimass subwoofer, or "Bass Module" as they'd like to call it, consists of three 5.5-inch drivers in a seventh-order band pass configuration. The three-chamber band pass design is the worst of all major subwoofer enclosure types. Its only purpose is to boost decibel output at the expense of accuracy. It does this by burying all woofers within the cabinet in three separate chambers, and using them to drive air out of its port(s). First of all, 5.5-inch drivers are not intended to be used as bass drivers; they are clearly midrange drivers. In fact, Bose doesn't even claim that its "Bass Module" is in fact a subwoofer because they can't! True subwoofers start at 8 inches and taper off at 15 inches in diameter (sometimes you will find 6-inch subwoofers in multimedia computer systems and novelty 18-inch subwoofers, but those are largely non-conventional designs that do not have any advantage over others.). Chosen woofer size largely depends on the application, be it music playback and type of music or movies, SPL or accuracy, and other factors such as room dimensions. Smaller subwoofers move faster and thus have tighter bass response for improved clarity and accuracy, but larger subwoofers can reproduce lower frequencies and at louder volumes. Build quality, crossovers, amps, and driver design can magnify or nullify these traits. At a glance, you can tell the 5.5-inch Bose woofers are poorly crafted, from the questionable cone material to the frail spiders, coupled with cheap crossovers located near the amplifier section (harmonic distortion anyone?). And with this already low integrity build, Bose takes these drivers and uses them as a subwoofer unit! This contrived effort quickly reveals its weaknesses in a computer frequency sweep test.

Build Quality. None of the three woofers Bose employs has adequate driver bracing. This is just one of another crucial aspects of a speaker's design that Bose missed the mark on. The spider supporting the cone is flimsy considering the excursion required from such a small woofer. This invariably translates to loose and sloppy response, and even a doubling effect at high volumes! What's worse is the fact that the woofers are accommodated with foam surrounds. A surround is a flexible membrane that is used to attach the speaker cone to the baffle. Organic foam surrounds are known for drying out, rotting, and falling apart within 10-15 years of its manufacturing regardless of usage. Today foam is reserved solely as a cheap substitute used only in low-end speakers where price range is most critical. Well-established alternatives to foam are flexible rubber compounds such as Butyl, Santaprene, Supranyl, and other such polymers. You can tear foam surrounds in a benchmark excursion tests where rubber surrounds would not have trouble. This combination of benefits-weaknesses is why no other speaker manufacturer uses foam unless they absolutely have to meet a budget criteria. This leaves no excuses for Bose, because all of their speakers---from the base model to the flagship model---use foam. I own a pair of \$50 Boston Acoustics CR4 bookshelf speakers that has a more durable surround membrane than the Acoustimass woofers. Combine these weak traits with the fact that all foam surrounds come off the assembly line with a predetermined shelf-life, and one begins to see that they make for a poor investment. In my opinion, speaker parts shouldn't have to be replaced routinely like spark plugs on a car. It seems that Bose and I have a difference of opinion on that

matter though.

I also noticed that the three Bose subwoofer drivers are made of the same type of paper as the satellites, but of a slightly thicker species. Treated paper, paper-composite, and multi-layered laminate make for excellent woofer/subwoofer cones. In fact epoxy-treated paper tends to have the highest strength-to-density ratio, which yields some of the tightest bass response and highest definition of any of the subwoofers I've heard. They are also immune to heat breakdown. Velodyne and REL, for instance, are two companies that implement treated paper with great success; However, Bose uses raw untreated paper that does not possess near the quality of treated paper. Untreated paper falls highly susceptible to moisture damage, which will alter the resonant frequency, compromise integrity, and eventually cause the cone to buckle or tear under load. Trendier woofers use more exotic materials that are unaffected by moisture such as Kevlar, carbon fiber, carbon-Kevlar composites, Aero gel, aluminum, and an assortment of poly plastics.

While on the subject of its structural integrity, the Acoustimass subwoofer is housed in the lowest-grade particle board negotiable. It is a cheap, thin LDF (Low Density Fiberboard), that is a fraction of the industry's standard MDF's (Medium Density Fiberboard) density and thickness. Every other speaker company employs nothing less than MDF in their subwoofer cabinets because it is three times denser than LDF. A general rule of thumb is that the MDF be at least 3/4 inches thick with more thickness emphasized on the front baffle. Hifi speaker companies that I've worked for commonly use 1.5 inch thick solid MDF for cabinets. The Acoustimass bass module uses LDF in two plies totalling 1/2 inch thick and 1/3 the density. Combining offset cabinet material in vertical plies, like Bose does, is also a very poor shortcut to using laser cutting machines. The optimal cabinet material should of course be heavy, stiff, and solid. Two-ply LDF is not heavy, it is not stiff, and it is not solid. Other speaker companies that Bose markets its products on the same level as (such as Wilson Audio, nOrh, and Revel) use marble, methacrylate polymer, solid oak, or solid cast aluminum. I could bust a Bose cabinet in half over my head, but I would not have that same level of confidence in busting a nOrh cabinet over my head.

A pretty reliable gauge of the workmanship on a speaker is in the type of input panels/wire terminals that are built in. All high quality speakers and amplifiers use five-way binding posts. The significance of this is in the higher cost attributed with better build, lower occurrence of breakage, improved contact and conductivity, the ability to accept thicker gauge speaker wire, and the compatibility with banana plugs, spade lugs, angle pins, and a host of other terminators. Despite the fact that pretty much all other speaker companies have picked up the binding post a decade ago, Bose continues to use the inferior spring-loaded speaker clip in all their speakers and amplifiers. Speaker clips made for popular interfaces back in the 80's, but nowadays they exist only as a cheap substitute used to cut back manufacturing costs. If you want to know what speaker clips look like, check out the back side of any cheapo mini-system in the price range of \$80-up (Aiwa, JVC). If you want to know what binding posts look like, look on the back of an executive mini-system in the price range of \$400-up (Denon, Yamaha). Taking that into account, one begins to see what kind of production quality Bose aligns itself.

THE COLD HARD NUMBERS (PART ONE):

Unlike any other speaker or amplifier manufacturer, Bose refuses to publish any frequency response charts or distortion data on their products (and with good reason). And thus a few independent audiophiles, industry professionals, and newsgroups have taken it upon themselves to benchmark test the much debated Acoustimass system. The resulting numbers are always consistent. Here is a pretty credible one sourced from the August 1999 issue of Sound and Vision magazine...

	<u>SATELLITES</u>	<u>BASS MODULE</u>
Frequency Response	280 Hz to 13.3k Hz at ± 10.5 dB	46Hz to 202Hz at ± 2.3 dB
Sensitivity (SPL at 1 meter)*	85.1 dB	N/A
Impedance (minimum/nominal)	5.3/8 ohms	N/A
Bass Limits (-3/-6 dB)	280/220 Hz	46/40 Hz

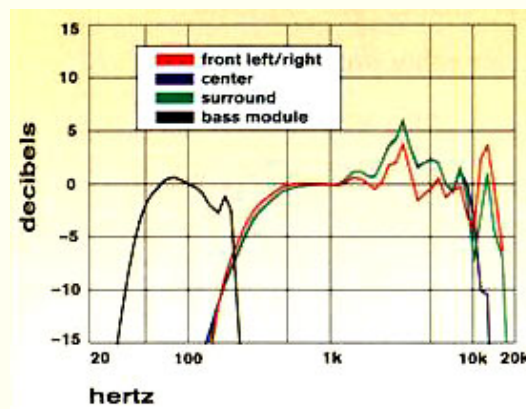
* measured with 2.8 volts of pink-noise input

To reiterate the above, the Acoustimass's bass module responds to 46 Hz to 202 Hz at ± 2.3 dB, while the satellites respond to 280 Hz to 13.3 KHz at ± 10.5 dB. This is, by the way, the only speaker that I have ever seen tested with a ± 10.5 db allowance. Still, this leaves a frequency gap between the satellites and bass module of about 80 Hz! That is 80 hertz of sound that is completely erased within the system's internal crossovers! I wonder how Bose figured out which 80 hertz matters least in the audible spectrum? I will tell you though that that gap accounts for a HUGE loss in midrange sound, which is responsible for the majority contralto, baritone, and tenor vocals in music, and many sound effects in home theater. And let us not forget that the Acoustimass system also ignores audible signal from 20Hz to 45Hz on the low end (deep bass), and 13KHz to 20KHz on the high end (high treble). Do the math folks, this Bose system only produces 13,176 of the 19,980 Hertz in the audible sound spectrum. That's only ~66% of the actual recording being played back to you! Is this the kind of performance you'd expect from a \$1300 product? Most speakers in the same price range are able to respond from 15 Hz to 25 Khz and all modern media formats, from vinyls to DVD, record these frequencies as well. Though these are peak frequencies that most

humans can not hear, the pressure produced from 15 Hz and 25 KHz frequencies can be detected physiologically, and will in fact have an effect on the harmonics of the music you listen to. So why does this "industry-leading" Bose company only produce about 52% of the sound of it's equal-priced market competitors? Good question...

Not only will you experience a huge loss of sound with Bose, but the fact that the subwoofer has to respond to frequencies as high as 280 Hz means that there will be extreme amounts of localized midbass in the Bass Module. A well-mated subwoofer should never have to produce any frequencies above 80 Hz, and ideally should be crossed over around 60-70 Hz. The purpose of a subwoofer is to produce non-directional low frequency effects that are not supposed to be traceable. Translation: essentially when you're watching movies with a Bose system, you will hear the gunshots and explosions coming from the subwoofer next to the CD rack in the corner of the room, and NOT from the television screen. In music, you will hear the singer's voice come from the subwoofer next to the CD rack in the corner of the room, and not the converging point of the two main speakers. This is known as extremely poor 'sound imaging'. For you current Bose owners, try unplugging all your cubed satellite speakers and play a DVD on your Acoustimass system. I used the DVD 'X-Men' for my review. You will be able to follow the entire movie off of dialogue picked up by your Bose Bass Module alone.

All this lacking of sonic fidelity and richness is doctored up by placing overemphasis and accentuation on 80 Hz and 200 Hz in the bass module to give the illusion of powerful bass, and by placing the same accentuation on 7 Hz in the satellites to give the false impression of full high-frequency coverage. In the quest for high fidelity and accuracy in sound reproduction, this system is antithetical to the goal. As illustrated below, there is almost nothing linear about the Bose frequency response...



NOTE: HERTZ ARE NOT EVENLY MARKED OFF

ABOVE: Data gathered by S&V from an anechoic frequency sweep test of the Acoustimass-15 unit. Remember that the goal here is to achieve linear response. You want a frequency chart to show as flat a line as possible, which illustrates accuracy and linear sound reproduction without colorization. It is true that sound is perceived logarithmically by the human ear, but this should have no influence on a speaker's reproduction and interpretation of signal because a speaker should faithfully reproduce what the microphones captured when they recorded the source material you are listening to. Notice the high end roll-off at sub-20kHz frequencies at the far right and the extreme colorization from 1 kHz to 20kHz with huge emphasis on 5 - 7kHz. There is also a frequency dip between 200 Hz - 300Hz within ± 3 dB. The deep bass rolls off prematurely at around 50Hz and is spiked with colorization at about 200Hz. The bass module and satellites don't even begin to harmonize until beyond -10dB. Remember the representation of accurate sound reproduction on the above graph would be a flat line across the ± 0 dB mark. Just look how miserably Bose stacks up in that regard...

BELOW: Another thing to consider is that the only relevant information on the graph is the measurement between -3dB to +3dB because 3 decibels is the slightest detectable change from zero to the human ear. I've isolated that window of scale below. This is how the AcoustiMass looks from that standpoint...



THE COLD HARD NUMBERS (PART TWO):

Bose has a "product data sheet" as they like to call it, on their website in Adobe Acrobat PDF-format, which can be viewed by clicking [here](#). If and when you look at this document, you will soon realize that absolutely nowhere are there any specifications for the system's actual performance; Merely product size, dimensions, and shipping weight. There is mention of the AM-15 being quote: "Compatible with all surround receivers 10 - 200 watts per channel/ rated 4 to 8 ohms". Good to know, except that just about every speaker system sold on the consumer market today is quote "Compatible with all surround receivers 10 - 200 watts per channel/rated 4 to 8 ohms"? So then what has Bose just told us? Absolutely nothing. This is how Bose gets away with telling us nothing about the speaker system's actual performance. What they don't tell you is that because the satellite speakers and bass module are sooo incredibly small, that they are also incredibly inefficient due to lack of internal cabinet air space. This is why the

Acoustimass system runs at an unadvertised 6-ohm nominal load, which will put more load on your amplifier than the more common 8-ohm speakers of the competition. Yes your nice expensive receiver you just bought is going to run a few degrees hotter than you expected in order to push the Bose cubes just as loud as a regular satellite speaker. Especially if you bought the Acoustimass with the passive Bass Module. And while the impedance difference is slight, it does create more heat than an 8-ohm speaker would, and heat is ALWAYS an enemy of the amplifier.

BUT I HEAR BOSE IS GOOD!:

Popularity. Popularity of a name brand doesn't equate to quality. Bose mystique feeds off of its well-targeted audience: the ignorant, ill-informed, mass-market consumers who search for simplified hifi audio solutions in "all-in-one" chain stores such as Walmart, Best Buy, Sam's Club, Price Costco, Sears, Montgomery Wards, etc. A Bose speaker, when put up against the in-store competition of Technics, Cerwin Vega, Pioneer, Kenwood, and Sony speakers, may indeed sound like a better buy. Since these Japanese mega-icons are established corporate monsters, the buyer will feel confident knowing that he or she made a thorough comparison with other household brand names. The truth is that generally the companies that make the best electronics, tend to make the worst speakers. Their mass-production business models of cheap labor, overseas assembly, nonexistent QA, and focus on bottom line spending leaves little room for the integral psychoacoustic research required for designing an outstanding speaker. I would estimate that the vast majority of current Bose owners are the victims of miseducation or a complete lack of audio education, and a false belief that they own the best speakers on the market. A small minority will buy Bose for the actual sound quality knowing full well that they are paying more for a badge than for performance. The size factor by itself should be a non-issue since Polk, Gallo, and others have already made smaller speakers than Bose for less the price and equally big sound. A simple way to test this theory is to see just how familiar a Bose owner is with the real industry leading brands, like Klipsch, Paradigm, Definitive Technology, and B&W. "What's that? I've never heard of that no-name brand."

Audio newbies often throw out the "But I heard that Bose is good!" defense, to which I respond "From who?" Was it a sound engineer, electrical engineer, materials scientist, studio engineer, sound producer, recording professional, musician, Mark Levinson? Ray Dolby? George Lucas? Anyone credible? Or was it your neighbor with the GoldStar walkman, Teac boom box, Funai mini-system, and Sylvania receiver? Perhaps the ubiquitous Bose Ads that they find in completely irrelevant magazines such as Popular Science, Times, Playboy, GQ, People, Astronomy, etc, had some sort of subliminal effect against the better of their judgment? But that's just conjecture...

FAIR LISTENING:

In all stores that sell Bose, you will see one of two types of Bose displays. First, there is the more common 'end-cap display' with a small TV screen, neatly laid out Bose components with speakers and extended steel arms that reach around to create a surround environment. In this setup, the trick to making the Bose system sound good is in unfair comparison and unrealistic environment. In most of these low-end stores, no other 5.1 surround system is configured in such a way because the store does not have a dedicated listening room. Therefore the experience of listening to Bose is more fulfilling than hearing the other 5.1 speaker systems that are all lined up in a row on the shelf-top facing you. The Acoustimass displays are also only about six feet around, therefore when you're listening to the Bose demo in the pocket, the speakers will most likely sound powerful from three feet away. You put the same system in your average 20 by 20 foot living room and in order to fill that airspace with the same sound pressure level, the AM-15s will audibly distort in numerous frequency bands. Bose also carefully selects music and movie sequences that flatter their speakers and most effectively utilize its built-in accents. And as a former employee of two of the top five largest hifi audio specialty retailers in the United States, I personally know how stubborn Bose is about not allowing their speakers to participate in fair speaker comparisons in listening rooms. I know how Bose reps require that a store's floor plan has to place Acoustimass/LifeStyle systems in separate areas with their own displays far away from other speakers.

The second breed of Bose displays is the 'expo room'. These are placed in stores that are deeply in cahoots with Bose Corp. These are stores like Fry's Electronics that lease out 2000 square feet of showroom floor for Bose to erect their own specially designed theater room and an attached catalog room. The thing with these show rooms and theaters is that they are very heavily sound treated with acoustic sound padding, and are acoustically engineered, calibrated rooms. The control room behind the theater is operated by a \$30,000 rack of professional-grade preamplifiers, equalizers, DSP processors, and amplifiers. The technical prowess and build quality of this rack system compared to the Bose Lifestyle media console is a night and day difference. The subwoofer used is positioned in the optimal location to maximize spatial loading. The room dimensions are also calculated to reduce standing waves. The expense of running a room like this is in the hundreds of thousands of dollars range. Again this is a gross overstatement of the Acoustimass' true capabilities, presented in an impractical, unrealistic environment. I can almost fully guarantee you that the Acoustimass system that consumers buy will not sound the same as they do in this room, unless they build an identical room themselves. If you don't believe me, then on your next visit to this Bose demo kindly ask the Bose spokesperson to show you their control room. They will be reluctant and steadfast to do so. Some will deny such a control room exists. Simple, just trace the wires back to the source. I would also be interested in dissecting the speakers and subwoofer they use in this room to see if they matched that of the Acoustimass system that they sell to consumers. My guess is they are likely modified versions as well.

A third species is the Bose outlet store. Well this one is a no-brainer: they only carry Bose products so what do you

have to reference any product from? Bose, Bosier, and Bosiest? There really is no way to gauge the performance or quality of anything in these stores since they all fell from the same apple tree. Not to mention the salespeople in the outlet stores are Bose employees trained under the same highly effective sales-marketing techniques that brought their underperforming products to such a high level of success.

Finally, it is useful to know that in comparison tests, psychologically the listener is more attracted to the speaker systems that have more emphasized bass and treble, and less midrange-- a fault of pop/rock sound engineers. This is the wrong approach, as it is the goal of every audiophile to find the most balanced, most accurate sound. If you do decide to shop around for the Acoustimass system, point your attention to the bass module. On it, there are tone controls (bass and treble dials), which control the tonal saturation of the speakers. It is standard practice by every audiophile to neutralize tone settings. So neutralize the dials on the subwoofer and listen to how terribly dry and lifeless the entire system sounds with music. What's worse, turn the tone settings all the way down to the base setting and the system sounds anemic. Only when the settings for bass and treble are completely saturated will the speakers sound healthy.

MARKETING AND BOSE:

It is estimated that Bose has spent more dollars on advertising last year than ALL other high-end companies COMBINED. Does it have an effect? Sadly, yes. A few years back, the United States Air Force signed Bose onto a multi-million-dollar contract to design noise cancellation headsets for Air Force flight crews. Bose won the contract over two other companies simply because of their "more established name" (brand recognition). The concept of a noise cancellation headset is to actively monitor the noise frequencies emitted from a jet engine and the turbulent wind, and reproduce the exact signal 180 degrees out of phase, thus theoretically canceling it out completely. Many reputable manufacturers have successfully done so as well. Bose produced a model that cost approximately \$1000 per unit, which failed to cancel out a significant amount of noise. The company used the contract as an opportunity to unload obsolete parts from years back. Bose pawned off thousands of outdated interface connectors for which there were no longer commercially available mating jacks, and incorporated them into the headsets. The Air Force, proud as it was, didn't scrap the project, but instead spent countless millions more replacing the consoles in a number of aircraft to make them compatible with the said headsets. In the end though, the Air Force did terminate the contract when test crews found that the headsets were ineffective and non-durable. This whole mess was created over a brand name's alleged reputation and prestige. Bose is now selling a downgraded version of these headsets to commercial airlines and to the consumer public. They now work to a minor degree, but are not surprisingly still easily outperformed by their competitors. These consumer market headsets are also very, very poorly crafted. I browse many online audio forums and have heard stories about these very expensive headsets falling apart prematurely.

Few magazines are now willing to give honest reviews of Bose products due to a Consumer Reports review a few years back that gave the AM-15 embarrassingly bad ratings (score of 62 out of 100). Consumer Reports allegedly used a double-blind comparison test, which is in fact the ideal way to compare speakers. That particular review ended up in a lawsuit over "unscientific testing methods". Thankfully, Bose lost that lawsuit, but since then, Consumer Reports and various other magazines give neutral-to-rave reviews that tip-toe around the actual sound quality and focus more on ergonomics and style. More prestigious publications like Fi and What HiFi? ignore Bose products completely.

BOSE AND THE PATENT SYSTEM:

To quote from Michael Wong, a visitor to this site: "...a casual perusal of their website reveals that they have used money and lawyers to repeatedly abuse the patent system. They have patents for the Acoustimass (Helmholtz resonator), the Direct/Reflecting technology (multipolar speakers), their Acoustic Waveguide (transmission line), and their JewelCube technology (amalgam of transmission line and other old ideas). In each and every case, their patent is a joke; an obvious example of the all-too-common trick of making one minor alteration upon a pre-existing idea and then using an army of lawyers to get it patented... And why all the bother? Because it looks good to write "patented technology" on the box...". For a company that emphasizes cutting-edge research so much, I'm curious as to why their flagship 901 speakers have not seen any significant mechanical changes in the last 15 years. Where is the "better sound through research" going?

GOT THX?:

Considering the large emphasis on marketing that Bose places on its products as well as the ostentatious boasting of "innovation" and "performance", I am curious as to why none, count them: ZERO, of their speakers are THX-certified. George Lucas offers certification to any product from any company willing to undergo the scrutiny of his tests. I'm sure Dr. Amar Bose has brought in many Bose speakers to the Skywalker Ranch for certification only to have them rejected time and time again. I am no fan of THX-Certification myself; However, no one can deny that it is perhaps the singly most powerful marketing tool in the entire industry. One tool that Dr. Bose would not have overlooked, but again, one that he could not obtain for himself.

THE ALTERNATIVES:

In the industry, "BOSE" is considered an acronym for "Buy Other Sound Equipment". So in that spirit, I have made it quite simple to shop for an outstanding home theater system using the same \$1300 that Bose charges. I've been getting a lot of emails and guestbook entries requesting my opinion and advise on specific system designs. I am unable to answer all of them though I do read them all and try to answer as many as possible, but it would be much easier if you shopped and auditioned speakers based on the list I've compiled. Again, my opinion on the quote on quote "best speakers" cannot be relied on, nor can anyone else's. Since sound is a subjective quality, no one can answer that question but you. If in fact you are blessed with the inability to decipher Bose speakers from other premium brand speakers, then all the more power to you! I am not trying to promote or upsell you something fancier, nor am I here to play favorites. I'm merely suggesting superior alternatives to the Bose Acoustimass for the same price or less.

> [Surround Sound Speakers List](#) <

THE BOTTOM LINE:

This six-speaker unit costs \$1299.99 USD MSRP. From dissecting it, I can tell you it costs \$100, no more than \$150 tops, to assemble. It performs similarly to a \$500 Optimus-Radio Shack surround sound system and is very easily outperformed by a \$350 Cambridge Soundworks system. For \$1300, there are at least three dozen other configurations from companies such as KEF, PSB, NHT, Mission, Tannoy, Diva, Polk, B&W, Energy, Paradigm, M&K, Infinity, Mirage, Monitor, Jamo, Axiom, nOrh, Anthony Gallo, Dahlquist, Sound Dynamics, Acoustic Research, Phase Technology, Definitive Technology, Wharfdale, Boston Acoustics, and Klipsch that easily outperform all Bose speakers from the 151s to the 901s. If you are in the market for such a surround sound system, I have compiled an extensive list of speaker systems for you to peruse. Just [click here](#).

Bose equipment, even the flagship LifeStyle 50, resembles the sonic performance of the 11-year-old Aiwa minisystem in my garage. For \$500, the Wave Radio is an overpriced alarm clock. If you're impressed by it, have a listen to a Henry Kloss radio for a fraction of the price! For \$1000, the Bose 3-2-1 can not be described as anything less than a crime against sound reproduction. The message I want everyone to take from this lengthy review is that Bose, like Bang & Olufsen and Nakamichi, sell lifestyle and designer products whose prices are very heavily saturated by image and appeal. They are by no means, no means at all performance products. They have no cost-effectiveness, no bang-for-the-buck value, and draw no respect from any true audio enthusiasts. If your goal is to appeal to and impress housewives, then this system gets the job done, but if your goal is high fidelity, high performance, high endurance, upgradeability, and fair market value pricing then I would very highly suggest you look elsewhere.

I am by no means an elitist audiophile who touts golden ears about in gross snobbery. I am an audiophile in its purest and most basic form: one who is enthusiastic about high fidelity sound reproduction, which I think we all are to some degree. I've worked in hifi audio/video retail sales before (for two companies that offered Bose), worked on the manufacturing end, and have designed and personally installed home theaters for hundreds of clients of very diverse needs. I have no affiliation or financial ties to any competing speaker companies so I speak out of objectivity and out of a big-brotherly desire to inform those that don't already share my knowledge and experiences. Armed with this knowledge, you are now a more powerful consumer. So on that note, good luck and happy hunting!

FURTHER READING:

The internet is a great place. There are many growing online communities and discussion forums focused on home theater, home audio, and consumer electronics. These are great places for everyone, from the eager learning novice to the die-hard audiophile, to exchange ideas and experiences with each other. If you would like to learn more on the subject of audio equipment or just need some guidance, here are some of the leading web forums out there (in no particular order)...

- [Bose Car Audio Victims @ Autospies](#)
- [Home Theater Forum](#)
 - A good Bose discussion
- [AV Science Forum](#)
 - A good Bose discussion
- [Audioholics.com Forums](#)
- [AudioReview.com Forums](#)

- [AudioAsylum.com Forums](#)
- [Home Theater Spot Forums](#)
- [AV Forums](#)
- [The Outlaw Saloon](#)
- [Klipsch Bulletin Board](#)
- [Sound & Vision Online Forums](#)
- [Club Polk Forums](#)
- [The DVD Forums](#)