

International Audio Review

J. Peter Moncrieff

Tomorrow's News Today

Hotline!

Loudspeakers

Osborn Grand Monument Reference

Featured Pick:

This is one of the very few large speaker systems that is truly a great speaker system. It comfortably surpasses the already excellent sonics of its smaller Osborn siblings, including the Epitome favorably reviewed here previously. Its overall sonic performance easily surpasses that of most other comparably priced large, grand “ultimate statement” speakers. And it equals the performance of the very best large systems, some selling for 2 to 7 times its price, making it an outstanding value in its class.

It is the hope of every speaker designer, and the acquisitive dream of every audiophile, to create and acquire (respectively) the ultimate speaker system, the “ultimate statement” embodiment of a particular design philosophy that is then carried out to the ultimate extreme, without compromise for the sake of low cost or moderate physical size. Speaker design is inherently so imperfect, and so burdened with engineering tradeoffs, that great strides can indeed be made if the fetters of cost and size are removed.

Furthermore, speaker design is one audio arena where being bigger should indeed mean being better. Larger physical size, for the cabinet and for low frequency drivers, intrinsically brings with it the benefits of wider bandwidth, higher power output capability, higher efficiency, and lower distortion – as well of course as higher cost (cabinet costs alone go up dramatically with size). Also, the prospect of being able to use more drivers, allotting to each driver only that portion of the musical spectrum for which it is ideally suited, brings with it the promise of flatter frequency response, more neutral tonal balance, more accurate pistonic reproduction of the music wavefront, fewer diaphragm material colorations from non-pistonc breakup, lower breakup distortion, lower IM distortion (including lower Doppler distortion), etc.

Small wonder that many loudspeaker designers and manufacturers have introduced a “ultimate statement” model, these days mostly priced around \$20K-30K. These large ultimate models are usually a scaled up version of the same design philosophy employed in that manufacturer’s smaller models, using similar drivers but more of them in a larger box. If the manufacturer’s chosen design philosophy works well, and the smaller speaker models sound good, then in theory the larger no-compromise sibling should sound even better.

But there’s a slip twixt the cup and the lip. In practice, we have found that the large “ultimate statement” model from many (indeed most) manufacturers does not sound very good, even when their smaller models based on the same design philosophy might sound very good. Most of these large, ultimate models sound disjointed and overblown, pumping out lots of acoustic energy but sounding less like real music than their supposedly compromised smaller siblings from the same manufacturer. The smaller siblings (in the best cases) present an integrated sound that could pass for a real live musical instrument or voice. In contrast, the large “ultimate statement” model from the same manufacturer often sounds like its simply radiating disjointed splats of bass and treble energy, which are not related to each other, and which do not come together as they should to form a single seamless portrait of a single musical instrument or voice.

Obviously, there is a special art to scaling up a speaker design philosophy, and not all speaker designers have mastered that art. It might also be that some speaker design philosophies are inherently not suited to scaling up, and can work well only in small scale.

There are some truly excellent small and medium speakers on the market, some of which are reviewed here. But unfortunately it does not follow that the large, scaled up, ultimate model from the same manufacturer will sound good. There are now many “ultimate statement” models on the market, but most cannot be sonically recommended at all, and certainly not at their high prices.

Thus, we can count on one hand the truly great sounding large speaker systems in the world. We would include Roger West’s Sound Lab A1 electrostatic, the Martin-Logan Statement hybrid electrostatic, the Wilson Grand Slamm, and the speaker under review here, the Osborn Grand Monument Reference.

Right off the bat, it’s obvious that the Osborn has crucial advantages over these other great large speaker systems. It is far more efficient, far easier to drive, and can play louder than the electrostatics. At \$19,975 it costs a mere fraction of what most of the other great large speakers cost. And it is among the easiest to drive, with your choice of power amp, since its efficiency is moderately high (rated 92 dB) and, more importantly, its impedance does not dip too low (rated 5 ohms minimum).

Furthermore, the Osborn Grand Monument Reference (and its junior sibling, the Monument) sonically surpass the many other “ultimate statement” large speakers on the market, most of which are comparably priced, or in the \$20K-30K range. These others sound overblown, fragmented, disjointed, splattered, defocused. The Osborn in contrast sounds integrated and focused. And, even though music from the Osborn does sound big (which most listeners do want from a large speaker system), its size and scale are consistent for all portions of the spectrum and for all types of music.

How does the Osborn achieve its integrated, focused sound when so many other large speakers fail? In a word, the answer is simplicity.

Most other manufacturers, when they create their “ultimate statement” model, start by using multiples of the same drivers they use in their smaller models, winding up with multiple midranges and even multiple tweeters. Their goal in using multiple drivers is to obtain the greater power handling capability, greater loudness capability, and greater efficiency that befits a large speaker system. Some manufacturers also create more complex crossovers, or even split up the spectrum among more drivers, as they move toward their large ultimate speaker model. However, multiple drivers can create disjointed sound (for a number of reasons, including direct radiation interference patterns, compound diffraction sources [which are especially problematic from larger cabinets], etc.).

In contrast, the heart of each Osborn Monument (and Grand Monument Reference) is simply a single pair of drivers, one woofer and one tweeter. Think of it. A simple 2 way system, not a 4 or 5 way system as in other manufacturers’ “ultimate statement” models. As you may know, some of the best sounding speakers along the highway of speaker history, in terms of reproducing music as a seamless, integrated, focused whole, have been simple 2 way systems (including mini-monitors). And the shoulders of this same highway are littered with the corpses of many 3 way speaker designs which failed to reproduce music as a seamless, coherent whole, in spite of the fact that the drivers in a 3 way system theoretically should be able to cover the spectrum more perfectly.

This Osborn is not only simply a 2 way system. It also eschews the commonly practiced use of multiple drivers. In this Osborn there is only one woofer/midrange driver, not several. And of course only one tweeter driver.

It’s also important that these two Osborn drivers are mounted fairly close together. The cabinet of the Osborn Monument (and Grand Monument Reference) stands nearly 6 feet tall. Yet the two key drivers are merely 7.5 inches apart (center to center). That means that these two key drivers are about the same distance apart as they would be in a 2 way mini-monitor. In other words, this huge speaker system is really acting like a small 2 way mini-monitor over most of the musical spectrum! No wonder the Osborn is able to produce a well integrated musical portrait, much like 2 way mini-monitors excel at, whereas most competing “ultimate statement” speaker models cannot, with their multiple drivers scattered all over a large cabinet.

If the Osborn is at heart just a simple 2 way, 2 driver mini-monitor (except in a large box), then how on earth does it achieve the large speaker goals of high efficiency, high power handling, and high loudness capability? The answer again is simple: big bucks. Designer Greg Osborn has spent huge amounts of money on just these two drivers, in order to obtain premium units that have enormous power handling capability (achieved with expensive rugged construction features) and high efficiency (achieved with expensive powerful magnets). Other manufacturers can justify the \$20K range price of their large “ultimate statement” speaker model by the sheer numbers of multiple drivers they employ, while Osborn puts the same total money into a select few drivers. The Osborn Grand Monument Reference can thereby give you the best of worlds, the seamless integration and focus of a 2 way mini-monitor, plus the grand sound of a large speaker system.

It’s worth noting that such expensive drivers would never appear in an actual mini-monitor, since no one would pay that much money for a small speaker system. Also, these drivers surely require a large enclosure volume to achieve their high efficiency and performance capabilities.

Osborn has given the woofer/midrange its own vented enclosure, within the tower, separate from the tweeter. Both drivers are set at mid-height on the tower, so they are aligned with listening height for a normal seated listener. The diameter of the woofer/midrange diaphragm is only about 6 inches. This small diameter means that it can handle frequencies up into the midrange, to blend well with the small metal dome tweeter. On the other hand, this small diameter naturally means that this small woofer, regardless of its ruggedness and powerful magnet, won’t be able to put out much quantity of deep bass. So where then does the bass come from, for this large speaker system? From the built-in subwoofer, of course.

The majority of the large enclosure tower is actually devoted to the system subwoofer, which comprises two 12 inch woofers, each in its own vented enclosure (one at the top of the tower, one at the bottom). This subwoofer crosses over to the main 2 way system at 125 Hz. Thus, it merely augments the low end of the musical range, just as the tall large subwoofers from Wilson, Martin-Logan, etc. also do. In the case of this Osborn, the subwoofer is included in your purchase price, and furthermore is already integrated into the main enclosure. And remember, unlike most other “ultimate statement” large speaker models, with this Osborn the music remains chiefly sourced from that simple 2 way speaker system in the center of the tower.

What is the sound of the Osborn Grand Monument Reference? A number of important sonic qualities are so outstanding in this speaker that they all capture your attention from the moment the music starts playing.

First, this speaker is alive and engaging. It is vivid, vivacious, even gregarious. In short, it brings music to life. This is decidedly not a shy, retiring, passive speaker (see our critique of the Quad 989 for a discussion of that kind of sound). Which does not mean that the Osborn is overly aggressive. It just excels at letting the music energetically sing, communicating the radiant enthusiasm that the players are surely trying to imbue into their performance.

Second, this speaker is wonderfully transparent. You easily hear into the subtle timbres and textures of musical instruments and voices. All music simply sounds much more real, and much more richly involving, when you can so easily hear from a recording the subtle sounds that you usually can only hear live. Very few other speakers are this transparent. One might liken it to the transparency of great electrostatics, but that’s not quite right. Electrostatics still are superior to dynamic drivers in sheer speed and lack of inertial hangover. But this Osborn is nearly as transparent, and its version of transparency is actually preferable to an electrostatic’s, because this Osborn has what we’ll call dynamic transparency (the Wilson Grand Slamm also excels at this). This Osborn (and this Wilson) can track a strong dynamic transient, and still resolve the subtle timbral and textural noises that make this transient sound real (say a cow bell hit on a drum kit). The electrostatic cannot reproduce the dynamics of the main strong transient, and if its not accurately tracking the true dynamics of the overall waveform, then good transparency achieved for subtle sounds within the shrunken transient is less challenging, and is even in a sense academic (if the main event is distorted and squashed, then who cares if the subtle frills are transparently reproduced).

Third, this speaker sounds wonderfully open and airy. There's a sense of freedom and expansiveness to the sound of every musical note. In contrast, many other speaker systems, even large ones, make music sound closeted, closed in, blanketed, or boxed into an enclosure.

Fourth, this speaker lets music sound big. One of the special joys of listening to a large speaker system is that large scale musical works sound large, and commandingly impressive, just as they do live, and just as the composer intended them to sound. This bigness of sound is not simply a matter of being able to play loud, since the Osborn's sound is big even at moderate volume levels. Some of the bigness is attributable to the size of the stereo image generated by large speaker systems. But perhaps the most telling reason for the Osborn's bigness of sound is this speaker's rich warmth. Musical performances possess a wonderfully rich body, weight, and authoritative heft through this Osborn. Singers have real chests, not just vocal cords; pianos have real wood sounding boards, not just hammers and strings; cellos have a large resonant cavity, not just strings and a bow.

People have always responded favorably to rich warmth in speakers, because of the natural musicality it provides, and also because it keeps a speaker from sounding too lean, bright, and analytical (especially speakers with revealing transparency and full treble response, like this Osborn, which could easily sound this way if there were not enough counterbalancing warmth). Henry Kloss, for example, has always taken care that his speaker designs feature rich warmth, and his historic milestones such as the KLH 6 and 8 owe their musical success to this factor. Even our grandparents in their wisdom, shopping in the 1930s for a radio console as their entertainment center, sought what they then called "good tone", by which they meant rich warmth.

Fifth, this speaker sounds effortless. As we discussed previously in IAR, the hallmark of a truly great audio component is a sense of relaxed ease at doing its job, the same sense we see in Fred Astaire's dancing. This is the last hurdle for many audio components trying to achieve greatness. They may have flat frequency response and wide bandwidth and low measured distortion. But they still can't sound truly great if they evince signs of strain and struggle when playing music. Speakers often sound as if they're working hard to push or pump out the music, thereby imposing on reproduced music a forced quality that is alien to what live music actually sounds like. And speakers also often sound as if they're squashing or compressing music, or imposing a ceiling on it, or stuffing it into a small closet, or muffling it under a blanket. In short, these speakers intrude themselves and their limitations on the music, imposing themselves between you and your music. In contrast, this Osborn sounds like it's having a joyfully easy, relaxed time bringing you the music. With this Osborn, there's much less speaker strain to intrude. And that puts you more directly in touch with your music.

Sixth, this speaker sounds very well integrated, especially for a large system. As discussed above, most other multi-way speaker systems, and most other multiple driver large speaker systems, sound fragmented – the harmonics or treble parts of a musical note sound as if they're coming from a different kind of material driver or speaker than the midrange or bass parts of the same note. This Osborn has very good integration, probably because it is at heart a 2 way mini-monitor – on steroids.

Seventh, this speaker sounds impressively authoritative. It can play loud, but you can easily hear this authority even at moderate volume levels. We attribute this sense of authority to a wide dynamic range, which accurately and quickly handles the high crest factors of music, without compression and without the time smearing overhang that compression brings. Live music can have a very high crest factor, where the instantaneous peak value of a momentary transient is much, much higher than the average power level of the music's loudness. Most speakers cannot handle these very high peaks accurately, even when playing music at moderate volume levels. So they squash the amplitude of the very high momentary peak, thereby making this musical peak sound unrealistic. And, since the squashed energy has to go somewhere, the waveform gets smeared out into a time overhang, while the speaker struggles to regain its equilibrium after being dynamically overloaded, thereby making this musical peak sound doubly unrealistic. In other words, the real transient goes up to a very high peak and then is over with very quickly in time, whereas most speakers squash the amplitude of the high peak and then extend the squashed energy longer in time than it should be, thereby committing a double blunder.

In contrast, this Osborn does a superb job of replicating the very high peak and then getting over it quickly. It's tricky to put into words what this sounds like when done correctly, as this Osborn does it. It doesn't really sound louder, since the very high amplitude transient is over with so quickly in time. Perhaps the best description is to say that, when these high momentary transients are handled with full dynamic range and are quickly left behind, then music sounds more real, more alive and alert, more fresh, and more impactful but without being heavy handed. And that's how this Osborn sounds. It accurately reproduces both the high amplitude and the short duration of the momentary musical transient peak

Note that this Osborn retains its balance and poise while doing this, so it is instantly ready to accurately reproduce the very next tidbit of musical subtlety to come along. Most other speakers get flustered by the overload of these high musical peaks, and therefore, until they recover their balance and poise from this overload (i.e. until they manage to dissipate over time the energy stored from their dynamic squashing), they can't do as good a job of transparently and accurately revealing the next tidbit of musical subtlety to come along. Incidentally, this is part of what we meant above by dynamic transparency, when we noted that this Osborn and the Wilson Grand Slamm are more transparent than electrostatics in handling dynamic musical material.

As you continue listening to the Osborn Grand Monument Reference, you begin to become aware of further secondary sonic qualities.

First, this speaker is excellent at projecting a musical performance into your listening room. If a singer or a pianist is closely miked center stage (and most are on most recordings), this Osborn puts them right there, center stage, in your listening room, with a solid, believable, body (this body being helped by the rich warmth discussed above). Many music recordings heard through this Osborn can have a vividly realistic presence in your listening room. It's an exciting, impressive, immensely enjoyable listening experience. Imagine having a private command performance in your own listening room by your favorite singer or pianist or jazz trio, or even orchestra or opera company. That's what this Osborn can give you.

Speakers can be roughly classified into two groups: those that transport you to the recording venue (you are there), vs. those that bring the musicians into your listening room (they are here). This distinction also affects the stereo imaging characteristics of a speaker. This Osborn belongs to the latter group, and only you can say whether this suits your listening taste and listening room parameters. On those recordings that are closely miked (and most are), the Osborn can be superb at projecting the musicians' presence onto a stage in your listening room. And then on those recordings that are distantly miked, which include a lot of concert hall ambience, this Osborn still brings the music into your listening room, and also brings the concert hall ambience along. In other words, this Osborn is so superbly transparent that it reveals all the information in a recording, including the concert hall ambience if the recording was miked that way. But the Osborn's preference for projecting music means that the concert hall ambience itself gets projected into your listening room and portrayed on a stage in front of you. There's a rich, wide stereo stage portrayed by this Osborn, and this stage includes rich concert hall ambience when that ambience is included in the recording. But there's still a sense that this stage, even with its concert hall ambience, is in your listening room (they are here instead of you are there). If you have a large listening room (which you would want anyway to suit any large speaker system), then having a full concert hall stage cum hall ambience projected into the same room with you can be exciting, adding a visceral charge to those tutti climaxes. But perhaps in a small listening room this experience might be overwhelming.

Even though the Osborn's two main drivers are close together, thereby producing this Osborn's superb integration, these two drivers are still located on a large front baffle, and there is no anti-diffraction felt blanket on this large front baffle. Thus, there is necessarily considerable secondary diffraction radiation, some with long time delays, from the large, long, distant cabinet edges. This secondary radiation slightly impedes the ultimate stereo imaging capabilities of this speaker, by allowing the listener's ear/brain to cue in on the speaker location. This Osborn is excellent at portraying a wide, rich stereo stage, but the speaker's location can still be aurally detected within the stereo stage; it does not aurally disappear as well as mini-monitors can. Also, the Osborn's two main drivers are not phase aligned (nor are they phase coherent), which might slightly affect the ultimate stereo imaging capability.

Second, this speaker's low end bass is wonderful. Its reach is deep and powerful, as it should be in every large speaker system. But it also has a special quality that is very rare, even among large high end speakers. This Osborn's bass has an easy flowing, wafting, rolling, relaxed quality. That's how real bass from real musical instruments really sounds, whether from pipe organs or plucked string bass. In contrast, most speakers, including most large ones, put out their bass with a forced, fiercely pumping quality. This artificial quality betrays the fact that these are merely cones flailing away, struggling mightily but vainly to reproduce the power of live bass – and in their straining they are unable to simultaneously reproduce that quality of flowing ease that live music's bass naturally has. This Osborn captures that special quality of live music's bass, and therefore sounds more natural and real than most other speaker systems.

Third, for some listeners this Osborn's rich warmth might be too much of a good thing. We enjoy this speaker's rich warmth as musically natural, and we also find that this rich warmth helps to counterbalance the very revealing tweeter, helping to keep it from sounding too bright, analytical, or lean. But, at the low end of the 100-300 Hz warmth region, specifically around the 125 Hz crossover point, the warmth energy does get a bit too plummy. It is clear that the subwoofers are contributing a little too much energy at the crossover frequency (they are great below that). We found the same problem when we evaluated the add-on subwoofer system of the junior Osborn Epitome model, and the two subwoofer systems stacked in this Monument tower each appear to be similar to that Epitome subwoofer system. It might be possible for the manufacturer to address this by simply adjusting the value of the passive crossover components to begin rolling off the subwoofer at a slightly lower frequency, so it doesn't contribute quite so much at 125 Hz.

This frequency of 125 Hz is also in a region where perceived energy is very dependent on other factors, such as the size of your listening room, the location within your listening room where you position this speaker, and your own listening position within the room. If your room is small enough to have a reinforcement room mode at 125 Hz, then this Osborn will energize this room mode very enthusiastically, and you'll have to employ countermeasures. On the other hand, if your room is large enough so that it does not have a reinforcement mode at 125 Hz, then you might be happy with the results. And, if your room is truly large, you could position these Osborns far enough from the back and side walls so that there is actually a partial cancellation null to these walls at 125 Hz.

The subwoofer has its own dedicated speaker terminal at the back of this Osborn tower. Thus, you have various other options to tailor the sound of the subwoofer to your room and to your listening preferences. You could bi-amp the whole system, and then easily tailor the signal input to the bass amp to start rolling off at say 100 Hz, thereby decreasing the subwoofer's contribution at 125 Hz. Or, if you bi-wire the whole system (strongly recommended by the manufacturer), you could pad the wire going to the subwoofer with an inductor or resistor (this would degrade amplifier damping of the subwoofer, but that's not a big concern here since the huge magnets on the subwoofer drivers already tightly damp and control them). Or, if you really want to markedly knock down the plummy energy hump at 125 Hz, you could simply wire the subwoofer in reverse phase relative to how you choose to wire the main 2 way system (see below) when you connect the system terminals. This makes the subwoofer subtract from the 6 inch woofer/midrange around their 125 Hz mutual crossover, rather than additively reinforcing it (this would be an effective countermeasure choice if your room is small and has a reinforcement mode at 125 Hz).

Fourth, the tweeter in the Grand Monument Reference (far more expensive than the tweeter in the Monument) is incredibly revealing, especially for a tweeter with such wide dynamic range and high power capability. But the laws of physics are cruel, and dictate that there can be no such thing as a perfect tweeter. If a tweeter's moving mass, including voice coil and diaphragm, are light enough to respond quickly, and thus be revealingly transparent and have extended treble response, then it will also be fragile and incapable of withstanding much heat, so it will be limited in dynamic range and will be unable to play loud (e.g. some silk dome tweeters that sound beautiful at low volume levels). On the other hand, if a tweeter's voice coil and diaphragm are made rugged enough to withstand wide dynamics and loud volume transients, to accurately reproduce the high crest factor transients of live music without compression, then they will be heavy, and that usually means lost transparency and less extended treble response (perhaps also with a response peak pushed down into the audible range).

In short, two desiderata seem to be mutually exclusive opposites: you can have revealing transparency in a tweeter, or you can have wide dynamic range, but you can't have both. How then does this Osborn speaker manage the trick of delivering both mutually exclusive opposites from its tweeter? The answer again is big bucks. The manufacturer spends a preposterous amount of money on this one Audiom TLR tweeter driver for the Grand Monument Reference. And what this money chiefly buys is magnet, a giant magnet. This giant magnet manages to quickly accelerate and control the heavier mass of the tweeter's rugged voice coil and diaphragm, thereby restoring the desired quick response and excellent transparency. Thus, this Osborn speaker gives you a very rare best of both worlds in the treble: excellent transparency and quick response accuracy, combined with wide dynamic range and great loudness capability. It's a special treat to hear difficult musical instruments effortlessly and accurately (without compression) reproduced by this Osborn tweeter, instruments such as crashing cymbals or struck triangles. These difficult musical instruments humiliate virtually all other tweeters; lightweight tweeters compress the sound, heavy tweeters (e.g. JBL and Revel) sluggishly dull the sound, and EMITs go into paroxysms of frazzled distortion.

Even this Osborn tweeter is not quite perfect, however. The response peak of its inverted metal dome has consequences within the audible spectrum. This puts a slightly bright, slightly hard edge on just the outline of treble transients. It's worth mentioning that the Focal tweeter used in some Wilson systems also has a response peak in the audible spectrum, and it too has very good transparency and dynamics. So this bright edge may simply be the small price we have to pay to the laws of physics, in exchange for getting the considerable sonic benefits of superb transparency plus wide dynamic range. The tweeter in the Osborn Grand Monument Reference gets much tamer after a thorough break in period playing music (or white noise), so you should not judge it fresh out of the box. After break in, if you still find this tweeter to be a little too bright, it would be easy to compensate for this with a judicious selection of associated components in your system. The Wilson systems are usually partnered with cables from Transparent Audio, which have a noticeable softening effect upon music's trebles, thereby taming the sound of the bright peak in the Wilsons' hard dome Focal tweeter. You could also experiment with adding more plush sound absorption materials to your listening room. Our preference is to employ maximally accurate cabling, so that we hear every wonderful tidbit of musical transparency from this amazing Osborn speaker. If necessary, we can adjust the room acoustics (using ASC Tube Traps) so that at least the reverberant room energy has a desirable tonal balance over the whole spectrum.

But what about the direct energy radiated from the tweeter directly to the listener? How can you tame that while still using accurate cabling? See below.

Fifth, this speaker's integration is excellent, especially for a large system, as discussed above. But its coherence is still not perfect. When this speaker system is connected as the manufacturer instructs, the midranges have a slightly phantom, recessed, soft quality. That's why this speaker, even with its vivacious and energetic musical projection, does not sound too aggressive overall. Its midranges, though adequate in quantity, are actually a bit too polite in quality (the opposite of the JBL forced presence syndrome). Furthermore, this phantom, soft quality in the midranges is at odds with the direct sound of the neighboring warmth and bass region on one side, and is also at odds with the direct, slightly bright and hard neighboring trebles from the tweeter. In other words, this speaker has a slight hole in the middle, with midranges that are slightly inconsistent in quality with the adjacent musical regions on both flanks. Again, this hole in the middle has nothing to do with inadequate quantity of midrange energy. It is a more subtle sonic phenomenon, having to do only with a slightly phantom quality to the midrange energy.

What this means is that there is less than optimum coherence for the various parts of the spectrum. The bass and treble parts of the music sound pretty direct, with great tactile immediacy, whereas the midrange parts of the music sound more indirect and ghostlike. This is a loss of tactile coherence. It is most audibly apparent when, as often happens, a single musical instrument is playing a note with a fundamental in the midrange and with overtones in the treble. The fundamental will sound somewhat soft and ghostlike, while the overtones of the same note from the same instrument sound harder and more direct. This is also an example of loss of harmonic coherence, since the fundamentals and harmonics of the same musical sound do not cohere with each other.

What's the reason for this less than optimum performance, in both tactile coherence and harmonic coherence? It's actually a common problem, endemic to most speakers. Once again, we're bucking up against the laws of physics. If a speaker system is to have wide dynamic range and good loudness capability, then crossover slopes steeper than first order are usually used, in order to protect the higher frequency drivers from excessive energy that would cause excursion distortion and/or burn them out. The problem is that these steeper crossover slopes introduce phase rotation and inversion. In the case of second order crossovers, such as used in many speakers systems including this Osborn, adjacent drivers are inevitably polarity inverted relative to each other (higher order crossovers introduce even worse phase rotations, with multiple inversions).

This phase inversion is actually audible on most speaker systems. And, precisely because this Osborn speaker has such remarkable transparency, it reveals this common phase inversion phenomenon even more clearly than other speakers do. This extraordinary Osborn speaker reveals more of everything about the music, including the audible effects of the common phase inversion problem that it shares with so many other speakers.

Inverted absolute phase polarity intrinsically sounds softer, more phantom-like, whereas correct absolute phase polarity intrinsically sounds direct, tactile, more articulate. To easily hear (and feel) this difference for yourself, say the word "puff" normally (correct polarity), and then say "puff" while you are continually sucking in air (inverted polarity). The normal, blowing "puff" is positive, energetic, dynamic, direct, tactile, and articulate; the inverted, sucking "puff" sounds weak, withdrawn, softer, and phantom-like.

When you connect this Osborn speaker as the manufacturer has made it (red post positive, black post negative), then the tweeter will be in the correct phase polarity (hence its direct tactile immediacy), but the adjacent driver (woofer/midrange) will be in wrong, inverted phase polarity (hence its soft, phantom quality). The crossover point between these two drivers is 3500 Hz, which is just the frequency region where the human ear/brain is most sensitive to all kinds of phenomena, including phase polarity. That portion of the music above 3500 Hz will be in correct absolute phase polarity, while the immediately adjacent portion of the music below 3500 Hz will be in the wrong, inverted absolute phase polarity. That region below 3500 Hz includes the lower midrange (300-1000 Hz) and midrange (1000-3000 Hz), which is why the midranges of this Osborn have a slightly phantom quality.

Also, the midrange is where the heart of the melody is articulated, and because its quality is soft and phantomlike in this Osborn speaker, it can't effectively compete against the plummy warm 125 Hz hump from the subwoofer (discussed above), and so this shortcoming in incisive midrange articulation makes that 125 Hz hump seem even more overbearing. Incidentally, the woofer/midrange driver also handles the warmth region (100-300 Hz), so this region too is phase polarity inverted, but for these lower frequencies the sonic effects of phase inversion are less audible to the human ear/brain.

Now, let's take stock of where we are. We have in the Osborn Grand Monument Reference a truly great speaker of enormous capabilities, but we also have found a few small areas where it is less than perfect. These less than perfect areas include the following:

- a. tweeter a little too hard, direct and bright;
- b. midrange a little too soft, indirect, phantom-like and subdued;
- c. warm hump from subwoofer at 125 Hz sounds too heavy, especially because it overwhelms the shy midrange;
- d. coherence problems: soft, phantom midrange quality contrasts too much with hard, direct tweeter.

It's time for a neat trick. You, the proud owner of a new Osborn Grand Monument Reference, can solve all of these sonic problems, and with just one deft stroke. How, you ask? Simple. When you connect your speaker cables to this Osborn speaker, simply disobey the manufacturer's color codes. Wire it backwards. Connect your red (positive) speaker cable to this Osborn speaker's black terminal, and connect your black (negative) speaker cable to this Osborn speaker's red terminal. Presto!

What does this simple trick accomplish? First, it puts the tweeter in inverted absolute phase polarity. This does a wonderful job of relaxing and taming the slightly hard, bright, too direct edge that the metal dome wants to put on music. It makes the tweeter sound much sweeter and more musically natural.

Second, it puts the midrange in correct absolute phase polarity. This cures the soft, phantom quality the midrange previously had, giving the midrange better articulation and a truer tonal quality. It gives this Osborn speaker an even more believable tactile musical presence (which is primarily a function of midrange qualities), making all voices and musical instruments sound even more real. When a singer or trumpet belts out a note, there's a dramatic sonic difference between the midrange being in inverted phase polarity (if you obey the stock color codes) vs. correct phase polarity (from our deliberate disobeying of the color codes). With the midrange in correct polarity, there's a true, energetic belting out of the note, as air is literally pushed out at you. However, with the midrange in inverted polarity, these same musical notes sound like a weak sucking in (since the true sound of air blowing out is inverted, to become the quite different sound of air sucking in).

Third, making the midrange more articulate also allows it to compete better with the adjacent tweeter, i.e. to achieve full stature standing alongside the adjacent tweeter. And this in turn further helps the tweeter to sound less hard and edgy, because its own articulation now no longer sticks out like a sore thumb against a background of a too soft adjacent midrange. The more articulate midrange now stands on an equal footing with the relaxed and tamed tweeter, so the two drivers now have equal stature and can work together to deliver a far more consistent, seamless portrayal of all the music and the whole spectrum.

Fourth, making the midrange more articulate means that it can also stand up to and effectively compete with that warm hump from the subwoofer at 125 Hz, so that warm hump doesn't sound so overly heavy any more. Note that this benefit is achieved with the subwoofer connected in the same relative phase as the main 2 way system, so they still reinforce each other (i.e. the subwoofer, the lower set of terminals, is also connected backwards, with red cable to black terminal, so it matches the backwards connection you have just made to the main 2 way system, the upper set of terminals). If after hearing this improvement you still wish to cancel the 125 Hz hump even further, you can still do this by connecting the subwoofer in the opposite relative phase to the main 2 way system, i.e. by connecting the subwoofer correctly as indicated, red cable to red terminal, so it is the opposite of the backwards connection (red cable to black terminal) you have just made to the main 2 way system.

Fifth, the coherence problem, common to all speakers with higher order crossovers, was exacerbated in this Osborn because the tweeter, the driver in this system that already sounded a little too hard, direct, and bright, was color coded to be connected in correct absolute phase polarity, which inherently is more direct and harder sounding, whereas the softer (more neutral) sounding driver, the woofer/midrange, was color coded to be connected in inverted absolute phase polarity, which inherently is softer, more phantom sounding. In short, the harder sounding driver was connected in the harder sounding polarity, while the softer sounding driver was connected in the softer sounding polarity. Thus this connection choice magnified and aggravated the incoherence and inconsistency between the two drivers.

By deliberately disobeying the color codes and making the opposite connection choice, we instead minimize the incoherence and inconsistency. We bring the two drivers much closer together in sonic quality by the simple expedient of assigning the softer sounding connection (inverted polarity) to the harder sounding driver in this system (the tweeter), and the harder sounding connection (correct polarity) to the softer sounding driver (the woofer/midrange). This makes this Osborn speaker sound much more coherent, since the two drivers are now much closer to each other in sonic quality. The midrange portion of a musical note now sounds much closer in quality to the treble overtones of the same note. Remember, incidentally, that we must assign inverted polarity to one driver or the other; since this is a second order crossover, we can't assign correct absolute phase polarity to both drivers (unless we want a frequency response hump at the 3500 Hz crossover point).

This simple trick, connecting the terminals backwards, makes all the above improvements, and takes this Osborn speaker that extra crucial 9%, from 90% to 99%, transforming it from a great large speaker with some flaws into a true Reference that we or you could be enthralled with, without reservation, for years. It makes this speaker even more tonally neutral, more integrated, more seamless, more consistent, and more coherent, since its tonal quality is now more equal for the two main drivers.

The Grand Monument Reference version, reviewed here, has some special features that set it apart from the regular version of the Monument. The cabinet walls are lined with a lead plus felt sandwich, which contributes both mass and inertness. The cabinet panels of any speaker system, especially a large one, can radiate huge amounts of unwanted blurring sonic energy, which artificially colors and blurs the true musical information that the drivers themselves are radiating. The very best speaker systems go to extraordinary lengths to deaden these cabinet walls, so they don't vibrate and radiate unwanted energy. The lead and felt sheets lining the walls of the Grand Reference surely deserve credit for the Grand Reference's outstanding transparency and low coloration. The regular Monument has a similar cabinet but omits the lead lining, so sonically there should be a little more wood cabinet coloration.

The Grand Reference also features that ridiculously expensive Audiom TLR tweeter with the giant magnet, which gives it such speed and transparency. In contrast, the regular Monument employs a more sensibly priced Audiom titanium inverted dome tweeter (said to be essentially the same model used in the Wilson Grand Slamm). Thus, if you just can't squeeze \$19,975 out of your budget for a Grand Reference, you can still get similar sonic performance for \$14,500 from the regular Monument. However, we suggest, if you are spending this kind of serious money for a speaker system, that you go for the gold and get the Grand Monument Reference.

The Osborn Grand Monument Reference is easily one of the very best large speaker systems you can buy, with very strong intrinsic sonic capabilities across the board. Its price makes it the most attractive bargain among these great large speaker systems. Adding our easy trick mod (at zero cost) maximizes its sonic strengths and almost eliminates its few weaknesses, getting the most out of this speaker's potential, and taking it from 90% to 99% of its promise. Hearty congratulations to designer Greg Osborn. Everyone deserves to hear what this speaker can do. If your local dealer doesn't carry this speaker, you can visit the Osborn website at www.osbornloudspeakers.com.au.