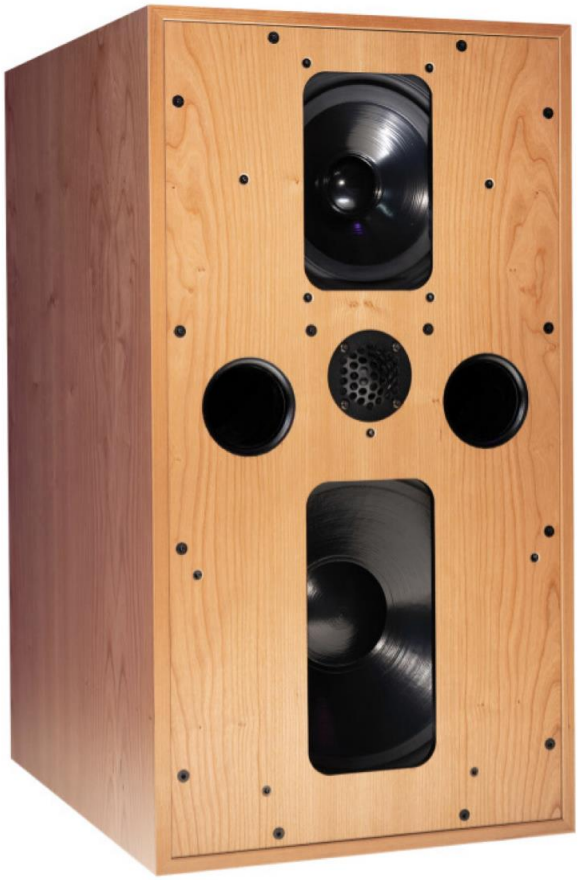

Graham Audio LS5/5

Speaking with a Single Neutral Voice

Paul Seydor

Most serious audiophiles of my generation think they have a pretty good idea of what to expect from a loudspeaker designed by or for the British Broadcasting Corporation (BBC), and they would probably be right. With only a few exceptions, these speakers are small-to-medium two-ways, with a reflex-loaded bass/midrange driver crossed over to a tweeter, stand-mounted, and made to be situated as far as manageable from adjoining walls. Overall tonal balance is neutral or "natural," often mildly on the warm side with a corresponding slight recession in the presence region (the so-called "Gundry dip"); top ends are very kind to their dogs; there is little to no deep bass, and equally little to no ability to sustain very loud playback levels in large rooms. Yet for many listeners, particularly those whose tastes run to live, unamplified acoustic music, these are easy sacrifices to accept when the payoff is the overall accuracy of response, truth to timbre, low distortion, and precise imaging that constitute the cornerstones of the best BBC loudspeakers.

What is less well known is that back in the day the BBC's research was considerably more extensive than even well-informed audiophiles and audio reviewers ever knew. Specifically, in 1959 the corporation commenced research on a loudspeaker project intended to address some of the limitations of smaller speakers. The two lead engineers were Spencer Hughes, later of Spendor fame, and Dudley Harwood, later of Harbeth fame, who detailed its development in a BBC report written in 1967, the year the fruit of their research, the LS5/5, was introduced. Highly technical, this report nevertheless so clearly sets forth the thinking behind the design that even laymen can grasp the concepts (Google "LS5/5 BBC report"). The 5/5 was a three-way configured with the woofer and midrange drivers flanking the tweeter in a vertical array, the cabinet a little larger but far heavier than the standard two cubic feet of a large bookshelf speaker. Its most unusual feature was what looked like a secondary baffle attached in front of the baffle on which the drivers were mounted. Into this front baffle were cut two slots (AKA "slits"), each one leaving the bass and midrange drivers *partially* unobstructed. The tweeter was mounted unobstructed between the slots.

The purpose of the slots was to make for a wider, more uniform dispersion pattern to obviate the need for head-in-the-vise sweet-spot listening. As with all BBC loudspeakers, the LS5/5 project arose out of a professional need for mixers to hear a well-balanced sound at large mixing consoles, which are often wide enough to take the mixer, engineer, or producer well out of the preferred listening window of speakers with narrow dispersion as they move back and forth operating the controls. Allowing only part of the cone of the driver to be unobstructed in effect makes it behave like a smaller driver, better coordinating the sizes of the drivers with the lengths of the frequencies at the crossover points. One of the biggest problems with cone-type speakers is that as frequencies get higher, their wavelengths become shorter, and once they're shorter than the diameter of the driver, dispersion progressively narrows until you have to be right on the axis of the speaker to get a well-balanced sound. An additional problem is what can happen at the crossover points. Non-uniform dispersion resulting from the different sizes of the drivers often produces noticeably uneven power response, with narrow- and/or wider-band lobes, which reflect back to and corrupt the on-axis response.

The different ways loudspeaker designers address these issues—from omnidirectionals (like the Muraudio PX-2) to those with near-180-degree frontal radiation (like the old Acoustic Research LST)—are beyond the scope

of this review. Suffice it to say, one way to do it is with slot-loading. Of course, it's not so simple as all that—for example, if the slot and baffle are not carefully dimensioned, damped, and spaced, you wind up with a Helmholtz resonator that in effect turns the slot into a musical instrument rather than a reproducer. Not for nothing is that BBC report littered with all that math.

Although never sold or distributed outside the BBC, the 5/5 remained in wide use there for a couple of decades and was, I am told, judged by a few resident engineers the best speaker the corporation ever designed. Given its insider reputation, why did it never go beyond the BBC? While as a three-way with a 12-inch woofer, the 5/5 possessed a dynamic window considerably in excess of the smaller two-way monitors and thus more than adequate for most instrumental ensembles, even orchestras, the limitations of drivers of the day still did not allow it to generate the kinds of sound-pressure levels demanded by the makers and producers of rock music, which was by then proliferating the market. The consumer-speaker market was also going in the direction of much larger and more exotic sorts of speakers. So, the 5/5 remained something of an insider secret at the BBC.

But in second decade of this century, Graham Audio, of England, with several successful BBC-design revivals under its belt, decided the time might be right to take a new look at the LS5/5. And who better to entrust the project to than Derek Hughes, already with Graham as consultant and designer and the son of none other than Spencer Hughes himself? Hughes *fils*, who learned a lot of his art and craft from a very early age literally at his father's side has distinguished himself as one of the most gifted and accomplished speaker designers these last few decades of high-end audio. In the late nineties, while still at Spendor, he designed his own version of his father's BC-1, marketed as the SP1/2, long a favorite of Robert Greene and a speaker I owned for a while back then. It had the most neutral tonal balance of any speaker I had ever heard up to that time, and it's still one of the most neutral. The only reason I sold my pair, which I did with *great* reluctance, is that I was completely besotted with Quad ESLs, and living as my wife and I were in one of those lovely but small Spanish houses that proliferate Los Angeles, we literally had no room for another pair of loudspeakers, however excellent. Since then, Hughes has been responsible for bringing several classic BBC models back to life in improved versions, including the LS3/5a and LS3/6 for Stirling Broadcast and the LS5/9 and 5/9f for Graham Audio. Most impressive of all is the recent upgrading of his father's classic BC-1, designated by Graham the LS8/1, which received one of the rare reviews by my colleague Robert Greene that I would characterize as a rave (TAS 323).

With most of the conceptual work on the 5/5 completed back in the sixties, Hughes' task consisted mostly in upgrading the design along practical lines of dynamic range and power handling, and further improving an already pretty wide, flat, and smooth frequency response, plus addressing several issues pertaining to drivers, materials, cabinet construction, and damping. With a proprietary new 12" woofer, a 24mm dome tweeter from SEAS and an in-house-designed 8" midrange to call upon, Hughes managed to tease out a substantial 10dB increase in loudness over the original and a frequency curve specified as 40Hz to 20kHz ± 2dB.

Meanwhile, the cabinet adheres staunchly to the BBC "thin-wall" philosophy by which the walls are designed to flex at lower frequencies where the effect upon the sound is benign. The several small, well-damped resonances at lower frequencies are advantageous because they *are* low in amplitude and dissipate very quickly. By contrast, rigidity-above-all thinking can often result in resonances being pushed up into the midrange and presence regions, where they are more pernicious. These higher resonances, of the kind found in many synthetic materials of nominally greater rigidity and density, may be narrower in band, but they often have higher Qs and thus take longer to die away (i.e., they ring longer). While the thin-wall approach is easy enough to implement in small speakers because the panel lengths are relatively short, it is more difficult with speakers the size of the 5/5. Special bracing at the edges and corners for strength were devised, and new damping materials for vibration control searched out and developed.

The 5/5 is stand mounted. Any suitably sturdy stand of around 19 inches high will do, the idea being to get the tweeter situated at ear height. Stands ($1099/pair) supplied by the importer, On a Higher Note, are made from solid metal, are very strong and rigid, and sit solidly on the floor without rocking. However, the same issues of resonance vis-à-vis rigidity obtain as with the cabinets. If the speakers are rigidly coupled to the stands and the stands in turn rigidly coupled to the floor, you may wind up with a sound that is slightly edgy because, again, this sort of rigidity tends to push any resonances resulting from vibrations coming back to the stand up in frequency. What is needed is some sort of damping or decoupling that doesn't allow the speaker to rock back and forth. The importer's stands are supplied with Blu Tack™, a small amount of which is to be applied to the four corners of the platform. Alternatively, you can get small rubber or sorbothane feet from several sources (Amazon most conveniently). What you're after is something that breaks the vibration path without compromising stability. A thin layer of the Blu Tack™ does the trick perfectly; the whole setup is exceptionally stable while providing just enough lossy damping to keep everything clean and unperturbed from unwanted vibrations. Like all Graham loudspeakers, the 5/5 is voiced with the grilles in place and should be listened to that way.

Before I get to the sound, I'd like to reinforce a comment REG made in his review of the LS8/1 that also applies to this and to many other BBC or BBC-derived speakers (e.g., Harbeth, Stirling Broadcast): "It is not inexpensive and to some eyes—not mine!—may seem not to offer enough technological glitz to justify its price." Allow me to add an exclamation point of my own. The conventional, conservative appearance of the 5/5—drivers in a rectangular wooden box—completely belies the solid scientific thinking, exhaustive testing, meticulous research, and sophistication of design and engineering that went into the 5/5. The quality of parts, materials, and construction, the attention to detail from crossovers to drivers to internal damping,

Specs & Pricing

Type: Three-way, reflex-loaded, stand-mounted loudspeaker
Frequency response: 40Hz–20kHz ±2dB
Sensitivity: 88dB SPL (2.83V, 1m)
Maximum level: Over 104dB/pair at 2 meters
Impedance: 8 ohms nominal
Drivers: Bass, 12" long-throw; midrange, 7"; tweeter, 1" soft dome
Recommended power: 50–250 watts program
Finish: Walnut and oak standard
Dimensions (approx.): 14" x 27.5" x 19"
Weight: 78 lbs.
Price: $20,000/pair (stands: $1099/pair)

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and the scrupulous quality control that characterize the product justify its $20k retail. I've heard some audiophiles worry that thin-walled construction equates to flimsy. On the contrary, the 5/5's box weighs in at 78 pounds and is extremely strong, sturdy, astonishingly well damped (give the sides a healthy knuckle rap and your knuckes'll feel it the rest of the day). The exteriors, including the back, are beautifully finished in matched wood veneers (the review samples were covered in rift-cut oak, which yields a far tighter, more linear, and to my taste more attractive grain than the standard cut, but it is also one of the most expensive to mill).

The Sound

Let's begin with the three principal reasons the LS5/5 was designed in the first place: wider frontal dispersion, greater dynamic range, and deeper bass response. If the slot-loading was employed to answer a specific professional need, it nevertheless has real and substantial advantages for the home listener, too. Apart from those rare occasions on which I've housed omnidirectional speakers, this is perhaps the first time in my several decades in audio where I've been able to hear a consistent distribution of the entire frequency spectrum, including the highs, well off the central axis *without* compromising stereo imaging (more on this in a moment). No head-in-a-vise seating is required if you want to hear the swish of brush against cymbals in a drum set, the ring of the triangle in the third movement of Brahms' Fourth Symphony, all the little details and registrations of the assortment of percussion instruments in music such as Bartok's *Music for Strings, Percussion, and Celesta* or Boulez's *Pli Selon Pli*, the full richness of the overtones of violins and violas, not to mention brass and woodwinds, the ambience and atmosphere that can make the difference between a recording that sounds like a recording and one that really does appear to be a window onto the concert hall. If some portion of your serious listening regularly involves a partner or more, this is one speaker you might consider investigating.

What about imaging? What about soundstaging? And who listens seriously off-axis anyhow? Let me take the last first: I do…sometimes. My sofa is seven feet long, about the same as the distance between the outer front edges of the speakers when their axes are toed in directly toward the center listening seat. But the most relaxing place for me to sit is on the right where I can lean against the side and place a cup of coffee (or a martini if it's that time of day and I'm in the mood) on the armrest. Indeed, this is where I often sit when I am listening sheerly for pleasure—as opposed to the kind of critical listening to equipment when I am in audio reviewing mode—and I don't worry about such things as imaging, soundstaging, detail, resolution, and all the rest of it, just as I don't worry about these things when I'm sitting in a concert or recital hall. Anyhow, is sitting bolt upright with your head clamped in an imaginary vise so that you can hear so-called "true" stereo particularly conducive to a physical posture or a frame of mind receptive to appreciating, let alone enjoying music in the home?

I can't answer that for anyone except myself, but I can say that if you appreciate hearing a well-balanced sound up and down the spectrum, then the LS5/5 achieves this to a remarkable degree. What's more, because I'm not an electronics purist, I regularly use a balance control. Those who eschew same or keep it locked in the high-noon position have no idea how just a little judicious level adjustment between the two channels can assist in realizing a remarkably consistent soundstage in which I can clearly hear the position of soloists or groups within any given ensemble and follow movements when performances are staged for recording—even when I'm well off axis. No question, it's not as "good" as a centered position, but it prevents gross imbalances, it certainly keeps everything from collapsing into one or the other speaker, and it generates few if any imaging artifacts that distract me from the music. Best of all, *the instruments and voices sound like themselves.*

As for imaging precision and stability, the argument against wide dispersion has it that the wider the dispersion the more the sound bounces off the side walls, causing reflections that arrive later and mess up the imaging. There is truth to this—as far as it goes. But it fails to recognize that not all wide dispersion is created equal. As Derek Hughes points out in the interview that accompanies this review (published on theabsolutesound.com), what he (like his father and Dudley Harwood before him) is after is the most *uniform* possible dispersion over a *somewhat* wider window than that afforded by more directional loudspeakers. In the case of LS5/5, this translates into an approximately 60-degree spread from the central axis (see graphs in the BBC report). Like any other BBC monitor, the 5/5 should, of course, be set up so that the axis of each speaker is aimed directly at the central listening position, because that will yield the most precise imaging even if you aren't absolutely centered. But what you definitely should *not* do is what against all logic many audiophiles apparently like to do: aim the speakers straight ahead to get a so-called wider

and more spacious soundstage. To be sure, if you're sitting far enough away, the dispersion window here is wide enough to let you hear a well-balanced sound, but the penalty is that you screw up the superior imaging of which this speaker is capable in return for a rather diffuse and amorphous soundstage. And believe me, the 5/5 is capable of exceptionally precise imaging.

On all the recordings I regularly use to evaluate such things the 5/5 acquits itself as well as the finest speakers I've ever heard—for example, any of the Quad ESLs I've owned and still own, renowned for their imaging since day one—and better than most: the original Broadway cast of *West Side Story* (particularly in its latest vinyl remastering), where all the big numbers like the Dance at the Gym, the Prologue, "Cool," and "America" occupy a clearly identifiable space with precisely rendered lateral and front-to-back movements of singers and dancers within it; the Bernstein *Carmen* on DG, one of the most thrillingly staged-for-the-gramophone operas I know; ditto the Solti *Aida* (his first one, originally on RCA, now on a superbly remastered [with included Blu-ray Disc] from Decca); the astounding "Dry Bones" and "Set Down Servant" tracks from *Encore*, with the Roger Wagner Chorale live in concert, on which you can easily place the individual singers within the group when they sing or shout ad libs and bang utensils for effect (M&K Realtime direct-to-disc, not hard to find mint copies on Discogs and well worth the effort); *A Procession with Carols on Advent Sunday*, from the Choir of Kings College, Cambridge (Argo vinyl or streaming). This last is particularly instructive because the liner notes describe in great detail how the recording was made, where the choristers enter, how they come forward, where and when they pause, and the point at which they separate on their way to the stalls on either side of the knave.

Then there's the Ellington classic *Jazz Party in Stereo* (vinyl reissue)—how the musicians and engineers reveled in the possibilities of the still new stereophony in these fabulous 1959 sessions! "Tymperturbably Blue" features nine tympani spread across the soundstage playing the full musical scale, while in "*Maleletoba* Spank," the liner notes list the full panoply of percussion instruments and describe how they are positioned across the soundstage. Through the 5/5, they appear precisely as described without confusion or ambiguity.

Of course, a well-miked soloist who is supposed to be in the center is located there and stays there. Use a mono source, or switch to mono if you have that capability, and the image likewise stays right there perfectly centered. While I had the speakers, I found myself listening to several recordings of the Bach suites for solo cello. With the best ones, say, Queryas or Ter Linden (both on Harmonia Mundi), the cello on each recording—they are very different, the former a modern one recorded closer, the latter a period piece set farther back in a more generous ambience—was reproduced with extraordinary focus and presence and stays rooted in one spot, even when I occupied different places on the sofa.

Two final notes about imaging and soundstaging before moving on: First, while the cabinet is outstandingly well behaved and the speaker does not sound boxy, being instead exceptionally open in its presentation, the 5/5 is nevertheless still a box speaker and does not, will not, and cannot propagate sound in the matter of a dipole panel like Quads, Magnepans, or Sanders Sound. If a dipole presentation is what you want, you should look elsewhere from this or any other box speaker. Second, at one point during the evaluations a producer friend of mine dropped by for a listen. Now in retirement, she has over her distinguished four-decade-plus career produced more than 300 classical music recordings, most of high excellence, several award-winning for musical and sonic reasons, quite a number in regular use as references by me, my fellow reviewers at TAS, and reviewers at other audio publications. Within moments of listening to the 5/5, she exclaimed, "My God, do these things ever image!" Enough said.

On to loudness. Throughout most of the listening I used a Benchmark AHB2 amplifier, 100 watts per channel with large current reserves (29 amps) and absolute stability (the 5/5's impedance a nominal and benign 8-ohms). I think I was able to force the amp into clipping just once (cannon blasts on the Telarc *1812*), but even so, the reproduction was always ultra-clean and low distortion, with exceptional grip and control. Graham specifies the efficiency as 88dB sound-pressure-level (2.84 volts at one meter), which puts put it securely in the medium-sensitivity category, with maximum output at 104dB at two meters. By any measure this is extremely loud, much louder than I can sustain for any length of time and certainly louder than you should if you're concerned about the health of your hearing. Whether it's loud enough to satisfy headbangers and other rock listeners, I can't say, but it's certainly loud enough for the rock music that I enjoy, like Buddy Holiday, Paul Simon, and The Rolling Stones. I don't know if Cat Stevens is considered a rock musician or not (he's in the Rock and Roll Hall of Fame), but one of my favorite moments of a sudden leap in dynamics comes at the very end of *Tea for the Tillerman*, when the chorus shouts, "That happy day!" The effect here brought a big grin to my face, not so much for sheer loudness, though it is loud, as for how superbly the 5/5 registered the dynamic contrast. And big, heavily processed and synthesized rock recordings, like Paul Simon's *Graceland*, were powerfully reproduced at formidable levels.

As it happens, my critical listening spot is a little over two meters from the axes of the speakers. In my 2520 cubic-foot listening room (21' by 15' x 8') the combination of the 5/5 and the Benchmark forced me to cry "Uncle" well before the equipment did. I hauled out a number of really big symphonic, choral, and operatic works to put the 5/5 through its paces, like the Berlioz *Te Deum*, a huge work for augmented orchestra (notably in the brass), multiple choirs, and a massive organ (I have several recordings, my favorite the Colin Davis on Philips, but John Nelson's on Virgin has better sound). The 5/5s reproduced it spectacularly at a true "room-filling" level. The same with the Solti/RCA *Aida* (Decca CD or Tidal MQA), another powerhouse recording that can really take the roof off if that's how you care to listen to it.

All this duly said, I must caution that while the 5/5 possesses that difficult-to-define sense of real authority which I've discussed before when reviewing speakers, it is

not a speaker for *extremely* large rooms, where it will be a bit lost. But in normal-to-larger rooms, it is well-nigh ideal and probably better than many much larger speakers which might overload such spaces. As the Brits like to say, it's a matter of horses for courses.

Its combination of a wide dynamic window and a clean well-controlled cabinet when it comes to resonances and other spurious noises translates into truly refined and exquisite resolution, such that all details are there in right and just proportions, with nothing overemphasized and no hint of an edgy or overly analytical presentation, unless of course that is what is on the recording. Thus, you will hear the piano chords, which must be down some 70dB, bleeding through Jacintha's headphones on her *a cappella* "Moon River" from her Johnny Mercer album (Groovenote, vinyl, SACD, or streaming), rather more clearly, I think, than I've heard on most speakers this side of Quad ESLs, which the 5/5 easily rivals, while surpassing many extravagantly expensive speakers renowned for their so-called "resolution." And the notorious clicking of Martha Argerich's fingernails on any number of her piano recordings (try *Gaspard de la Nuit*, DG CD) is there in full evidence. Equally impressive is how composed and confident the 5/5 is handling all sorts of really intricate music without confusion, whether it's all the plucking and picking of the five stringed instruments on *The Dave Grisham Quintet* (vintage vinyl or Qobuz streaming); the contrapuntal lines of Bach's *Goldberg* variations arranged for chamber ensemble; or the craggy uncompromising complexities of Beethoven's *Hammerklavier* (any number of recordings—most recently those by Uchida, Levit, Perahia Steven Osborne, and Nelson Goerner). Piano recordings, by the way, are exceptionally satisfying with these speakers, and they readily reveal the differences both in recording methods and in instruments.

At one point during the evaluations Peter McGrath sent me an MQA copy of a recording he made of the Ehnes Quartet in concert performing Beethoven's opus 130 with the Great Fugue in its original and proper place as the last movement. This is Beethoven with his most intransigently gnarly and thorny both harmonically and with respect to counterpoint and fugal writing. Never have I been able to isolate and follow by ear any of the four instruments and their individual lines that I might want to concentrate on more easily than in this performance over these loudspeakers; yet, paradoxically, never have I heard the piece better presented as a gestalt of musicians in a real location, with gloriously beautiful string tone. I've not yet had a chance to listen to this recording on other speakers and systems, but the 5/5 certainly set the bar way up high.

Turning to the bass end, if the great Spencer Hughes designs had a *bête noire*, it was in the midbass and the deep bass. Of the latter there was little or none, while the former tended to be decidedly on the loose side, albeit by no means unpleasing. The 5/5 is a whole different animal here. First of all, the bass throughout the entire spectrum from, say, high thirties up into the upper bass is superbly strong, well defined, low distortion, and highly articulate. On Stokowsk's *Rhapsodies* album (RCA, vinyl reissue and SACD), the Liszt and Ionesco rhapsodies are reproduced with commanding power, definition, and weight, the lower strings perfectly rendered as regards texture and registration. Double bass on classic jazz recordings like *Soular Energy* is likewise well defined and highly articulate; and the way the 5/5 was able to dig out the one double bass and keep it present on the Sitkovetsky *Goldberg* arrangement for chamber orchestra was very impressive. I've heard some other speakers do as well in this regard, but they are few in number and even farther between. The Bernstein/Vienna Philharmonic arrangement of Beethoven's opus 131 string quartet (DG vintage vinyl, CD, Qobuz hi-res, and Tidal MQA) was reproduced with fabulously gorgeous string tone from every section, the basses again marvelously deep and weighty when they double the cellos (listen no further than the very end of the first phrase of the fugal theme in the opening movement).

With a -2dB point at 40Hz, do you need a subwoofer? If you're not a bass hound, then the easy answer is no. Trying to measure bass response in room is fraught with difficulties, because you wind up measuring the room as much as or more than the speaker itself. But in my room at my listening position, I got excellent bass that easily verified the 40Hz claim and that,

with room reinforcement, held up down to the mid-thirties before it dropped off. On my several recordings of *Also Sprach Zarathustra*, the 5/5 proved more than sufficient to reproduce the opening 32Hz organ pedal-point solidly and without doubling, assuming it's really there in the first place (in my opinion, the best remains the Mehta on Decca, better even than the Telarc). Likewise, the D minor *Toccata and Fugue* on Kei Koito's *Bach: Organ Masterworks Vol. II* (Claves, CD). So, for most of the review period, I used the speakers as supplied, as is my regular practice when reviewing, and was perfectly happy.

But toward the end I hooked up my REL subwoofer and was glad of it. As Fletcher and Munson demonstrated decades ago, at any given loudness level the ear is less sensitive to bass frequencies than to the rest of the range. I often find that in domestic settings with most full-range speakers, even very large ones, if you're going to try to bring that bottom octave to octave-and-a-half into a convincing balance with the rest of the range, you're sometimes forced into playback at levels too loud for the midrange and especially the presence region. This is where a good bass tone-control can really help, and the 5/5 certainly has a robust enough combination of efficiency and power handling to take a healthy boost. But most bass tone controls cover a few to several octaves, while the nice thing about a good subwoofer is that you can more precisely target the deep low-end without affecting everything from the midbass to in some cases the lower midrange. Take the *Zarathustra* recording: with a little help from the REL, the pedal point stays just that degree or three more present, more foundational if you will, during the big orchestral chords, which is surely what Strauss intended. Ditto for the organ in the massive climaxes of the Berlioz *Te Deum*, with the multiple choruses and augmented brass resounding above it.

Which brings me to overall tonal balance. Perhaps the best way to introduce that subject is to state that day after day on recording after recording over several months the 5/5 left me with the feeling that I was hearing back to the original source in a way that I've experienced with very few speakers. This uncanny impression of every recording sounding unique unto itself is not new to me, but it's been a rare enough occurance over my 50-plus years pursuing high-end audio that I need fewer than the fingers on both hands to tally the number of speakers which have allowed me to experience it. Fidelity like this, of course, breaks down into many aspects. Well recorded strings are a complete joy, as I discovered anew when I chanced upon another Sitkovetsky arrangement of the *Goldberg* variations, this time for a string trio on Orfeo, and a truly lovely sound it is. Accurate reproduction of voices is at the heart of BBC research, and it almost goes without saying that voices of every type and persuasion are beautifully reproduced, whether Ella her most virtuosic, Sinatra at his swingingest or most melancholy, Julie London at her most coolly detached, Doris Day at her sunniest, Fischer-Dieskau at his most resigned in *Das Lied*, Joyce DiDonato at her most grief stricken in *Winterreise*, or Gundula Janowitz, so radiant in *Four Last Songs*.

Of course, no speaker is perfectly neutral or perfect, period. As is often the case with a component, especially a transducer, that gives the impression of great neutrality, there is the worry that maybe it's too neutral, too gray, too reserved, insufficiently colorful, not dynamic enough, withdrawn even—you get the idea. I believe I've said enough throughout this review to suggest that none of these things applies to the 5/5. At the same time, however, it's not one of those speakers that possesses a single pronounced characteristic or collection of characteristics that cause audiophiles looking for something more interventionist to blow fingered kisses to the sky. In this sense it puts me in mind of some wise words written by the late Siegfried Linkwitz, audio theorist, researcher, designer, and one of the few people in high-end audio you could call a scientist without crossing your fingers behind your back: "Beware of exciting loudspeakers, they do not wear well over time. The easier it is to describe specific characteristics of a loudspeaker, the less likely the loudspeaker is a neutral transducer from electrical signal in to the acoustical signal out. The loudspeaker should just reproduce what is in the recording, not add to it nor subtract from it. Thus, what you hear should still hold surprises and not be tinted by familiar sameness" (linkwitzlab.com/accurate%20stereo%20performance.htm). (Makes me think speaker designers would do well to adopt the physician's mantra: First, do no harm.)

So it is with the 5/5. Highs are not always crisp, the midrange is not always luscious and succulent, and the presence region does not constantly project into room if the recording does not exhibit these things; and lord knows, it's not even "lively" if the recording happens to be too distant or just plain dull. But such is its ability to engage that my sense of involvement was consistently complete, so that I rarely wanted to stop listening, digging out recording after recording, especially long cherished favorites, just to hear how beautiful they can sound when they are beautifully recorded and faithfully reproduced. And my goodness, these speakers certainly get my toes to tapping on anything that's designed to do that, making it hard for me to sit still during the accelerating virtuoso climax to the morning raga on Ali Akbar Kahn's *Morning and Evening Ragas* (Connoisseur Society, vintage vinyl), and impossible to prevent me grabbing my baton to conduct my favorite recordings of *The Rite of Spring*. I was happy to luxuriate, indeed wallow in the sinfully rich sonorities of Strauss' *Don Quixote* in the Levine/MET orchestra recording (DG CD), the glorious opulence of Tchaikovsky's *Sleeping Beauty* (Dorati/Concertgebouw, Philips CD), or the sizzling riot of brass, swing, and drive in Bill Berry's *For Duke* (M&K Realtime direct-to-disc).

As with most audio reviewers, my reviews tend to focus on recordings that have good sound, especially of demonstration or reference caliber. But those are far from my steady diet. Most recordings of most music fall along a spectrum from excellent to bad, while some are very bad. I have two favorites that illustrate exactly what I'm talking about. The Frank Sinatra/Billy May *Come Swing with Me!* (Capitol, vinyl reissue, CD, and streaming) and the Bernstein/New York Philharmonic recording of the suite from Copland's *Appalachian Spring* (Sony, vintage vinyl and CD) are perhaps not truly *bad*, but

each suffers from an aggressive brightness, in the case of Copland almost searingly so, right in the presence region, such that I find them not pleasant on most speakers, particularly contemporary speakers that build in a rising top end. Through the 5/5 these recordings don't sound any better than they are, but they don't sound any worse either, which is to say, they're at least tolerable or better. Of course, I do take full advantage of the eight-band equalizer on my McIntosh C53 to tame them, not least because I love the performances, especially the Bernstein (my favorite recording of the suite), though I should add that far less correction is required with the 5/5 than with most other speakers I've reviewed. Listening fatigue as a function of this speaker's tonal profile and distortion is in any practical sense nonexistent.

To put the 5/5's tonal balance in more technical terms, I took some in-room measurements using the OmniMic V2 setup from Dayton Audio. What I got tended to confirm what I was hearing. The overall response is smooth and linear, with a slight downward slope, which is desirable, from around 100Hz to around 15kHz. Evident in read-out was the BBC's old friend the Gundry dip in the presence region (3kHz to around 7kHz), but I was rarely aware of it as such in the listening. (There's a complex technical reason why this is often the case with a Gundry dip; see REG's review, already cited, of the LS8/1, which has a similar characteristic, for a detailed explanation.) The only other anomaly is another dip between 150-200Hz, owing to the usual "floor bounce" effect. But in my room, particularly at the centered listening spot, the audibility of this was relatively slight because the dip itself is of fairly narrow band and shallow, while in the immediately adjacent regions above and below it the response is a bit elevated, which works against any impression of a hole in that region or any overall thinning out of the upper bass. To put it another way, I would not describe the sound of this speaker as either overly or insufficiently warm, neither is it in any way thin or lean. But then this is merely to reiterate that the speaker as a whole really does present a tonal balance that strikes me as essentially neutral with vanishingly low coloration.

A final point before concluding: As with most speakers that employ multiple drivers, the 5/5's derive from different sources and are made from different materials. Yet at no time during the long evaluation period did I ever feel I was listening to different drivers, different materials, different colorations. So carefully has Hughes chosen them and so scrupulously has he matched and optimized them through size, crossover, slotting, and other engineering solutions, not least very careful listening, to work as an integrated system, that the LS5/5 always appeared to speak with a single voice from top to bottom with great transparency and outstanding coherence.

Conclusion

Around the time I was wrapping up this review I was told of a gathering of local audiophiles and musicians at a Canadian shop that sells the 5/5, the idea being to play musical selections on several speaker systems to see how the two groups evaluated them. At some point during the proceedings the 5/5 took its turn in the hot seat. After putting it through its paces, the proprietor prepared to move them aside, whereupon the musicians got up and began putting on their coats. "We're not finished yet," said one of the audiophiles. "But we are," replied one of the musicians. "*That's* the speaker. That's the one that sounds like music, like real instruments. We don't need to hear anything else." And they left. Take the anecdote for what it's worth, but after living with the LS5/5s for nearly half a year now, I believe I know exactly what they meant. This loudspeaker belongs to a tiny group of my own personal "elite" that I could happily live with the remainder of my days, confident that I would hear every source reproduced to an extremely high level of fidelity indeed. tas