

May/June 2005
Volume 4 Issue 3

Recent and
Upcoming Events

WILSON[®] AUDIOFILES

June 10-11, 2005

Innovative Audio
New York
MAXX 2 Installation and
Dealer Training
with Peter McGrath

June 22-23, 2005

Definitive Audio
Bellevue, WA
Home Theater Event
with John Giolas
and Trent Workman

June 24-28, 2005

Genesis Audio
Athens, Greece
Dealer Training
with Peter McGrath

June 30-July 4, 2005

Extreme-Audio
Istanbul, Turkey
Alexandria Installation
and Dealer Training
with Peter McGrath

July 6-14, 2005

Sarte Audio
Spain
Alexandria Installation
and Dealer Training
with Peter McGrath

Authenticity in High End Audio

The following letter written by Karen Richardson of Genelec, Inc. was received by David Wilson late in April. It is reprinted in its entirety. Mr. Wilson's response to Ms. Richardson follows her letter. The letters are published in this newsletter to bring to light current issues within the audio world that are deeply concerning to Wilson Audio.

Friday, April 22, 2005

Mr. David Wilson
Wilson Audio Specialties
2233 Mountain Vista Lane
Provo, UT 84606

Dear Dave,

I was disappointed to discover disturbingly inaccurate and misleading information about the Genelec HTS4B Subwoofer on the Wilson Audio website. I want to request that you personally review this information; when you have done so I think that you will agree that the presentation is incorrect technically, and inappropriate for a high-end audio company. I have always had complete [sic] respect for you and Sheryl Lee over the twenty years or more that I have known you, and I am sure that you'll want to maintain your reputation for an ethical approach to business practices.

Here are the most significant areas:

- 1). The photo of the components is incomplete. The Genelec HTS4B has two passive woofers in addition to the single woofer that is pictured.
- 2). The description of the nature of the HTS4B photo is incomplete. The photos show the internal electronic components of each sub, but it is not mentioned that the HTS4B is a different type of product, one that, unlike the Wilson, is designed for the customer who does not want an internal electronic crossover, preferring to use either the bass management system in his processor or to choose an external crossover specific to his needs.
- 3). The web page states that the Genelec is "secured by staples." Untrue. The Genelec HTS4B is secured by adhesives specifically chosen for their suitability for a speaker enclosure of its size. As the Wilson Audio site says, "This often overlooked element is crucial to the proper performance of a loudspeaker." It is a standard procedure in manufacturing to staple an enclosure during the construction process to further assure that the adhesive is properly set. **(Continued as "Genelec Letter" on pg. 2)**

Genelec Letter (Cont. from pg. 1)

4). The reporting of the measurement of the amplifier wattage is incomplete and misleading. The HTS4B uses a woofer that has a dual voice coil; the design requires two channels of amplification, one for each voice coil. Perhaps the technician who made the measurements simply didn't understand the design. Once the design is understood it should become obvious that both channels of the amplifier must be considered when reporting wattage. To do otherwise is inappropriate. The measurement of 116 Watts RMS for a single channel may well be correct, depending on the load and frequency, which are not stated. In any event we do not make any claim as to RMS Wattage. The short-term (one full cycle at 100 Hz) RMS output from both amps is 7 watts shy of 400 watts.

5). The reporting of the measurement of the amplifier wattage is out of context. As we all know, wattage is largely irrelevant in an active loudspeaker, as it is a closed system, not an un-specified collection of separate components. Presentation of wattage alone, absent specification of acoustic output, harmonic distortion, power bandwidth, and overall frequency response can only be misleading.

6). The comparison is between apples and oranges. The Wilson Audio display is touted as "emphasizing the difference between a Genelec HTS4B and the Wilson WATCH Dog, both medium sized subwoofers." Unfortunately, the differences emphasized are not the meaningful one. While one could describe the two subwoofers as "medium sized," one could also, with greater accuracy and integrity describe them as very different in size, as the Watchdog is double the internal volume of HTS4B. This size difference also raises questions about the materiality of bracing and materials issues.

7). And lastly, yet most unbelievable of all, is that this is a comparison of a product with a \$3700 MSRP (the HTS4B) versus one, the WATCH Dog, which costs \$10,000 or more depending on the finish. The WATCH Dog would more appropriately have been compared to our HTS6 in the same price range.

I guess that I should be able to dismiss this all as a kind of flattery, rather than as something that may require a public response, but frankly I can't. I hope that you will immediately remove the webpage and print a retraction. I must ask for your assurance that there will be no repeat of this unfair presentation at future events, including the upcoming Home Entertainment Show in New York this week.

As long-time members of the high-end audio community, I believe that we are all best served by honesty and by seeking to build business by expanding awareness about high performance products. My experience suggests that you have historically preferred the statesman-like view. I would be saddened to think that you would now choose a marketeer's path rather than that of a high-end trailblazer and so alter my perception.

Sincerely,

Karen Richardson
Genelec Inc.

Below are the photos referred to, which are posted on the News and Views pages of our website, www.wilsonaudio.com. Following the photos is Mr. David Wilson's response to Ms. Richardson's letter. For the reader's convenience, the point in Ms. Richardson's letter to which Mr. Wilson refers is inserted in italics in Mr. Wilson's response.



(Wilson)

June 14, 2005

Ms. Karen Richardson
Genelec, Inc.
7 Tech Circle
Natick, MA 01760

Dear Karen,

As you may have noticed, Wilson Audio did not show at the New York Home Entertainment Show.

I was grateful to receive your letter of April 22, 2005 because of an opportunity it provides. As I was returning from Hong Kong on April 17, I was pondering the issues which threaten the authenticity of what we call “High End Audio” and agonizing over how to create a forum for increasing the awareness of these issues among the discerning music lovers our little “industry” is supposed to serve. How could the pathologies of the “commoditization” business model, which is metastasizing throughout much of an ailing audio industry, be set forth clearly with no editorial censorship?

As it turns out, Karen, you have unwittingly provided some provocative issues which are, I think, worthy of discussion. Contrary to the thrust of your letter, I actively try not to promote “inaccurate and misleading information.” Since I want to shed light on these issues, I am going to put the entire content of your letter, interspersed with my response, in our newsletter and possibly on a web site. My hope is that many others will learn of your concerns and mine and will weigh them carefully.

(Genelec) 1). *The photo of the components is incomplete. The Genelec HTS4B has two passive woofers in addition to the single woofer that is pictured.*

(Wilson) Item 1: On the website, in the caption describing the contents of the Genelec subwoofer, we have added the phrase: “Not pictured are two passive radiators inside the woofer cabinet.”

I first became aware of low frequency passive radiators in 1961 while I read H.F. Olson’s *Acoustical Engineering*.¹ Olson called them “drone cone phase inverters,” a nomenclature pregnant with meaning. The drone cone (which is “Olson speak”), passive radiator (which is “engineering speak”), or passive woofer (which is “marketing speak”) is not actually an electromechanical transducer; it does not have either a voice coil or magnet. Conveniently for the marketer, and confusingly to the consumer, when viewed from the outside of the enclosure, the drone cone actually looks like a woofer. Some companies even do their best to represent them as “woofers,” an example of which is to be found in the *2005 Stereophile Buyer’s Guide* page 112, wherein the reader will find Genelec claiming three woofers for the HTS4B. Other manufacturers on the same page take the opportunity, in the adjacent column, to describe their “woofers” in some way, such as “active aluminum cone” (Genesis) or “vented” (HSU). But Genelec is in “non-clarifying” mode . . . blank. Couldn’t you, Karen, have said something informative like, “one woofer and two passive radiators?”

There is an interesting performance tradeoff between drone cone/passive radiators (I refuse to call them “woofers”), on the one hand, and vents (ports) on the other. Their effect on overall system performance is roughly similar. In terms of sheer low frequency system output, the drone cone can be shown to have some advantages of its own. Ports can exhibit losses due to air friction and viscosity. They can also exhibit “chuffing,” an audible noise due to turbulence. The air in a port, however, weighs less than the mass of the drone cone, its suspension and any additional mass added to it for tuning purposes. Thus the drone cone can exhibit energy storage, bass overhang, and inferior transient response compared to a well-engineered port. Since I value transient performance as a means of achieving a seamless blend with the faster full-range system used in conjunction with the subwoofer, I have chosen the vented approach. Genelec’s choice of passive radiators is a valid engineering decision based on their priorities. But, calling them “woofers” is cynical, misleading marketing hype not appropriate to the mission of “High End Audio.”

(Genelec) 2). *The description of the nature of the HTS4B photo is incomplete. The photos show the internal electronic components of each sub, but it is not mentioned that the HTS4B is a different type of product, one that, unlike the Wilson, is designed for the customer who does not want an internal electronic crossover; (Continued as “Wilson Response” on pg. 4)*

Wilson Response (Cont. from pg. 3)

preferring to use either the bass management system in his processor or to choose an external crossover specific to his needs.

(Wilson) Item 2: The description of the nature of the HTS4B is certainly complete enough.

Everybody who saw the exhibit could see that the configuration of the HTS4B is less ambitious in its versatility than the WATCH Dog®, and that it is vastly less expensive. That wasn't the point of the exhibit. You describe the product on your data sheet as a Home Theatre Subwoofer and you also note that, "Bass roll-off rate and crossover phase can be adjusted to suit different acoustical environments and subwoofer positioning." Later in your text, you again mention its "versatile acoustical adjustments." So it seems clear that the product is not intended to relegate all acoustical adjustment to the processor or external electronic crossover, as you imply. It is, therefore, disingenuous to call it a "different type of product" than the WATCH Dog. The HTS4B is just simpler; that's all. Everyone is intelligent enough to see that – just trust them.

(Genelec) 3). *The web page states that the Genelec is "secured by staples." Untrue. The Genelec HTS4B is secured by adhesives specifically chosen for their suitability for a speaker enclosure of its size. As the Wilson Audio site says, "This often overlooked element is crucial to the proper performance of a loudspeaker." It is a standard procedure in manufacturing to staple an enclosure during the construction process to further assure that the adhesive is properly set.*

(Wilson) Item 3: On the website we have added the words "and adhesive."

The most effective and elegant way of pressing and securing panels or other pieces to be bonded by adhesives is with clamps and jigs. Clamps allow repeatable high pressures to be applied. The use of staples is cost-effective as long as the material is quite soft. Very dense materials will not allow the staple to penetrate uniformly, thus resulting in uneven "clamping pressure." The materials used by Wilson Audio are too dense to allow the use of the staple shortcut.

(Genelec) 4). *The reporting of the measurement of the amplifier wattage is incomplete and misleading. The HTS4B uses a woofer that has a dual voice coil; the design requires two channels of amplification, one for each voice coil. Perhaps the technician who made the measurements simply didn't understand the design. Once the design is understood it should become obvious that both channels of the amplifier must be considered when reporting wattage. To do otherwise is inappropriate. The measurement of 116 Watts RMS for a single channel may well be correct, depending on the load and frequency, which are not stated. In any event we do not make any claim as to RMS Wattage. The short-term (one full cycle at 100 Hz) RMS output from both amps is 7 watts shy of 400 watts.*

(Wilson) Item 4: Karen...Please!

We were perfectly aware of the dual voice coils and dual-channel amplification requirement. The measurement of 116 watts AC rms is not for a single channel, but is the sum of the two channels. This measurement was only valid until the protection circuit came on at about 10 seconds. In protection mode we measured 18 watts AC rms per channel. We realize that you do not make any claim to rms wattage, preferring instead to use the much less stringent, "short term output" specification. I must, however, express my amazement at your criterion for "short term" . . . "one full cycle at 100Hz!" So your amps will put out 7 watts shy of 400 watts for 1/100 second?!

Can you imagine an amplifier manufacturer such as C-J, Krell, or Parasound producing an amp they advertise as 400 watts, which when reviewed by *Stereophile* or *Hi-Fi News* only puts out that power for 1/100 second, 116 watts for 10 seconds and 36 watts after 10 seconds? Such performance would clearly not be acceptable and is not characteristic of the direction high-end audio should go.

I am aware that some may argue that there is no such thing as "watts rms"; however, Davis and Davis state, "professional power amplifiers are usually rated in average power output in watts. This rating is calculated from the root mean square voltage (rms V) squared and divided by the rated (not measured) output impedance of the amplifier."² Grob states that, "Real power = VI cos Θ where V and I are in rms values, to calculate the real power, in watts."³

So, while the rating might more accurately be termed "average watts," it is calculated using rms values. Genuine, low-distortion, continuous average output capability is the "gold standard." Sterling performance in that area is harder to achieve (and more costly) than other measurement standards. I remember in the late '60's through '70's, marketers trying to deceive consumers with power amp rating schemes such as "peak power," "music power," or "peak to peak power." **(Continued as "Wilson Response" on pg. 5)**

Wilson Response (Cont. from pg. 4)

Such rating schemes give misleadingly elevated wattage values compared to the true continuous average measurement. And if instantaneous, short-term, or whatever you want to call it, is adequate for subwoofers, why not for full range amps?

There exists the opinion that instantaneous power is adequate for some subwoofer applications. While some may promote the merits of that approach, I believe strongly that “High End Audio” should be concerned with the ideal...not the adequate.

One of the characteristics of the old McIntosh MC-240, MC-275, and Marantz 8 and 9 that so impressed the early reviewers was that they actually met their rated continuous average wattage ratings and did it with relatively low distortion. They were authentic.

When we claim to be “High End Audio,” we should be offering to our valued customers that thing which is ideal...not merely expedient!

The WATCH Dog is rated at 400 watts continuous rms. Under the same test protocol, where the summed outputs of the HTS4B was only 116 watts rms for ten seconds, the WATCH Dog produced 598 watts rms “...for many minutes, which in this case was limited by the load resistors reaching their thermal breakdown limits.” The WATCH Dog is authentic.

(Genelec) 5). The reporting of the measurement of the amplifier wattage is out of context. As we all know, wattage is largely irrelevant in an active loudspeaker, as it is a closed system, not an un-specified collection of separate components. Presentation of wattage alone, absent specification of acoustic output, harmonic distortion, power bandwidth, and overall frequency response can only be misleading.

(Wilson) Item 5:

According to Genelec’s published data-sheets, the HTS4B is equipped “...with modern high efficiency amplifiers rated at...400 watts...” Its “amplifier section” features “short term amplifier output power...” of “400 watts.” Genelec’s acoustical specifications of their products are nicely informative, but your statement that wattage is irrelevant is wrong-headed. If wattage ratings are going to be used by the consumer as part of his purchasing decision – and they often are – they should be accurate and rigorous, not merely debatable.

(Genelec) 6). The comparison is between apples and oranges. The Wilson Audio display is touted as “emphasizing the difference between a Genelec HTS4B and the Wilson WATCH Dog, both medium sized subwoofers.” Unfortunately, the differences emphasized are not the meaningful one. While one could describe the two subwoofers as “medium sized,” one could also, with greater accuracy and integrity describe them as very different in size, as the Watchdog is double the internal volume of HTS4B. This size difference also raises questions about the materiality of bracing and materials issues.

(Genelec) 7). And lastly, yet most unbelievable of all, is that this is a comparison of a product with a \$3700 MSRP (the HTS4B) versus one, the WATCH Dog, which costs \$10,000 or more depending on the finish. The WATCH Dog would more appropriately have been compared to our HTS6 in the same price range.

(Wilson) Items 6 & 7: I termed the systems “medium sized” because both companies produce subwoofers which are substantially larger than the subject units, yet neither the HTS4B nor the WATCH Dog are “small” or “compact.” The actual “acoustical volume” of the WATCH Dog is only 21% larger than the HTS4B. The greater overall size of the WATCH Dog is primarily a result of its very substantial electronics being housed in its own separate, sealed compartment within the rear of the enclosure. This approach reduces the built-in electronics’ exposure to high-energy low-frequency air-borne displacement and structurally transmitted mechanical energy. It is an expensive approach and one that consumes space, but we have found it contributes to higher resolution sound.

We have also found that the high-density materials chosen for the enclosure, as well as those used for bracing, contribute to better sound quality by increasing structural integrity and resonance control. We have found it sonically beneficial to use the highest density structural materials both in the low-frequency enclosures of our full-range systems and in the WATCH Dog. Materials testing has shown that properly selected higher density, harder materials, with their higher impulse resonant frequencies, faster settling time, and simpler resonance signatures are a more elegant and effective, if more expensive, choice than lower density, softer, less expensive options.

The cheaper, more “efficient approach” can support mass quantities of low-frequency sound most suitable for the low-frequency effects channel on a home theater. Where the improved resolution of the **(Continued as “Wilson Response” on pg. 6)**

Wilson Response (Cont. from pg. 5)

WATCH Dog's more elegant approach is most apparent in the fine reproduction of music.

In the marketplace that Wilson Audio serves, size, price, and quality of execution are all important factors in the purchase decision and the end use application. Many discriminating buyers who acquire WATCH Dogs use them openly (as opposed to "built-in") in elegant color-coordinated living rooms. Neither the greatly added size of the similarly priced HTS6 nor the crude (utilitarian?) finish of both the HTS4B and the HTS6 would be acceptable to such buyers.

Ironically, Karen, it was an "ugly as a virtue" marketing approach associated with Genelec that I started hearing from the field that motivated me, ultimately, to create the exhibit. Whether it was an official strategy created by you, or independently by Genelec's promoters, I don't know. The spin went something like this: "High end audio speakers are just overpriced, under-performing pretenders, which can't play loudly enough for a really good home theater. Genelec, however, doesn't waste money on a beautiful finish. Instead it puts all the money into the "guts" of the system... the drivers, the powerful amplifiers, and the state-of-the-art enclosure structure." One dealer of Genelec even told me that the amps in the HTS4B were more powerful than the John Curl designed Halo amps I use in my own home theatre!

I had heard several dealers were using this approach. I therefore took understandable action to allow people to decide for themselves. We made it clear in our exhibit that both products were from "well-regarded manufacturers" and that the WATCH Dog was more than twice as expensive as the HTS4B. We only asked the viewer to consider, based on the cost and thoroughness of content, whether or not the WATCH Dog is "overpriced." That was all.

This brings me again to my deep concerns over issues that I see threatening the authenticity of what is called "High End Audio." It is my understanding that Genelec products are made in Europe where labor costs are substantial. However, the dirt cheap, offshore outsourcing of many other well-known "brand names" is rarely disclosed to the readers of audio magazines and potential customers of "High End Audio." It is disgraceful that the huge reductions in labor costs and overall cost of goods sold is very rarely reflected in a commensurate reduction in final retail price to the customer. Mediocre materials are used in speaker enclosures from well-known brand names. Cheap injection-molded parts can be found in many fairly expensive and some very expensive speakers. Poorly managed companies with little in the way of business or technical credentials enter the scene, garner a good review, harvest their customers' money, and go out of business. What is the definition of "High End Audio" anyway? What are the performance, manufacturing, customer service, and sonic standards of this "industry?" Personally, I think that "High End Audio," Harry Pearson's nomenclature of years ago, has been distorted and exploited to the point where the term is now meaningless.

While there are many companies that hold to genuinely high standards, there are many more for which even the concept of high standards is either alien or an undesirable business expense. I believe that passionately pursuing ever-higher standards because it is your art and your mission is what excellence is all about.

Karen, you chair the High Performance Audio Subdivision Leadership Committee of the CEA. My fear is that if the industry you represent does not get serious and establish standards that clearly delineate excellence to match the promise of "High End," it will continue to decline into irrelevance. Karen, I was a little hard on you in this response, but some of your positions reflect exactly the mess this industry finds itself in today.

Yours truly,

David A. Wilson
President
Wilson Audio Specialties, Inc.

¹ Olson, Harry F.; *Acoustical Engineering*; D. Van Nostrand Co., Inc.; 1957; pg. 161-162.

² Davis, Don, and Davis, Carolyn; *Sound System Engineering*, Second Edition; Howard W. Sanis & Co., 1987; pg. 402.

³ Grob, Bernard; *Basic Electronics*, 4th Edition; McGraw-Hill; 1977; pg. 507.