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ANUARY 2014

High Fidelity  
miesięcznik hi-fi, hi-end



A SYNDICATED  
POLISH ARTICLE



\$3900

COUNTRY OF ORIGIN



UNITED STATES

This review first appeared in the December 2013 issue of [hi-end hifi magazine High Fidelity](#) of Poland. You can also read it in its original Polish version [here](#). We publish its English translation in a mutual syndication arrangement with publisher Wojciech Pacula. As is customary for our own articles, the writer's signature at review's end shows an e-mail address should you have questions or wish to send feedback. All images contained in this review are the property of High Fidelity or JBL. - Ed

**Reviewer:** Wojciech Pacula

**CD player:** Ancient Audio Lektor Air V-edition

**Phono preamplifier:** RCM Audio Sensor Prelude IC

**Cartridges:** Miyajima Laboratory Shilabe & Kansui

**Preamplifier:** Ayon Audio Polaris III Signature with Regenerator power supply

**Power amplifier:** Soulution 710

**Integrated amplifier/headphone amplifier:** Leben CS300 XS Custom

**Loudspeakers:** Harbeth M40.1 Domestic + Acoustic Revive custom speaker stand

**Headphones:** Sennheiser HD800, AKG K701, Beyerdynamic DT-990 Pro 600Ω vintage, HifiMan HE6

**Interconnects:** CD/preamp Acrolink Mexcel 7N-DA6300, preamp/power amp Acrolink 8N-A2080III Evo

**Speaker cable:** Tara Labs Omega Onyx

**Power cables (all equipment):** Acrolink Mexcel 7N-PC9300

**Power strip:** Acoustic Revive RTP-4eu Ultimate

**Stand:** Base IV custom under all components

**Resonance control:** Finite Elemente Ceraball under CD player, Audio Revive RAF-48 platform under CD player and preamplifier, Pro Audio Bono PAB SE platform under Leben CS300 XS

**Review component retail in Poland:** zł 44'900/pr



I spent nearly six years working as sound engineer in the Juliusz Slowacki Theatre of Krakow. Never in my wildest dreams did I imagine that this rather short period of my life would so much influence my thinking and turn out to be so enriching. Even a dozen years later I still draw on these experiences. Above a powerful analog Soundcraft mixing board in the sound control room, there hung seemingly perfectly normal three-way American Altec/Lansing speakers. The theatre stage and auditorium were equipped with speakers from the same manufacturer as well as by JBL for the side towers. While the latter looked normal again—hornloaded tweeters but otherwise classic cabinets—the main speakers were unlike anything else used at the time.



*Western Electric Mirrophonic Sound System, an oldie but powerful loudspeaker showcased at the High End 2013 in Munich*

They were powerful twin enclosure designs. The subwoofer unit sported four 30cm woofers in a sealed enclosure, the other unit was equipped with a midrange driver loaded into a massive horn over a meter long and a tweeter loaded into an only slightly smaller horn. What's more, the stage monitors used 36cm drivers with a centrally placed horn tweeter. Such designs were unique then when most PA systems were based on small integrated units like those from JBL. As it happens, Altec/Lansing and JBL share common history.



**Company founder James Bullough Lansing** was born James Martini on January 14<sup>th</sup> 1902 in Macoupin County (Millwood Township) of Illinois. From a young age he showed an interest in DIY and radios. Little did he know then that his life would become so associated with transducers that for many his initials would forever be synonymous with speakers. It all started in 1930 when Western Electric created a department to provide support and design of speakers and electronics for movie theaters. This was the beginning of Electrical Research Products Incorporated (ERPI). By 1938 WE sold its shares in this department. A year later they were bought out by a group of their own engineers. Those gave it a new name, Altec Service Company (Altec as in 'all technical'). The company did well but to grow needed production facilities to manufacture its own products. For this purpose it purchased Lansing Manufacturing Co. in 1941 when that was on the verge of bankruptcy. Now they changed their name to Altec Lansing. After a short time they were awarded a government contract for the development of magnetic detectors for U.S. submarines. The research in that field resulted in the Alnico V magnet material that would also find use in loudspeakers.



JBL Paragon

After his mother's death in 1924, James Martini moved to Salt Lake City. There he founded Lansing Manufacturing Company to produce car speakers. To continue expansion, his company then moved to New York by 1927. October 6<sup>th</sup> of the same year saw the premier of *The Jazz Singer*. It was the first ever feature-length Warner Brothers movie with sound. It became a tremendous success. Now the history of high-quality loudspeakers began in earnest. Since existing PA systems were rather primitive, MGM decided to do something about it. Douglas Shearer, chief sound engineer at Metro Goldwyn-Mayer, contacted James Lansing. Between 1933 and 1935 they co-developed basic design ideas for hornloaded speakers which would become the industry standard. In 1936 Lansing and Sharer's sound system received an award from the Academy of Motion Picture Arts and Sciences. Everything went smoothly until military manoeuvres in 1939 killed Ken Decker in an accident. This businessman had reliably dealt with Lansing Manufacturing's financial matters. An attempt to find a replacement failed. By 1941 the company found itself on the verge of bankruptcy. What helped it survive was the acquisition of its shares by Altec Service Company.



Jim Lansing became vice president of the new company Altec Lansing. In those years he developed the A-4 theatre system which for many years was the cinema standard. Unaccustomed to working under someone else's leadership, he left Altec Lansing when his five-year contract expired in 1946. On October 1st of the same year he started a new company, Lansing Sound Inc. Its principals were James B. Lansing, Chauncey Snow and Chester L. Noble. Since the name Lansing was commonly identified with the former company, Altec Lansing's lawyers objected to it being used by the new outfit. It was finally agreed that the new company change its name to James B. Lansing Sound Inc. or JBL for short. Although its first designs were very promising, the company soon headed for financial disaster. James Martini may have been a brilliant engineer and designer but he was a lousy businessman. Devastated by rising debts, he committed suicide as a result of depression on September 24th, 1949.

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**Paradoxically the death of JBL's founder** facilitated a cash infusion. Jim Lansing had secured a high life insurance in the name of his company. Now payment of this policy helped save the business. It was company treasurer William Thomas who reactivated James B. Lansing Sound Inc. After buying one-third of its shares from Lansing's wife, he became its sole owner. In 1969 JBL was purchased by Jervis Corporation, part of Harman Kardon. Now Jervis Corp. changed its name to Harman International Industries Inc. and Arnold Wolf, creator of the Paragon's industrial design, became JBL's president. It's worth noting that Wolf is also credited with the JBL logo.



JBL Everest DD66000

As the iconic product of early JBL years, the Paragon was referred to as the company's second *project* speaker. The first had been the Hartsfield. In 1980s an urgent need arose to develop a new flagship or third 'project'. The Project Everest became the brainchild of Bruce Scrogin, president of JBL International. Since the Paragon whose production ended in 1983 sold almost exclusively to Japan, it was decided that the new flagship speaker would be targeted exclusively at that market. As consultant JBL hired Keizo Yamanaka, one of the best-known Japanese audio journalists (such co-operation between audio journalists and manufacturers is quite common in Japan where almost every prominent editor has a contract with one of the big companies).

The project originally meant to create an upgraded version of the already existing design consumed much time and money. However its extensive evolution led to a final configuration that was based on a new concept unlike anything created before: the DD55000 Project Everest. DD stood for *defined directivity*, an original Don Keele concept to provide a wider optimum imaging area by using asymmetrically positioned speakers. Project Everest was a giant success. Over 500 pairs sold. Given their price, that was a staggering number. It remained in production until the 1989 launch of the smaller K2. Design work on the latter had begun a year earlier. The plan was to introduce a new flagship speaker every four or five years. Whilst the Everest had been a singular model, K2 was designed to launch an entire speaker series. The basic premise was a two-way looking similar to the Everest but with a simpler design. T



JBL Everest DD55000

The K2-S9500 range topper's concept again came from Bruce Scrogin who assembled almost the same team of engineers and designers as before to execute it. All drivers and crossovers were from the ground unlike the Everest which used pre-existing drivers. The K2 featured a bi-radial horn and in 1989 the K2-S9500 and K2-S7500 were presented to the press. In 1993 the smallest K2-S5500 joined them. I happen to still remember its European debut at the Berlin IFA show. Harman Kardon had rented the entire Berlin Opera to hold demonstrations, concerts and associated events. It was the first and only time I spent a six full days at any audio show.

<p>LESS+LOSS</p> <p>LESS+LOSS</p> <p>LESS+LOSS</p> <p>LESS+LOSS</p> <p>LESS+LOSS</p>	<p>BACK TO THE FUTURE</p> <p>aqua</p>	<p>INCIDENT</p> <p>20th ANNIVERSARY</p>	<p>Omnidirectional Loudspeakers</p> <p>GERMAN PHYSIKS</p> <p>HIGH END TECHNOLOGY</p>
<p>Mythology M1</p> <p>Quite possibly the best bookshelf speaker. Ever.</p> <p>ENIGMA COUSTICS</p>	<p>CUTTING EDGE COMPUTER AUDIO</p> <p>PURE MUSIC®</p> <p>award winning audiophile music player software</p> <p>PURE VINYL™</p> <p>linking LP playback with high resolution digital audio</p> <p>channel-d.com</p>	<p>Soltanus Acoustics</p>	<p>Gato audio</p> <p>The Absolute Pinnacle of Danish High End Audio</p>

The K2-S5500 pioneered a crossover referred to as 'charge-coupled linear definition dividing network' by using used a battery to maintain a constant biasing voltage. This was to minimize distortion by preventing the music signal from crossing the capacitors' dielectric zero-point [a technique once again used by Avantgarde Acoustic – Ed]. Although the smallest of the series, the speakers looked fantastic and sounded just as good.



JBL Everest DD66000

At the beginning of the 21<sup>st</sup> century or 2003 to be precise, we had the launch of the K2 S9800 followed by the K2 S9900 a few years later. Both were based on the Project Everest. As early as 2002 however work had begun on the revitalization of the original Everest. Planned for the company's 60<sup>th</sup> anniversary and presented in 2006, the DD66000 was destined for success. It received awards all over the world, especially from the Japanese *Stereo Sound* magazine which had similarly awarded all of its previous incarnations. The story ends with a broadening of the Everest series. A few years ago JBL launched the DD65000 and this year the most expensive DD67000 with its distinctive front baffle of carbon fibre.



JBL Everest DD67000

It so happens that during CES and thus also in 2013, JBL presented one of its least expensive iterations of these speakers as the S3900. That's a three-way with a 25cm woofer and medium-high frequency driver covering 850Hz to 12kHz. Jim Garrett, director of sales and marketing for the Harman Luxury Audio Group and Loudspeakers, says that one of its design objectives was to be easier to set up and position than the S4700 introduced a year earlier whilst maintaining the advantages of the Project Everest DD67000 and Project K2 S9900. The design uses dual paper cone woofers with very large 3-inch coils. Its 175Nd-3 medium-high frequency driver with AquaPlus treated Titanium diaphragm and neodymium magnet loads into a bi-radial horn. The 138Nd ultra HF driver with its pure Titanium diaphragm also loads such a bi-radial horn.

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**Music selection used for the review:** *Paganini For Two*, Gil Shaham, Göran Söllscher, Deutsche Grammophon/JVC 480 246-5, XRCD24 (1993/2009); *Black Sabbath, 13*, Vertigo/Universal Music LLC (Japan) UICN-1034/5, 2 x SHM-CD (2013); *Charlie Haden & Chris Anderson, None But The Lonely Heart*, Naim 022, CD (1998); *Depeche Mode, Should Be Higher*, Columbia Records 758332, SP CD (2013); *Dominic Miller, Fourth Wall*, Q-rious Music QRM 108-2, CD (2006); *Eva Cassidy, Songbird*, Blix Street Records/JVC VICJ-010-0045, XRCD24 (1998/2010); *Hilary Hann, Bach Concertos*, Jeffrey Kahane, Los Angeles Chamber Orchestra, Deutsche Grammophon/Universal Music LLC [Japan] UCCG-50058, SHM-CD (2003/2011); *John Dowland, Lachrimae or Seven Tears*, Jordi Savall, Hespèrion XX, Alia Vox AVSA9901, SACD/CD (2013).; *Mel Tormé, The Legend of Mel Tormé*, Going For A Song GFS360, CD; *Mike Oldfield, Tubular Bells*, Mercury Records/Universal Music LLC (Japan) UICY-40016, Platinum SHM-CD (1973/2013); *Nat 'King' Cole, Welcome to the Club*, Columbia/Audio Fidelity AFZ 153, SACD/CD (1959/2013); *Patricia Barber, Companion*, Premonition/Mobile Fidelity UDSACD 2023, SACD/CD (1999/2003).



Regardless whether all or only some of their drivers are so loaded, hornspeakers share several features. It matters not which company makes 'em or what design idea finally manifests in the telltale acoustic shapes. Hornspeakers are big, fast and their sound waves seem to reach us more instantaneously. This is largely similar to headphones but includes tangible physical bass without any spatial location problems.





The S3900 adds to these features a few of its own which positions it slightly outside the 'hornspeaker mainstream'. The JBL plays music saturated and thick unlike similar designs which thin out the musical fabric by favouring attack and speed. The latter of course remain present but not for their own sake. The dense sound, large stage depth and fantastic tonal balance meant that they always showed me something good and interesting no matter what kind of music I played or at what volume. They should never get boring. Although I used them with most musical genres that interest me, I couldn't help but start with an album that features double bass in the lead. Double bass like those two woofers in front of me? Perhaps it wasn't the closest possible tie-in but it turned out to be quite accurate. I'd bought 1997's *None But The Lonely Heart* by Charlie Haden and Chris Anderson on the Naim label straight after its release whilst on the wave of enthusiasm for the hit disc *Beyond The Missouri Sky* where Haden had played with Pat Metheny.



Whilst I absolutely loved *Beyond*, the Haden and Anderson duo seemed downright boring by comparison. I had a problem both with its length (about 30 minutes too long) and track selection. Some ten years later my musical preferences have made a U-turn. Now it's the Metheny album which I consider to be flashy and musically empty. It also turns out to be far inferior on sound production to the album Ken Christianson recorded as chief sound engineer for the Naim label. The JBLs confirmed my assessment and showed even more explicitly than most very expensive speakers what the true power of this piano and double bass duo is.



The lows were strong and dense. At the same time they had high resolution – high enough to leave me in no doubt that Christianson had recorded Haden with just two stereo microphones (they look like AKG C414B-ULS in the photo yet I'm not sure) whilst the sheer bass power could indicate a third close-up mic to pick up more direct sound. That's not the case though. This recording used Naim's patented *True Stereo* technology and it was the JBL's slightly stronger more resolving bass which I noticed immediately. The piano was shown as it should have been, from a distance yet with great definition enveloped by a beautiful acoustic environment. The horn-loaded drivers proved great at complementing the lower and upper bass without sounding detached or attention-seeking. That was unusual because horns are always audible. They generate specific distortion usually at the edges of their bandwidth. The JBLs weren't free from it but on most recordings this didn't distract. The duo was thick and dark in the sense that the treble could be deduced rather than being heard as something separate. Superb!



Speaking about distortion, I'd like to mention how the horns affect the S3900. Let's not pretend they don't. Part of the crossover range between 800-900Hz is emphasized. This range is responsible for midrange body and so-called presence. The JBLs didn't sound aggressive in that they did not irritate with these transients. Even so the lower range of female vocals and part of the violin's bandwidth especially when recorded slightly hot as by Deutsche Gramophone were somewhat elevated and s nasal. There was no trace of brightening or glassiness however. The Americans behaved coherent and well thought-out to embarrass many an expensive hornspeaker.



The change in tonality emphasized the violin, enlarged it and accented its nasal characteristics. This happened to Gil Sham's instrument on *Paganini For Two* and Hilary Hann's on *Bach Concertos* even though the former was released by JVC as XRCD24, the latter by Universal Japan as SHM-CD (in other words two theoretically top CD formats). In part this was the result of certain DG recording conventions but also it was due to the JBL character which deviates from neutrality in this particular range.

<p>Black Pearls</p>	<p>Omnidirectional Loudspeakers</p> <p>GERMAN PHYSIKS</p> <p>HIGH END TECHNOLOGY</p>	<p>totaldac</p> <p>MUSIC SERVER &amp; DAC</p> <p>DSD COMPATIBLE</p>	<p>FIRST WATT</p> <p>F6</p> <p>25 watts of Mosfet power</p>
<p>VOX OLYMPIAN &amp; ELYSIAN</p> <p>WWW.LIVINGVOICE.CO.UK</p>	<p>CUTTING EDGE COMPUTER AUDIO</p> <p>PURE MUSIC®</p> <p>award winning audiophile music player software</p> <p>PURE VINYL™</p> <p>linking LP playback with high resolution digital audio</p> <p>channel-d.com</p>	<p>HIGH DEFINITION IS NO LONGER DEFINED BY HIGH PRICE</p>	<p>QAT AUDIO TECHNOLOGY</p> <p>MS5 MUSIC SERVER</p> <p>2013</p>

It was different with lower-pitched string instruments on *Lachrimae or Seven Tears* by Jordi Savall and Hespèrion XX. The latest Alia Vox sounded equally thick and accented on the lower midrange as the Haden album. This was due to another JBL trait, namely their ability to build a full mature midrange particularly for male vocals and instruments having a similar tonal centre. Playing Nat 'King' Cole, Dominic Miller's *Fourth Wall* or even Mike Oldfield's *Tubular Bells* on the latest Platinum SHM-CD release proved convincing enough. If you don't own these discs, use others characterized by a saturated lower midrange that's 'opened up' by a treble that won't allow it to close off in a thick pulp. What you get is something that happens with the best of warm tube amps and fast speakers: the unity of tonality and micro dynamics, tangibility and soundstage depth.



Talking of Haden's album, I mentioned how it conveyed the recorded acoustics with great taste. This was possible with the very careful tonal setting of the horn drivers and the woofers' fullness. The latter were powerful without exaggeration in the context of this design. One won't ever run out of bass. It will extend very low though won't be particularly selective at the very bottom. However at a few hundred cycles resolution begins to far exceed average to be as good as that of the Amphion Krypton3 which were fantastic in this respect. And the Americans still provided a larger and therefore better sense of physical presence than the Finnish revelations.



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This proved beneficial to calm dynamic instrumental and vocal music but also electronica. That why I mentioned Oldfield. The JBL offers a very large intense sound. It perfectly conveys spatial aspects including those around the listener as long we talk of foreground. What's further back is of lesser importance. Stage front has preference. Hence Cole's fantastic vocals, the dense sound of electronic instruments and the overall sense of fullness on this type album.



Thickness, fullness and coherence are the characteristic features of this speaker. Admittedly these are not the kind of aspects we immediately look for in hornspeakers. I'll go even further and say that they are often sacrificed at the altar of more obvious advantages. We tend to give up on them in good faith believing that speed, selectivity and dynamics will make up for them. Hence the S3900 seems very special to me. It doesn't abscond with anything from the above list but adds to it something more of its own. An example of that is their clean treble showing the size of instruments in this range. The horn drivers work so well together that I couldn't identify where they crossed nor notice sonic artifacts to indicate the transition point. There's detail and resolution supported by meat. That held true not only for small ensembles but also big ones. Wind and brass instruments are customarily hornspeaker favorites due to similar sound reinforcement. With the JLB they were sound strong and incisive but not aggressive. The latter is key. It's what distinguishes speakers with aspirations to sound good from those which really deliver. With horns you can't ever be sure.



**Conclusion.** In addition to small classical and jazz ensembles as well as electronica, I also tested the S3900 with Megadeth, Metallica, Depeche Mode, Portishead and old 1930 recordings. They all held interest and proper power to be dynamic, bold and strong. The first soundstage plane dominated where guitars, drums and vocals were set slightly ahead of the main line and exhibited large volume, i.e. size *and* body. These speakers don't pretend to be correct but neither do they highlight their differences. They don't curry favors because they're different.



Their advantages make a good counter proposal to more conventional speakers. Their dual woofers produced an even fuller sound than the 30cm woofer of my Harbeth M40.1. They weren't as agile or fast but the difference wasn't large. Their treble on the other hand was better than the British colleagues. I have no doubt that the M40.1 tweeter, no matter how fantastically integrated, isn't one of the seven world wonders. What surprised me was how the most important sonic characteristic of the S3900 was its dense coherent midrange. The speakers sounded tonally like a small Sonus faber Guarneri type monitor, albeit with powerful low bass. And yes it's possible to point out where their horns become audible. This manifests itself most apparent with the violin but isn't a particularly unpleasant irregularity. Either we accept it to have no problem or we can't to look elsewhere. Fortunately we won't have to gnash our teeth to covet where the S3900 really shines. The implied arrangement is clear. After some initial acclimatization and accommodation to this sound, we listen to violins with pleasure fully aware that it could be done better but also with peace of mind that other sonic aspects are truly unique.



**High-sensitivity speakers**, especially horns, are usually associated with small tube amps. There's truth in it. Many such designs especially from the 1930-60s work best with less than 10 watts of preferably SET power. Many modern speakers too sound best paired with low-power tube amps. In my opinion however the JBL sounds best with powerful high-end transistor amps. It is with the latter that it achieves maximum capability to sound magical. I drove the S3900 with my Soulution 710 and it was an optimal pairing.



I carefully placed the S3900 in the exact spot which is normally occupied by my Harbeth. The JBL were not particularly demanding with toe-in. They should sound consistent almost anywhere, even in a small room. My audition was an A/B with A and B known. Music samples were 2 minutes long. Whole album were also auditioned. It's worth placing the JBL on good isolation boards. I used Acoustic Revive RST-38H platforms with SPU4 spike receptacles. The S3900 is the distant heir of the Everest project and a direct successor to the S9900. Slightly smaller than the latter and housed in a simpler cabinet with smaller mid and tweeter horn, it runs two 25cm woofers instead of a single 30er. It is however still a three-way partially horn-loaded ported design.

<p><b>FIRST WATT</b> F6 25 watts of Mosfet power</p>	<p>LESS + LOSS LESS + LOSS LESS + LOSS LESS + LOSS LESS + LOSS</p>	<p><b>COINCIDENT</b> 20th ANNIVERSARY</p>	<p>Perfect Match! Supreme Sound</p> <p><b>SURGON AUDIO</b></p>
<p>Soltanus Acoustics</p>	<p><b>QAT AUDIO TECHNOLOGY</b></p> <p>MS5 MUSIC SERVER 2013</p>	<p><b>Gato audio</b></p> <p>The Absolute Pinnacle of Danish High End Audio</p>	<p><b>VOX OLYMPIAN</b> ELYSIAN</p> <p>WWW.LIVINGVOICE.CO.UK</p>

The 100F-12 woofers use pulp-fibre cones with concentric ribs to increase stiffness. Unlike other woofers in high-sensitivity speakers like Tannoy's Kensington GR, their suspension is rubber not pleated cloth. This makes them closer to classic woofers. Their baskets are cast aluminum alloy and the motor uses magnetic flux linearization. Bass hits 33Hz at -6dB, i.e. relaxed over the usual -3dB spec. The mid and high-frequency drivers mount from the rear to die-cast sections of proprietary SonoGlass, a glass-fibre type resin that's rigid and vibration resistant. These casts develop into two characteristically shaped horns called bi-radial for opening up symmetrically in two directions. The larger horn spans a large 850Hz–12kHz window. Its 50mm Titanium diaphragm is coated with AquaPlas resin. The upper treble is handled by a 19mm Titanium driver up to 40kHz. These drivers feature powerful neodymium motors and quality baskets. The speaker enclosure is 25mm MDF reinforced with a few braces. The inside walls are lined with uncompressed felt. The crossover network divides into two parts. The LF leg sits at the bottom of the speaker, the mid/high sections mount to the rear wall sporting air coils and large polypropylene capacitors. The inside wiring is stranded copper. The system is biwire/biamp ready. The speakers have 92dB sensitivity and a 6Ω nominal impedance.



**Technical specifications according to the manufacturer:**

Frequency response: 33Hz - 40kHz -6dB  
 Recommended amplifier power: 25 - 250w  
 Sensitivity (2.83 V/1m): 92dB  
 Nominal impedance: 6Ω  
 Crossover frequencies: 850Hz, 12kHz  
 Dimensions (H x W x D) 1001 x 370 x 368mm  
 Weight: 86.3lb (39kg) each

*Wojciech Pacuła*  
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