



New Products,
P. 8, 34

STUDIO | LIVE | BROADCAST | CONTRACTING | POST

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Media

AUGUST 2009 | VOLUME 15 | ISSUE 8

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INSIDE:

- **IN USE:**
TELEFUNKEN Elektroakustik ELA M 260
- **CONTRIBUTOR OF THE MONTH:**
Sterling Winfield



Pro On The Go
Audio For A Mobile World
PAR-Worthy iPhone Apps

Live Sound Feature
**Choosing
A Vocal Mic**
Touring Pros Share Preferences

Exclusive First Review

MACKIE HD SERIES

"High-Def" Meets Portable PA



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Mackie HD Series Powered Loudspeakers

The “HD” stands for “high-definition,” and deservedly so.

In conjunction with reviewing the Mackie Onyx 4-Bus Series analog mixer in late 2007 for *Pro Audio Review*, I had the opportunity to use the company’s impressive SA Series powered speakers, specifically a SA1232z pair, for several months. Since then, the SA Series has served as a personal benchmark of high-quality, reasonably priced, large, full-range speakers at the very top edge of what I can still consider “portable PA” applications (if a band consisting of at least two people with fairly strong arms can transport its sound reinforcement in a SUV or van alongside its instruments, I’ll justify it as “portable PA”).



In this review, Mackie’s new HD Series of powered loudspeakers reveals itself as the next logical developmental step in truly powerful portable PA and, in many ways, performs more impressively than its older (and more costly) predecessor, the SA Series.

Features

The HD Series includes two models: the three-way HD1531 and two-way HD1521 [\$1,499 and \$1,249 list, respectively]. I reviewed the HD1531, which features 1800W (peak) “of ultra-efficient Class D Fast Recovery amplification.” According to Mackie, Fast Recovery circuitry prevents the HD’s output from saturating, ensuring better sound when amps are clipped (a thoughtful design for the real world). The three-amp power breakdown — each amp coupled with EAW-designed transducers — is as follows: 700W RMS/1,400 peak for the low-frequency, 15-inch, neodymium woofer with three-inch voice coil; 100W RMS/200W

peak for the six-inch, horn-loaded, high-output midrange transducer; and 100W RMS/200 peak for the 1.75-inch compression driver with heat-treated titanium diaphragm.

Frequency response of the HD1531 is 50 Hz to 18 kHz (-3 dB). Horizontal and vertical coverage, averaged 2 kHz to 10 kHz, is 90 degrees and 40 degrees (-6 dB), respectively. Maximum peak SPL, calculated and measured, is 135 dB and 126 dB, respectively. Crossover points are 400 and 1,500 Hz.

I/O, controls, and indicators — mounted above the long, vertical heat sink on the HD1531’s rear panel — include XLR main input; XLR loop out; three-band contour, digitally controlled EQ with sweepable midrange (80 Hz, 100 Hz to 8 kHz, and 12 kHz, all +/-3 dB), on/off button and LED; a -6 dB to +6 dB master level control; a “power light on” button and LED (indicating whether the speaker’s grille-mounted blue LED is on or off); a red “Thermal” LED, lit when amplifier and heat-sink temperature exceed a safe

operating level (while the LED is red, input signal is muted); and a bi-color Sig/Limit LED (green with signal present, yellow when the HD's built-in limiter kicks in). Below the heat sink and to the right resides an On/Off switch and IEC power cord socket.

Three digital processing-related features, hence the HD Series' "high definition" moniker, are Mackie-patented acoustic correction algorithms, transducer time alignment, and a phase-coherent electronic crossover; in its signal flow, all processing takes place directly after the EQ circuit. More information on this EAW-developed technology is available on Mackie's website, at www.mackie.com/products/hdseries.

The HD1531's tour-grade enclosure is made of 15mm birch plywood, featuring two well-designed handles and a dozen fly points for flexible rigging options; it weighs 96 lbs. Dimensions are 35 x 19 x 18.25 inches. [According to Mackie product manager Greg Young, there are important reasons why the HD Series evolved beyond some enclosure elements of the SA Series: "We've departed from the SA design, which uses plastic end caps (top and bottom), in favor of the all-wood cab. This sets us apart not only from our legacy model, but also from other products in this price range. All wood is obviously more rugged/durable than plastic, but there is also an acoustic advantage to all wood: plastic resonates, whereas wood is (more) rigid, so you get less unwanted resonance with all-wood. Plus, (an all-wood enclosure) lets us shrink the cab and still maintain good LF extension, whereas plastics require a larger cab to get the same LF extension, or more power. Really, we did both — went with all-wood and more power. The HD1531 ends up being six to nine inches shorter than our competitors' three-way boxes, and we have much more output before LF starts to distort." — Ed.]

In Use

For this evaluation, I used a pair of HD1531 powered loudspeakers in a variety of gigs and settings over two months, with and



without a powered subwoofer (18-inch, 1,400W peak power), depending on the show. I found the HD1531s to be an ideal main PA for a wide range of gigs and settings: for example, from a medium-sized, multi-genre, live music venue with acts ranging from oldies R&B to piano-based pop/rock, to a hot, outdoor, summertime show with a 400-plus person audience that collectively demanded several hours of non-stop, punchy, clean, and pristine-sounding 100 dB-plus rock and roll. In each scenario, the HD1531 pair delivered the necessary goods.

Not to overdo it, but I must express how detailed and clean these HD1531s sound; their chameleon-like ability to adapt to every place I used them was always surprising and impressive to everyone in earshot, myself included. In the words of a well-seasoned guitar player on a random night, not having heard the HD1531s previously when standing out front during soundcheck, "Whoa, awesome." It sounded like a well-tweaked, pro live sound rig, except there was virtually no "tweaking" going on (other than setting gain levels per input and applying some reductive EQ per channel). Clearly, EAW and Mackie's investment in R&D on the HD's DSP features was well spent. Further, the HD's built-in EQ proved to be useful in several acoustically challenging rooms; its frequencies and range of adjustment are well chosen. All in all, "High Definition" is a deserved moniker for the HD1531.

Product Points



- ▶ Powerful and full sound; superior adaptability
- ▶ Tour-grade construction



- ▶ Heavy for "portable PA" applications (96 lbs.)

Score The HD1531 will consistently get the job done with professional-sounding results. Highly recommended.

Fast Facts

Applications

Professional and semi-professional theater, club, and outdoor venues; house-of-worship audio; installed sound

Key Features

Tri-amped; Class D "Fast Recovery" Mackie amplification, 1800W total power; EAW-designed "High-Definition" DSP; three-band digital EQ with sweepable midrange; all 15mm birch wood cabinetry; pole mount and 12 fly points

Price

\$1,499 list

Contact

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As an HD “feature,” Mackie refers to the HD1531 as “ultra-compact and lightweight.” Not surprisingly — because huge sound in live audio rarely comes in small, lightweight boxes — these well-built HD cabinets are not something I preferred to load in/out, pole mount or fly, etc., alone. So while I don’t find them to be lightweight at nearly 100 pounds, for what they do, I guess they are. I did discover that their size, low-end extension, and high power often allowed me to leave that 150 lb. powered subwoofer at home — definitely a good thing.

Summary

During my time with them, these new Mackie loudspeakers proved themselves deserving of a “whoa, awesome” description. The HD Series clearly benefits from a combination of newly applied, EAW-borne transducer and DSP technology with sensible design elements that have long defined Mackie live sound products.

The HD1531 is built and designed well enough to please seasoned professionals and small- to medium-sized live venues, yet a pair would be a real boon for those over-achieving, aspirational audio folks amongst us: The HD Series is remarkably affordable for what it provides its users. Owning a pair of HDs will likely allow users to ask for better pay; this is because they are built to deliver what modern audiences and club owners (and even discriminating professional engineers) naturally associate with a high-quality live music event. At under \$1,200 street per cab, I consider the HD1531 a worthwhile investment in a large, portable PA speaker.