

Sherwood Newcastle

R-965

Lawrence E. Ullman

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Back in the misty days when 2-channel stereo was still an exciting new format and tubes ruled the land, Sherwood was a brand name to be reckoned with. Together with such companies as Harman/Kardon, Fisher, Marantz, and McIntosh, Sherwood was instrumental in launching the American hi-fi industry on a path that would culminate in today's high-end audio gear—grist for our sister publication, *Stereophile*.

However, the path was a rocky one. When audio went solid-state in the 1960s and '70s, Sherwood and the other giants of American hi-fi found themselves unable to compete with the cheap transistorized gear flooding in from Japan. One by one, the American companies fell on hard times and were forced to sell. For the next decade or so, the once proud Sherwood logo appeared only on a long line of inexpensive, mass-market gear.

Then something wonderful happened. Several years ago, Sherwood—now owned by Etonics—announced a new line of high-quality audio products. Named after the location of the company's assembly plant in the UK, Newcastle components would be sold only through custom installers and AV specialty retailers.

The first product in the Newcastle line—the R-945 AV receiver—was introduced to

great critical acclaim in 1998. Michael Fremer reviewed it in the May 1998 issue of the *Stereophile Guide to Home Theater*. Next came the company's first home-theater separates, the AVP-9080R processor and AM-9080 multichannel amp. I not only gave the 9080 combo a glowing review in the (sadly defunct) webzine etown.com, but found the pair satisfying enough to use as the centerpiece of my reference system for several more years. (The AVP-9080R and AM-9080 were also reviewed in the June 1999 *SGHT*.)

Progress marches on, and the 5.1-channel 9080 separates I so enjoyed have been superseded by the 7.1-channel P-965 processor and A-965 multichannel amplifier. Going full circle, Sherwood recently repackaged its flagship 965 separates, combining the two pieces into a single cabinet to create the subject of this review, the R-965 AV receiver.

> AV RECEIVER

SPECIFICATIONS

R-965 AV receiver

Output power, stereo: 120Wpc @ 8Ω, 20Hz–20kHz, 0.05% THD

Output power, surround: 140Wpc @ 8Ω, 1kHz, 0.7% THD, 1 channel or channel pair driven

Signal/noise: line, 105dB; phono (MM), 80dB (IHF A-weighted)

Sound modes:

Dolby: Virtual Speaker, Headphone, Pro Logic II, Pro Logic IIx Music, Pro Logic IIx Movie, 5.1, EX

DTS: 96/24, Neo:6 Cinema, Neo:6 Music, ES Matrix 6.1, ES Discrete 6.1

Other: Stereo, 7.1-channel analog bypass, MPEG Multichannel, 13 DSP modes

Video inputs: Rear: 3 component, 6 S-video, 6 composite. Front: 1 S-video, 1 composite

Video outputs: Monitor: 1 component, 1 S-video, 1 composite. Record: 2 S-video, 2 composite

Analog audio inputs: Rear: 1 7.1-channel, 8 L/R, 1 phono. Front: 1 L/R

Analog audio outputs: 9 preamp, 2 L/R

Digital audio inputs: 2 coax, 7 optical (1 on front), 1 USB

Digital audio outputs: 1 coax, 1 optical

Other connectors: 1 RS-232C (DB9), 2 IR ins, 1 IR out, 2 12VDC trigger outs, 2 Sherwood DigiLink, 2 switched AC outlets

Dimensions: 17.4" × 7.8" × 17.8" (W×H×D)

Weight: 51.8 lbs

Price: \$1999.95

Sherwood America
(800) 962-3203
www.sherwoodusa.com



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First Impressions Last

No sooner had the UPS driver pulled away from the curb than I had the Sherwood unpacked and up on a table under bright lighting. The brushed-aluminum, or “Titanium”-finish front panel looks expensive, giving the impression of having been machined out of a solid block—at least when seen head on. From the sides, you can see that the panel is actually a single formed aluminum sheet about one-tenth of an inch thick, capped by gray plastic end pieces.

The overall look is clean and understated. A pair of large knobs and ten small, lighted buttons are symmetrically arranged around a large fluorescent display. All of these controls

feel great in the hand, turning with silky weighted motions and engaging with positive tactile feedback. Rows of additional buttons and the renamable Video 6 input suite (composite video, S-video, stereo analog audio, and optical digital audio) are located behind a dropdown door. Everything is labeled with white, screened-on text, which looked elegant on my brightly lit dining table, but later proved hard to read when the unit was on a shelf in a dark theater.

This is a big component, so be sure to check that your equipment cabinet or rack has at least 20–24 inches of free depth to accommodate the unit, including room for cable clearance.

Under the Hood

Removing the R-965’s top panel (don’t try this at home!) was like looking under the hood of a Porsche. The chassis is beautifully packaged and laid out. Someone clearly sweated the signal-routing details here—everything in my unit was spic and span, with nary a stray wire harness in sight. There’s even a nifty wire bridge that channels and hides the few wires that must traverse the chassis’s width. Sherwood logos decorate the wire bridge, as well as the power supply’s massive 6-inch-diameter toroidal transformer and twin 2700 μ F filter capacitors. I’ve seen megabuck high-end amps that don’t look this good inside.



When I looked closer, it quickly became apparent that the R-965's underlying architecture resembles that of a personal computer. A horizontally oriented motherboard occupies the central rear portion of the chassis, with slots for six vertically oriented expansion cards, which in turn expose arrays of connectors through the rear panel. The cards are labeled Processor, DSP, Input1, Input2, S-Video, and C[omposite]-Video. A separate daughtercard serves up the component-video connectors. Among other advantages, this modular design should make upgrades and repairs much more practical.

The R-965's similarity to a PC ended when I examined the top-flight complement of DSP chips that populate its expansion cards. The

centerpiece is a Cirrus Logic CS-49400 32-bit audio decoder that ably crunches just about every DTS and Dolby algorithm known to man or beast. All eight output channels are handled by Analog Devices AD-1852 24-bit/192kHz D/A converters; AKM AK-5380 24-bit A/D converters take care of business on the input side. An Analog Devices AD-1896 sample-rate converter "remasters" 2-channel PCM sources to 24/192 resolution.

No PC case ever held anything like the pair of shiny, machined-aluminum heatsinks that flank the Sherwood's motherboard on both sides. These finned beauties are each 15 inches long and 5 inches high, spanning the full depth and height of the cabinet. Large amplifier boards are mounted along the outside of each heatsink. Ventilation slots stamped into the bottom of the chassis directly below the all-important power transistors create a chimney effect to draw air across the sinks and out the slots in the top cover, so be sure you don't block 'em.

Numbers Game

According to Sherwood's website, amplifier output in Stereo mode is an ample 120 watts per channel into 8Ω, from 20Hz to 20kHz, with <0.02% THD; the R-965's manual lists the THD at a slightly higher 0.05%.

I was sad (but not surprised) to see that the R-965's multichannel output power is not fully specified with all channels driven. Sherwood's website claims "120 Watts per Channel x 7 in Surround Mode," a meaningless, unqualified spec. The R-965 manual

lists 140Wpc into 8Ω at 1kHz with 0.7% THD "only channel driven"; i.e., only the front-channel pair, center, surround-channel pair, or surround rear/Room2 pair are driven during the test. This "only-channel-driven" rating at 1kHz is a far cry from the fully spec'd, 20Hz–20kHz, all-channels-driven rating we'd like to see.

Another specification that raised my eyebrows is the amp's apparently limited ability to drive low-impedance loads. A note in the manual warns that speakers of at least 6Ω should be used all around when connecting one pair of surround speakers; i.e., for a 5.1-channel configuration. This is not exactly reassuring, as the ability to remain stable into low impedance loads is something I take for granted when dealing with a high-end, \$2000 component. That said, I used a pair of 4Ω M&K S-90s for surrounds throughout the review period without incident.

If you're planning on implementing a 7.1-channel configuration, however, I'd think twice before using any 4Ω speaker. The manual cautions "use only speakers with impedance of over 12Ω" when using both Surround A and Surround B connections and "other [LCR] speakers with impedance of over 6Ω." This could pose problems, as few decent speakers are rated at over 8Ω, and a great many high-performance models are rated at only 4Ω. It will be interesting to see how the R-965 behaves when we put it through its paces on the test bench (see sidebar, "Measurements").

Of course, Sherwood is hardly the only audio company to indulge in a bit of specsmanship—it's rampant in our industry. And I don't want to give the impression that the R-965 lacked sufficient amplifier *oomph*—anything but! The point is, you can't shoehorn an advanced digital processor plus seven channels of amplification into a single cabinet without making some sacrifices—not if you want to sell the thing for less than a king's ransom. To their credit, Sherwood acknowledges this fact on their website: "Our R-965 flagship receiver is identical to its more advanced parents [the P-965 processor and A-965 amp] except for the necessary compromises due to the use of a single power supply for both the preamp and main amp sections and in its ultimate power capability."

For the record, Sherwood's A-965 7-channel amplifier has two toroidal transformers and separate amplifier "monoblocks" for each of the seven channels, vs. the R-965's single transformer and two amplifier blocks, each with multiple channels. The A-965 amp is fully spec'd at 100Wpc into 8Ω, 20Hz–20kHz, <0.02% THD, all channels

REVIEW SYSTEM

Sources

Pioneer Elite DV-Fo7 DVD Jukebox
Sony DVP-NS700P DVD player
Sony SAT-W60 digital satellite receiver-recorder
ProScan PSVR75 HiFi VCR
Adelphia analog cable

Display

V, Inc. Vizio RP56 56" DLP rear-projection TV

Speakers

B&W 801 Matrix Anniversary Edition (L/R)
B&W HTM (center)
M&K S-90 (surrounds)

Cables

Digital: Monster, MIT
Interconnect: Monster, AudioQuest
Speaker: 14 AWG copper w/banana plugs

driven. A separate rating is given for 4Ω loads: 160Wpc, 20Hz–20kHz, <0.09%, again with all channels driven. Of course, the A-965 lists for \$1499.95, plus another \$1499.95 for the matching P-965 processor; together, they list for a cool \$1000 more than the R-965. I've said it before and I'll say it again: when it comes to analog electronics such as a power amp, you really do get what you pay for.

Jack Attack!

One look at the R-965's rear panel is enough to make a grown man weep. Intimidating at first glance, this jack pack is complete, well thought out, and above all, flexible.

First off, there are five AV inputs, each with an accompanying S-video jack. There are also three line-level audio-only inputs, labeled Aux, CD, and Tape Monitor, plus a moving-magnet phono input for you vinyl diehards. The AV, Aux, and CD inputs can be renamed.

Many lesser receivers force you to plan a connection strategy that can accommodate fixed digital-audio input assignments; e.g., Video 1 has a coaxial input, Video 2 has optical, and so on. The R-965 gives you four optical and two coaxial digital inputs on the rear panel and lets you reassign them as you please.

Similar flexibility is extended to the three component-video inputs, each of which can be freely assigned to any AV input. These are switched by relays, not microprocessors, so high-bandwidth HD signals should pass through with no rolloff.

The R-965 is the first product I've had in-house that upconverts composite and S-video inputs to produce a unified, or "universal," component-video output. This allows you to make a single component-video connection between the receiver and your video display, thus relieving you and your family of ever again having to switch video inputs on the TV. I saw no apparent decline in the video quality of the composite signal coming from my dusty VCR or from the S-video output of our much-loved Sony digital satellite receiver-recorder. And even if there was a performance penalty, I'd gladly pay it to eliminate those dreaded mid-day phone calls from the wife and kids complaining that "There's no %#\$* picture again!"

With so much flexibility on tap, it's easy to forget what needs to be assigned where by the time you finally squeeze out from behind the equipment rack and sit down to program the input assignments. I found it helpful to make a little chart to keep track of each input's new name, as well as its accompanying digital and component-video assignments.

The Video 1 and 2 inputs are record loops with matching AV outputs, so you'll want to reserve these inputs for use with a VCR, DVD



recorder, or TiVo. The record outputs can be switched independently to send different sources. However, the Video 2 record output serves double duty as the Room 2 output, so if you plan to have a second zone, you'll be left with only one record output in your main room. And if your recording device can accept a digital audio input, the Sherwood has a digital optical output for recording (plus a coaxial digital output for a Zone 2 feed).

In addition to the regular AV inputs, the R-965 has a 7.1-channel analog Direct Input for use with a DVD-Audio or SACD player. (Of course, there are no such players with eight analog outputs, so the point of having the extra inputs is beyond me.) [Perhaps 7.1-discrete channels on some future format such as Blu-ray-based SACD or HD-DVD-based DVD-Audio? Just daydreaming.—Ed.] Dedicated composite and S-video inputs are provided, and the receiver's bass-management functions are active on this input.

The R-965 has preamp outputs for all channels, including two subwoofer outputs. If you'll be using only one Surround Back speaker in a 6.1-channel configuration, you can switch the unit to Passive Subwoofer mode and connect an unpowered sub to the Surround Back R speaker terminals.

There are a total of nine pairs of high-quality speaker binding posts, labeled Front (L/R), Center, Surround A (L/R), Surround B (L/R), and Surround Back/SW (L/R). In addition to feeding a passive sub as mentioned above, the Surround Back speaker terminals can be assigned to feed speaker-level audio to the Room 2 zone.

This is the first receiver I've seen that sports a USB connector. Familiar to computer users, this high-speed serial port can accept 2-channel PCM digital audio from a PC, or it can be switched to enable downloads of

upgraded operating software. A 9-pin RS-232C connector is also provided for the latter function.

Custom installers and our more intrepid readers can use the R-965's IR control jacks in conjunction with a Xantech multiroom kit (sold separately) to operate the unit from a second room or when it is hidden from sight behind cabinet doors. A pair of DC trigger outputs can be used to raise and lower projectors, screens, and the like. The first jack triggers each time the receiver is powered on or off, the second when a specific, assignable input source is selected.

Control Freak

For the most part, I found the Newcastle R-965 easy to set up and operate. The onscreen display (OSD) is simple but adequate, with six screens. Menu navigation is annoyingly inconsistent, sometimes requiring a push of the Enter button, other times a Return. I often found myself exiting the menu system entirely rather than stepping back to a previous sub menu.

The Power Amp Assign screen is used to direct the rear-channel power amps to drive either the Surround Back or Room 2 speakers (so they can play a second, independent source). The Speaker Setup screen lets you select a speaker configuration (Large/Small for each speaker), which is then applied globally for all inputs. The subwoofer crossover frequency defaults to 80Hz, but can be adjusted from 40 to 120Hz in 20Hz increments.

Although the R-965 does not have individual channel-level settings for each input, the Channel Level Setup screen does allow you to adjust and then store three channel-level presets for later recall. You can even adjust the LFE level separately for Dolby, DTS, and MPEG decoding modes.



The System Setup screen is where you reassign digital and component inputs, turn Digital Re-Mastering on and off, etc. The Surround Setup screen selects a default decoding mode and adjusts a variety of Dolby Digital parameters. Finally, the Room2 Setup screen has settings for volume level (fixed or variable) and source.

When an S-video or composite source is active, the white menu lettering appears on a transparent background, and so appears to float above the live video image. This can, of course, make it difficult to decipher the menu. On the other hand, the live video image is muted and replaced by a blue background when a component-video source is onscreen. This can be disconcerting, but at least the Sherwood's OSD can be invoked from all outputs, even component. And yes—if you wish, you can turn off all onscreen displays, including the volume indicator.

Two remotes are included with the R-965. The main one is a universal learning model that Sherwood repackages from Universal Remote Control, who sells it as a standalone product. It's a good-looking remote, with large, well-spaced buttons and a nifty central

rocker control. It feels great in the hand. An LCD shows the current function of ten "soft" buttons. It's even backlit. But it's missing one critical thing: there are no dedicated buttons for input selection! The LCD page labeled Main shows the operating layers. To get to the input-selection buttons, you have to first hit Aud1. Many other frequently used operating functions are buried in subpages. I quickly grew tired of the whole affair and programmed my trusty Marantz RC-2000 Mk.II with the Sherwood's commands. This worked *much* better for me and my family.

A secondary remote is provided for Room 2 operation. This simple remote has buttons for Zone On/Off, Input selection, Volume, and Mute. To use this IR remote, you must purchase and install a Xantech multiroom IR repeater kit.

The front-panel fluorescent display is uninspiring, at best. The currently

selected input (named as you prefer) appears in large characters, but everything else is indicated by tiny, sometimes confusing legends. I frequently had to get up and walk across the room to peer at the display just to determine which of the many possible surround modes I was listening to.

I know I'm beating a dead horse, but I just can't let it pass: the R-965's manual is a joke. This is a very complex product, with numerous parameters that must be set correctly for optimal performance. Beginning and advanced users alike deserve logically organized, clearly written operating instructions, which they don't get here.

Curtain Time

The Sherwood Newcastle R-965 was one great-sounding receiver. My notebook is sprinkled with comments like: "Detailed but not harsh. Solid bass. Conveys sense of acoustic ambience. Instruments are rendered 3-dimensionally. No sense of strain . . ." I can't remember the last time I had this kind of reaction to a receiver, even one that lists for two grand.

But before I played even a single note

through the R-965, I was struck by how quiet it was. There's very little self-induced noise, even with the volume cranked.

In 2-channel mode, the R-965 reproduced all my favorite tracks with aplomb. Bernard Haitink and the Concertgebouw Orchestra's recording of Shostakovich's Symphony 15 (CD, London 417 581-2) has long been a touchstone. The first movement is an orchestral tour de force, with delicate flute and glockenspiel passages, stirring trumpet fanfares, soaring woodwind solos, and a variety of percussion, including snare drum, cymbals, and a truly massive bass drum. All of this is beautifully recorded, with instruments clearly positioned in space and enveloped by the glorious acoustic of the Amsterdam Concertgebouw, one of the world's great concert halls. Through lesser electronics, the sense of 3-dimensional space so wonderfully captured on this disc disappears, resulting in a flat, emotionally uninvolved presentation. But everything was right there with the Sherwood.

Moving to a completely different genre, I spent a great deal of time listening to the Nitty Gritty Dirt Band's *Will the Circle Be Unbroken: Volume Two* (Universal UULD-12500). The subject of a recent PBS documentary, this groundbreaking 1989 recording was one of the first in decades to gather a group of musicians in a single room and have them actually play together with the tape rolling, rather than bring each performer separately into the studio to overdub a recording track by track. The result is a superb-sounding, musically joyous experience.

With John Prine singing "Grandpa Was a Carpenter" in the background, I switched back and forth between the coaxial digital and analog outputs of my Pioneer Elite DV-F07 DVD/CD jukebox. Even though it's a bit of a pain to use as a single-disc player, the Pioneer has been a fixture in my system for several years now. The reason is simple: I've yet to find a receiver or processor with D/A converters that sound better than the Pioneer's Legato Link DACs. I also experimented with the Sherwood's Re-Mastering function, which upconverts garden-variety, 16-bit/44.1kHz PCM audio to 24/192 resolution.

With Re-Mastering turned off, the Pioneer's Legato Link DACs sounded slightly smoother and cleaner than the Sherwood's in the high frequencies. But with Re-Mastering engaged, the Sherwood's high end seemed to snap into focus, becoming at least the equal of the Pioneer. I still haven't decided which I like better, but at this point I'm leaning toward the Sherwood.

Turning to multichannel soundtracks on

DVD, the Sherwood struck just the right balance of power and finesse. Because I use full-range front speakers in a fairly small room, I don't feel the need for a subwoofer in my system. Although my big B&W 801 speakers present a fairly benign 8Ω load to the amp, they're more than happy to soak up as many watts as I care to throw at them. They also require an amp with good damping characteristics to control their big 12-inch woofers. This obviously places greater demands on a power amplifier than would a more typical home theater speaker system with small satellites and a powered sub.

Judging by the deep roar of the Saturn V rocket in *Apollo 13*, the manifold explosions and mayhem of *Saving Private Ryan*, and the submarine and minefield detonations in *Finding Nemo*, among others, the R-965 had what it took to handle the most demanding sound effects, even when driving full-range speakers. It also effortlessly reproduced subtler ambient effects and delivered clean, intelligible dialog. I have yet to feel the need to engage the Sherwood's Cinema EQ, though I'm glad to know it's there.

I watch a lot of regular TV programming on my system. Although some shows are recorded in matrixed Dolby Surround, many are still broadcast in stereo or even mono. Nevertheless, I still prefer to have the dialog coming out of the center speaker, so I usually leave the processor in its Dolby Pro Logic mode when watching TV. The Sherwood's Dolby Pro Logic IIx Movie mode worked great for this purpose, providing a noticeable improvement over plain ol' Pro Logic.

Last but not least, I have to admit that both the DTS Neo:6 Music and Dolby Pro Logic IIx Music modes work pretty darn well with many 2-channel music sources. These are certainly a huge improvement over the grotesque DSP modes still found on all too


many products. (The R-965 has a dozen such DSP modes, but I won't tell if you won't.)

Conclusion

The Sherwood Newcastle R-965 is an attractive and well-thought-out piece with exceptional build quality. It features an enormously comprehensive and flexible suite of AV inputs and outputs, including my new "must have" feature, unified component-video output. Above all, it delivered excellent audio performance in 2-channel and multichannel modes. The one area that could stand some improvement is the user interface—but the same thing can be said of most of its competition.

Speaking of competition, the R-965 must duke it out for shelf space in a brutally com-

petitive and rapidly changing market. Several 7.1-channel receivers with similar specifications and features are on the market, and all cost less than the Sherwood. Examples include the Denon AVR-3805 (\$1199), Onkyo TX-NR901 (\$1500), and Marantz SR7400 (\$999).

I haven't had any hands-on experience with these specific receivers, so I can't say how they sound compared to the Sherwood. But the R-965 sets the bar pretty darn high. And I'd be surprised indeed if any less-expensive competitor even comes close to the Sherwood's superior build quality and elegant look and feel. If you own a high-performance luxury car like a BMW or Lexus (or would if you could), the R-965 has your name written all over it. 

MEASUREMENTS

All measurements were taken on the left channel, except as noted. The Sherwood Newcastle R-965's 2-channel analog frequency response, in Pure Audio mode, from the CD input to the speaker output, was -0.57dB at 10Hz, -0.18dB at 20Hz, -0.07dB at 20kHz, and -0.44dB at 50kHz. The response from the multichannel input to the speaker output differed from these results by less 0.2dB at 10Hz and 0.07dB, maximum, at 20Hz, 20kHz, and 50kHz.

The Dolby Digital response (optical input to speaker output) was -0.38dB at 20Hz and -0.77dB at 20kHz, left channel (-0.34dB at 20Hz and -0.76dB at 20kHz, center channel). With the Sherwood's surround left channel set to Small and the crossover frequency set to 80Hz, the response in that channel was -6dB at 82Hz at the bottom end and -0.79dB at 20kHz at the top.

The line output from the LFE channel, normalized to the response at 40Hz, was -1.46dB at 20Hz and -6dB at 109Hz.

The signal/noise ratio (A-weighted, 2.83V @ 8Ω) measured -99.8dB. The gain measured 28.9dB, CD in to speaker out, with the level control set to +5. The THD+noise in 2-channel operation at 2.83V into 8Ω measured 0.010% at 20Hz, 0.011% at 1kHz, and 0.009% at 20kHz. At 2.83V into 4Ω, the corresponding results were identical to within 0.001%.

Driving all seven channels into 8Ω, the Sherwood delivered (to the nearest watt) 108Wpc at 20Hz (126Wpc into 4Ω) and 113Wpc at 1kHz (144Wpc into 4Ω) before clipping (1% THD+noise). At 1kHz, with only two channels operating, the Sherwood clipped at 134Wpc into 8Ω and 220Wpc into 4Ω.—Thomas J. Norton

Manufacturers' Comments

Sherwood Newcastle R-965

Editor:

Thank you for Lawrence E. Ullman's thoughtful review of our Newcastle R-965 AV receiver. His recognition of its "beautifully packaged" chassis, "silky" motions, "exceptional build quality," and "excellent audio performance" was appreciated by all involved.

We do regret that a standard industry "boilerplate" warning regarding the use of low-impedance speakers and our perceived

specsmanship seemed to color the first part of the review with skepticism. As your measurements and LEU's listening tests confirm, the R-965 is no wimp. With all seven channels driven, its actual power output exceeds 100Wpc RMS into 8Ω and 125Wpc into 4Ω. It is clearly low-impedance-capable.

Also important is the R-965's field upgradeability. Since its introduction earlier this year, we have already released two updates. The first added AV Synch delay for

users of advanced TVs, and the second incorporates automatic speaker setup. We are scheduled to add parametric EQ before the end of the year. These updates are available to Newcastle owners at no charge and are an important part of our customer service.

Thank you again for your appreciation of our "great-sounding receiver."

Jeffrey Hipps
Sr. VP, Marketing and Product Planning
Sherwood America 