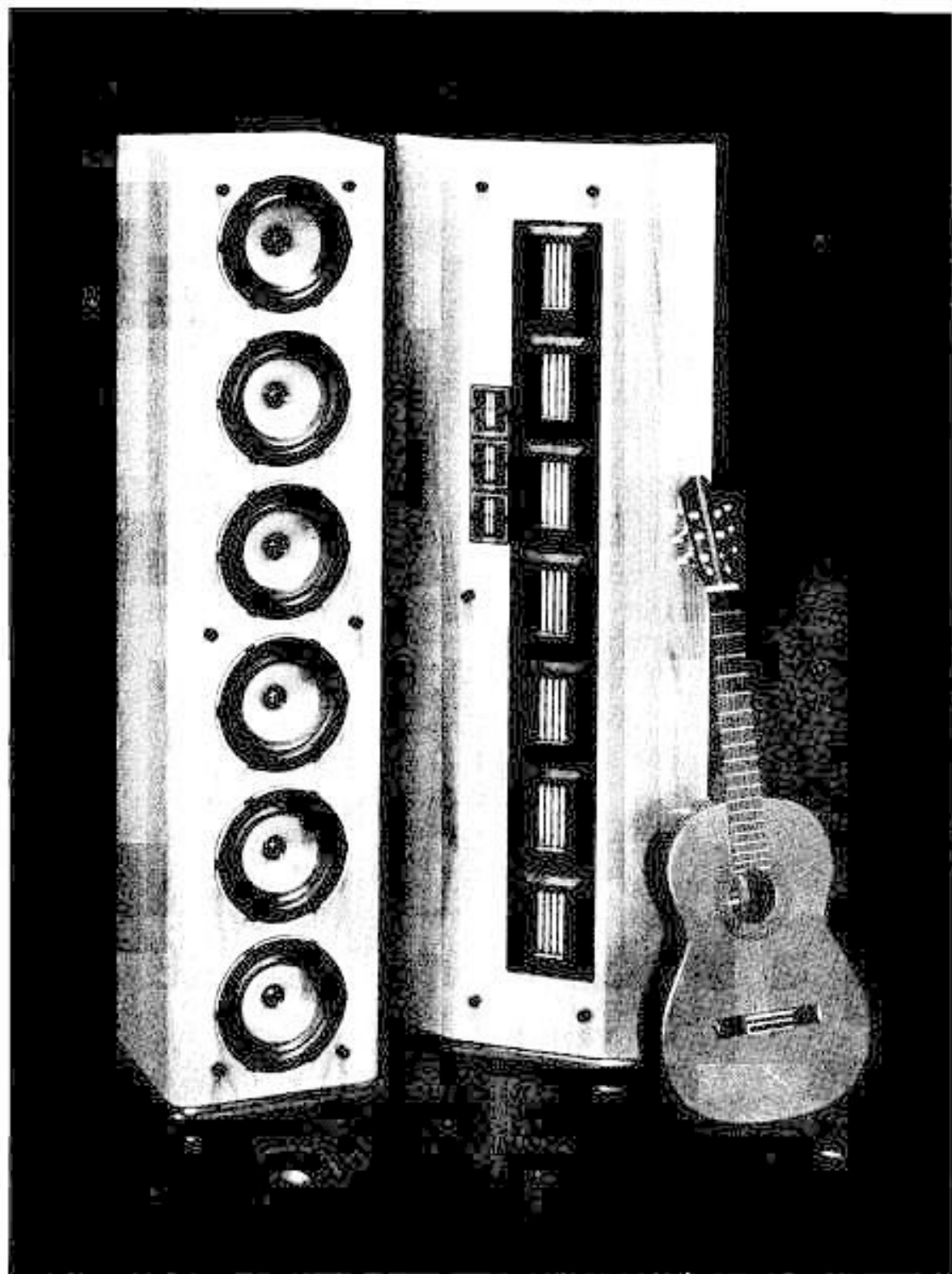


INFINITY RS-1B SPEAKER SYSTEM



Five-way dynamic system with EMIT tweeters, EMIM midranges, and servo-controlled cone woofers. Electronic crossover frequencies: 125, 700, 3000 and 8000 Hz. Dimensions, LF section: 60" H by 14" W

by 15" D. Dimensions, HF section: 60" H by 22" W by 13" D. PRICE: \$5295. MANUFACTURER: Infinity Systems, 7900 Deering Ave., Canoga Park, CA 91304.

I'll say one thing right off about the Infinity RS-1B: It sure *looks* as if you're getting your money's worth.

The system comes in five sections: two woofer columns, two upper-range columns, and an active crossover and servo control module. Each bass column contains six 8-inch polypropylene cone woofers. Each upper-range column contains seven of Infinity's proprietary EMIM ribbon midrange drivers and four EMIT ribbon tweeters, (one of them aiming out the rear, of all things!). System crossovers are at 125 (nominal), 750, 3000, and 8000 Hz, and the number of operating drivers diminishes as the frequency goes up, to minimize vertical treble beaming due to phase interference (e.g., above 8 kHz only one smaller EMIT is driven.)

The RS-1B must be biamplified using its own specific crossover/servo module. This has front panel adjustments for woofer crossover frequency, woofer level, bass contour (rising, flat, or rolling off with diminishing frequency), LF range (cutoffs at 22, 30, or 36 Hz), and amplifier input impedance. The crossover has amplifying circuitry only in the LF section; the signal fed to the upper-frequency amplifiers is passive (unamplified), so there's virtually no possibility of adding nonlinear distortion components to the signal.¹ Because of this, the turnover frequency of the high-pass section varies according to the input impedance of the HF amplifier. (With a given capacitor in series, the crossover point will rise as amplifier input impedance diminishes. When the front panel impedance switch is set to match that of the higher-frequency amplifier,² crossovers will occur at frequencies specified in the instruction manual.)

There are also driver level adjustments on the upper range speaker towers, for "Low Tweeter" (2 to 5 kHz) and "High Tweeter"

(8 kHz up). It would seem you should be able to get just about any kind of sound from the RS-1Bs you wish, and that proves to be almost the case.

The servo function requires an unusual woofer hookup. The woofer columns do not connect directly to their LF driving amplifier, but instead to 5-way binding posts on the crossover module. The module, in turn, connects to the LF driving amp. This arrangement allows the device to compare LF amplifier output signals with signals appearing across the speaker terminals, and to cancel out any detected differences (which would represent back-EMF from spurious woofer cone motions).

The only potential problem with this servo driving system is the possibility of damaging an amplifier which inverts the polarity of the signal going through it. An inverting amp will turn the crossover's back-EMF cancellation inverse feedback into positive feedback, driving the amplifier into full-power oscillation. Infinity's manual spells out the risk of this in no uncertain terms, but it doesn't hurt to underscore it here. Most modern amplifiers are non-inverting, but, rather than assume yours is, it's best to find out for sure before using it with the RS-1. Most spec sheets will provide this information, as will the amplifier listings in *Audio* magazine's Equipment Directory. (Or, again, you could call the amp manufacturer.) If all else fails, you can safely test the amplifier for polarity, as described in the accompanying box. →

While we're on the subject of polarity, I should note that Infinity's comprehensive and detailed instruction manual for the RS-1B perpetuates what I feel to be a myth, albeit it a popular one these days. This concerns the importance of overall system polarity ("absolute phase") from cartridge to speakers. As I have pointed out before, I will not argue the fact that polarity reversal in a system often changes the sound, and that one polarity will often sound better than the other. But, as far as I know, no one has ever bothered to find out whether that better-sounding polarity duplicates the polarity of the original sounds, or whether

1 There is the possibility that the capacitor used as a high pass filter could contaminate the sound, and this has, in fact, been reported by some users who substituted a better capacitor. LA

2 This specification is not always supplied with an amplifier, but can be obtained by a phone call to the manufacturer.

TESTING FOR OSCILLATION

Here is the most straightforward way of ascertaining whether a power amplifier will be stable (i.e., won't oscillate) in actual use, with adequate protection against damage if it does oscillate. Low current fuses are the cheapest form of protection.

If the amplifier is already equipped with speaker fuses in its outputs, replace these with 0.25-amp fast-blow fuses. (If it hasn't its own fuses, buy a couple of standard in-line fuse holders, put one in series with the Hot output from each amp channel, and install the 0.25-amp fuses.)

Connect all your signal and speaker

cables, and turn everything on. The system should work. If you get no signal from the amplifier under test, or if there is a POP when you turn things on, check the fuses. If they're blown, your bass amp inverts polarity.

If it does, the solution in the case of the RS-1B is simple: just flip a switch at the rear of the crossover module (you must loosen two screws to do this), and you can use your inverting amp with the RS-1B. Finally, don't forget to replace the 0.25 amp fuses with the originals. (If it had no fuses, you can discard the fuse holders.)

it merely enhances other aspects of the sound. (Many loudspeakers, for example, exhibit asymmetrical cone excursion in response to symmetrical input.) Until then, and in the absence of any standard polarity at the *recording* end of the chain, I feel it pointless to try to achieve absolute phase in the playback system through the use of noninverting components.³ It makes far more sense to listen to both polarity conditions, and use the one that sounds better with most recordings. If you find yourself bothered by those recordings which don't conform, you can wire a phase-reverse switch into the speaker leads and diddle that to your heart's content.⁴

³ Not to mention the foolishness of upgrading or downgrading a component because it is noninverting or inverting. Phase inversion is a characteristic that accompanies all gain stages; even numbers of gain stages in a component will cause it to noninvert, while odd numbers will cause it to invert. Therefore, a supposedly bad, inverting, component could be "improved" by adding yet another gain stage! In fact, designers normally use the minimum number of gain stages to get the job done, but that number will vary with the type of component and particular topology employed. Inversion or lack of it becomes even less important when you consider that not only components, but recordings as well, vary in this characteristic: you will never be "right" with all sources and all equipment. LA

Despite the unconventional bass amp hookup, installation of the RS-1B is, at least initially, simple and straightforward. Of course, two sets of speaker cables will be required, and if you need to buy another pair, you might consider using a cable outstanding on bass for connecting the woofers, and one whose forte is midrange and treble for the upper-range towers (I refer you to AHC's wire survey in Vol. 8, No. 2). But hookup of these speakers is only the first step. For reasons I'll get to later, the system may need many hours—even weeks—of careful adjustment and tweaking before it delivers everything it's capable of.

My first listen to the Infinitys used an Electron Kinetics Eagle 7A on the high end, a BEL 2002 on the low. I was underwhelmed. The low end was excellent, but the upper part of the audio range had problems. First, and most immediately noticeable, was the system's lack of adequate mid-to-lower-middle-range output, which could not be corrected via any of the

⁴ Except with the RS-1Bs, where this procedure would put the midrange-tweeter towers out of phase with the woofers. Blessed are those who own Klyne SK-5 preamps, the only product I know of that allows you to conveniently switch the entire system phase at the preamp. LA

available driver level controls. The overall sound was rich and luscious, but—pardon the expression—the system lacked balls. And, although there seemed no shortage of high-end range, the sound seemed just a bit slow. There was another problem which I can't exactly explain. My guess is that the system has some exceedingly small, sharp response peaks at the high end, and because of them the RS-1Bs seem to exaggerate any traces of roughness (grudge) in the signal source.

So, I swapped amplifiers. The low end improved a little with the Eagle, and the upper ranges sounded a little less rough with the BEL, but the sound was even more unctuously dead. And, although reduced, that tendency to exacerbate crud in the signal remained.

I recalled that Infinity usually demos their loudspeakers at CES with Audio Research tube electronics, and wondered whether that variety of amp might not be a mandatory adjunct to the RS-1Bs. We've been awaiting delivery of some (promised) Audio Research amps for so long now that we no longer hold our breath, but we had just recently received a pair of Conrad Johnson's massive mono Premier Fives. So I schlepped those home (90 lbs each, boxed) from the office storeroom and fired them up on the system's high end, with the Eagle 7A on the woofers. Well, sir . . .

I won't say the Premier Fives transformed the RS-1Bs into a WAMM or into Infinity's own IRS system, but for the first time I began to understand why people have been willing to spend \$5295 on this system. These are among the few speakers I've heard in ages that can stand my hair on end!

First of all, the RS-1Bs seem to have no practical upper limit of power-handling capability! They will play at very high levels (like 110 dB on peaks!) without a trace of strain or hardness, assuming of course that you throw enough power at them (the Premier Fives can throw 200 watts per channel). Talk about "digital-ready"!

The RS-1Bs image about as well as any large loudspeakers I have heard. This puts them in the class of the WAMM and the IRS, both of which I consider to represent the

state of the art for soundstage presentation and reproduction of depth. The RS-1Bs are the first speakers I've had in my listening room which actually put some of the soundstage (on appropriately-miked recordings) beyond the lateral limits of the speakers—something I did not believe possible except in a room with highly reflective walls (mine are not). They are bettered in imaging specificity by a few tiny satellite speakers and, I suspect, by some curved-panel electrostatics, but only by a small margin.

These are *big*-sounding speakers, with a gutsy forcefulness that I do not recall encountering in any audiophile system. When a trombone speaks from these, you sit up and pay attention! If you wished to reproduce the voice of God, these speakers could do it. Bowed cellos, synthesizer grunts, and piano bass strings have just the right amount of attack and delineation, and with balance controls properly adjusted, all other musical timbres are reproduced with superb accuracy. No instrument is slighted, and—despite the complexity of the crossover network—the drivers mesh almost seamlessly. (The only discontinuity I could hear, and then only on piano, was the transition from the EMIMs to the cone woofers, at which point the piano strings seemed to lose a little of their "twang".) Massed violins are gorgeously smooth, yet with all the fine-grained gutty edge of the real instruments. Brushed cymbals are open and natural-sounding, and brass and steel are easily distinguished.

The system's low end is particularly impressive. I have never before had a full-range system in my listening room that would put out a full-level 30-Hz signal, but, with their LF response set for Flat, these do it. In the +3 dB (at 30 Hz) position, the 25-35-Hz range was, believe it or not, excessive! Bass quality, too, is excellent, although not quite as controlled as I have heard on (rare) occasions from big transmission-line systems such as the behemoth that Irving Fried used to demonstrate at audio shows. But don't misunderstand me: the RS-1B's bottom is excellent, having immense impact and awesome range. The cannons

from Telarc's 1812 CD produced what felt like shock waves!

In fact, impactive sounds are one of the RS-1B's strongest points. The attacks of hard transients—snare drums, rim shots, and xylophone strikes—are razor-sharp, yet the speaker is entirely free from the exaggerated hardness and stridency found in most other speakers with comparable impact capability.

The only areas in which I have heard the RS-1Bs bettered are transparency, realism, and high-end openness and delicacy, all of which are better presented by some full-range electrostatics, notably the Martin Logan Monoliths. For example, the RS-1B's rendition of detail, while awesome, sounded a little heavy-handed, as if sharpness were substituting for delicacy. And while its high end was very smooth, the sound lacked the suavety and musical sweetness of the electrostatics. In the area of realism—the ability to give the impression that real, live instruments are playing—the RS-1Bs did very well, but were not equal to the best I have heard. In comparison, the RS-1B tended to fill in the spaces between bursts of musical sound.

Yet, I continue to be immensely impressed by the sound of the RS-1Bs, and that is what I felt ultimately to be their most outstanding characteristic: they have an "impressive" sound. They are awesomely exciting to listen to, and do an incredible job with bombastic, massive works like Mahler's Second symphony and the 1812 Overture, and with high-powered recordings like Sheffield's *Track* and *Drum* records. But I found them rather less satisfying when reproducing smaller-scaled, more intimate material, such as chamber music and solo guitar. With that kind of music they still image superbly, making a well-miked guitar sound like a mono recording with stereo ambience (which is exactly right). But that "impressive" quality remains, the music losing some of its gentleness.

There are a few other problems with the RS-1Bs, not the least of which is their setup. These speakers offer so much potential for superb sound quality that all the tweak fac-

tors, of little importance in mediocre systems, assume paramount importance. To set up the speakers according to the diagram in the manual, set all controls for Flat and let it go at that, is to throw away half the potential (and half the considerable cost) of the system.

The RS-1B is one of the most revealing systems you can own, which is one obvious reason why it "prefers" tubed amplifiers (with their slightly soft top) to solid state's slightly "crisp" top. But this is a mixed blessing, as it imposes almost impossible demands on the cleanness of the program material. In fact, I am not altogether certain the RS-1B isn't still exaggerating grudge in the sound. I have heard slightly better transparency with slightly superior detail from some electrostatics, notably the Martin Logans, and none of them showed any such tendency to exaggerate signal garbage.

One thing is perfectly clear, though, and that is that you are *not* likely to get the best results from the RS-1Bs unless you use tubed power amps, and the *best* tubed amps at that. It is probably safe to say that no tubed amp made is too good for this system, which means that when you buy the RS-1Bs, you can probably plan on paying at least an additional four grand or so (the Premier Fives are \$6000) for suitable upper-range power amps. (The Infinity woofers require only that the amplifier have high power and high current capability, and the amplifiers that best meet these requirements are solid state.)

As with any system having such a wide variety of frequency-response adjustments, the ability to obtain almost perfect response is countered by the even greater likelihood of royally screwing up. While there is only one optimum set of adjustments for a given listener, listening room, and complement of associated equipment, there is an almost infinite range of possible mal-adjustments—and the only way of telling when things are "right" is by ear. This means that, if you are going to get anything better than frustration or endless indecision from the RS-1Bs, you'd better have a very sophisticated set of ears or one helluvva competent dealer to install them for you.

For what it's worth, here's how I went about adjusting the controls. First, I set the crossover controls to their (theoretically) flattest positions. Then I turned the woofers off and the tweeters all the way down. Using a variety of recordings whose derivations I trust (including some of my own tapes), I adjusted woofer level for what sounded like the most natural LF balance. (Some of these recordings, for instance, are known to have somewhat heavy bass, so the "correct" setting with the 1-Bs gave somewhat heavy bass.) Then I set the Lower Tweeter controls to their "flat" midpoint, and listened carefully to the sounds of violins, woodwinds, and female voices. All were a little too hard, so these controls were backed off until they sounded right. Now all that was missing were the upper overtones. For these, I started adjusting the High Tweeter controls from their lowest position (rather than from "Flat") until vocal sibilants, violin guttiness, and woodwind reediness were in proper balance. What's "proper" to me may not be so to someone else (and varies a lot on phono sources, depending on what cartridge you use, though this isn't a problem with CD or tape), but the most important thing to bear in mind is that you can tailor the upper end of this system to sound just about any way you want. (Incidentally, it is essential to do the HF balancing adjustments at your normal listening volume, because the ear's HF response varies according to program level.)

In my room, with my associated equipment, no further response tweaking was necessary, but it's possible to adjust the response through the middle-LF crossover region and through the low end via controls on the electronic crossover. Again, these adjustments should be made using a wide variety of perfectionist recordings. Once the response seems to be optimized, leave the adjustments alone unless you experience a consistent problem apparent on many recordings. Using speaker balance controls as tone controls is the surest way of losing sight of which end is up, and of spending the rest of your life trying to tweak the system to a point of perfection beyond that of any one recording.

Room placement and speaker orientation are two other things which take a lot of time to get right. As usual, the manufacturer's recommendation here is only a starting point. Everything from soundstaging to tonal accuracy is affected by the speakers' placement and orientation in a particular room, and only through experimentation over weeks or months will it be possible to get the most out of the system.

Several readers have reported problems with frequent fuse blowing in RS-1Bs. In fact, I managed to blow High Tweeter fuses several times myself during listening tests, often for no apparent reason. The manufacturer's guess is that this is caused by amplifier overload (clipping), but I hardly consider the Conrad Johnson amps to be hard-clipping amplifiers. That problem remains unresolved. Meanwhile, I urge you to check the RS-1B's fuses from time to time, just to be sure.

All in all then, the RS-1Bs must be ranked among the very best speaker systems that money can buy without going completely overboard. They are not The Ultimate Speaker for everybody, but in view of what they do superbly, I think it fair and accurate to describe the RS-1Bs as the quintessential audiophile speaker system. These speakers do nothing valued by the critical audiophile anything short of superbly! People who get to hear live music frequently, and who value what we have come to call "musicality"—sweetness, warmth, and delicacy—may be better off choosing something else, like the Martin Logan Monoliths or the new Xstatic electrostatics, but in so doing they will give up some of the impact and drama that are just as characteristic of live music.

JGH

THE INFINITY IRS-III AND RS-1B: STILL FURTHER CONSIDERATIONS

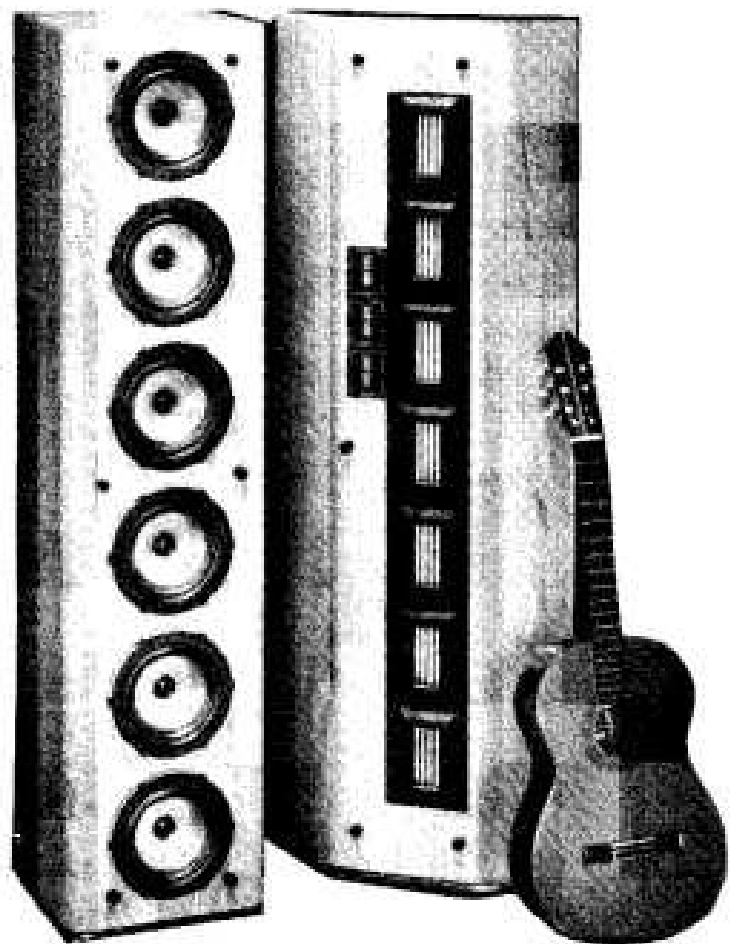
Anthony H. Cordesman

No speaker ever totally disguises the compromises it must make with the laws of physics. Infinity's two largest monitor speakers, however, come as close to hiding theirs as any full-range speakers available. The Infinity IRS has long ranked as one of the top two or three speakers in the world. The RS-1B has slowly emerged as one of the top two or three speakers for the ordinary home.

I now use the RS-1B as my home reference speaker, and a nearby IRS-III at Excalibur Audio as a listening "control" when I'm unsure about how a given piece of equipment would sound on a true line-source speaker or with full response in the lowest octave.¹ With the proper drive electronics and adjustments, both speaker systems are more than reference equipment: they provide as musically convincing and enjoyable a sound source as any equipment around.

At the same time, both speaker systems have their weaknesses, and these tradeoffs provide insights into what can and cannot be accomplished with today's speaker designs.

¹ This doesn't apply to amplifier evaluation, since the IRS-III has its own servo-amplifiers for the low end. —LA



THE INFINITY RS-1B

The RS-1B

The tradeoffs are most obvious in the RS-1B. First, prolonged listening makes it clearer and clearer that the treble and midrange panel outperform the woofer column. Infinity has steadily improved the match between midrange and woofer, but the woofer is distinctly less dynamic, less

extended, and more distorted than the rest of the system. The woofer also seems distinctly "slower" than the midrange, particularly when dealing with brief bass transients rather than sustained organ notes.

There are several practical ways to minimize this problem. One is to realize that the treble and midrange panel is an extremely difficult load. I do not fully trust my measuring equipment, but it is clear that the treble and midrange panels dip to 2 ohms, and can suck up incredible amounts of current. This has led me to revise my comments that they work best with tube amps. They do work superbly with the Conrad Johnson Premier Four or Fives, and very well with the Audio Research D250-II (the Premier Fives clearly outperform the D250-II for the application).

The panels do not, however, work well with low-powered tube amps, and even the Conrad Johnson Premier Four can be a bit marginal at high rock levels. The RS-1Bs are definitely not the proper load for the New York Audio Lab or Counterpoint OTL amps. Any use of lower-powered or load-sensitive tube amplifiers will alter the timbre of the RS-1Bs, restrict dynamics, and usually create a lower midrange/upper bass suck-out that makes the limitations of the woofer column far more apparent, tending to make the entire speaker system sound a bit lean and hard.

Most transistor amplifiers have the same effect. For some reason, amplifiers as good as the Krells and Mark Levinsons do not perform well with the RS-1Bs. However, the Electrocompaniet Ampliwire 100, PS Audio 200C, and even the Adcom 555 provide a balanced timbre and smooth transition from panel to woofer. The Electrocompaniet and PS Audio outperform the Premier Four, Premier Fives, and D250-II in the upper bass region, and possibly in the top octave as well, although the tube gear gives superior handling of midrange transients and dynamics, and provides more low-level harmonic information. (The PS Audio furnishes more detail and focus than the Electrocompaniet.)

You also should carefully consider *mat-*

ching your panel and woofer amplifiers with the RS-1B. Manufacturers are curiously unwilling to send two stereo or four top-of-the-line mono tube amplifiers,² but tests with a pair of Adcoms and PS Audio 200Cs showed that the panel-woofer blend was smoother and more convincing in timbre with matching amplifiers than with any combination of top quality tube amplifiers on the panels and transistors on the bottom. Granted this is a tradeoff, since the tube amp may well provide a sweeter and more transparent sound; the Adcom 555 definitely lacks the focus and detail of amplifiers costing four to ten times as much.

Even with the right amps, you'll find that the Infinity RS-1B needs an "infinite" amount of fiddling. Fortunately, the crossover controls have been improved since our last review. The latest models add a third control for the upper midrange, which can help reduce the glare or leanness that result from using the wrong amplifier. The crossover also has been changed to allow more swing in the lower tweeter control, helping to rectify an area in which the speaker can sound a bit lean. These changes greatly increase the probability that only minor tweaking will be needed.

You'll need to spend a great deal of time spacing and angling the panels to get the ideal mix of depth, width, and imaging detail. I have never heard the panels image properly in any real-world listening rooms without a slight toe-in; this has been true of every other dipole design I've tried, with the possible exception of the Acoustat 1 + 1s.

At the end of it all you'll still "hear the mechanism creak." The RS-1Bs have good, deep bass, but hardly *very* good deep bass. The larger VMPS cone speakers (which are much cheaper) provide far superior bass power, control, and transients. So do the

² Not all manufacturers: Audio Research recently showed up in Santa Fe with two D250-IIs, and an SP-11. A mere \$17,000 worth of tube electronics. We were impressed, and using matching amplifiers top and bottom *did* make a positive improvement (we hadn't had the opportunity to try it before).
—LA

Entec subwoofers. No matter what you do, the RS-1Bs bass will either be a bit slow and unconvincing, or will have to be set slightly lower than the panel to allow the lower midrange/upper bass output of the midrange EMIMs to dominate the sound.

The RS-1B's bass columns simply do not seem capable of proving both deep bass and good bass articulation or transients in any installation I've heard. This evidently requires bigger enclosures, new drivers, or something more dramatic than crossover changes. I am tempted to suggest that Infinity should put its EMIT or EMIM drivers on a VMPS tower, or get Entec to design their next subwoofer, but as this would just get everyone angry, I'll not even hint at such a thing, much less mention it in print.

Keep in mind that virtually all the competition has *worse* problems in trying to provide fully integrated deep bass. I don't know of anyone who provides a better set of compromises in blending deep bass and midrange in a full-range system near the price of the RS-1Bs than Infinity. The unfortunate truth is that almost all designs which attempt to go much below 40 Hz are partial failures, and breaking the 30 Hz barrier always seems to result in bass boom, lack of clear frequency discrimination in the low bass, poor transition from bass to midrange, room interaction problems, etc.

I have only heard a handful of systems in my life that really balanced good, deep bass with the rest of the frequency spectrum to sound musically natural. All were extremely expensive, and most had extensive custom engineering. All required very large listening rooms, and all still have at least minor room resonance or standing wave problems.

This has broad implications for any speaker buyer. If you live in a normal home or apartment, you may well find that *no* system with deep bass will ever fully meet your needs. As a result, you may wish to set the RS-1B crossover so that it does not play the low bass, or consider buying the RS-2Bs instead of the RS-1Bs. I feel the Infinity RS-2Bs are one of the high end's most ignored "best buys." They have many

of the virtues of the RS-1Bs, produce a better overall bass signal, and provide better overall timbre and dynamic integration in most listening rooms. They also are far less amplifier-sensitive than the 1Bs.

There are three further design problems in the RS-1Bs that I feel need correction. The first problem is twofold: the panels are top-heavy, and the feet do not work on padded carpets. Put Tiptoes under both panels and woofer columns; those on the panels need to be of different heights, to tip the panels upwards. You also may want to put several bricks on the rear, to weigh the panels down.

The second problem is more serious, and involves the woofer. The woofer column needs to be placed close to and just behind the panels for the best sound. The dust caps on the woofers, however, vibrate, acting as a midrange driver. You can try rubber cementing a softer, 2-inch dust cap over them, but this—and other, more drastic mods—simply should not be necessary. It doesn't take a golden ear to hear what is happening; Infinity should long ago have fixed this problem at the factory.

The third problem is quality control. Infinity still never seems to produce an entire RS-1B with all the jacks and sockets properly tightened. I've seen a number of RS-1Bs with loose banana sockets, and neither of the two versions I've owned have had properly assembled crossovers. The first did not complete the wiring to one highpass socket, and the second had an intermittent shunt across the left channel. I would also dearly love to see the crossover wired with Tiffany jacks: this would sharply reduce the risk of connection problems, which can transform acoustic feedback into a near-meltdown of your amp.

I also recommend that you replace the standard Monster Cable wiring with the Straight Wire harness for this speaker, and bypass the highpass section of the crossover. The Straight Wire is notably more transparent in the upper midrange than the Monster Cable, and the crossover wiring is too complex, and affects the purity of the

highpass signal.

Consult your dealer for details, but you can bypass the highpass section of the crossover simply by inserting a top quality capacitor of the right value across the your amplifier's input jack. The best capacitors I've yet heard are the Conrad Johnson capacitors, but you can try Wonders, Relcaps, etc. The capacitor in the Infinity crossover isn't all that bad, but it can be improved upon. You also need another interconnect, etc., if you use the highpass section, and straight-in wiring seems to help. The EMITs and EMIMs are superb drivers, and benefit from every possible improvement.

The Infinity IRS-III

This analysis of the RS-1B helps set the stage for a critique of the IRS-III. The IRS has a far larger and more satisfactory bass drive system than the RS-1B, although the larger ENTEC subwoofer, the WAMM bass system, and possibly the VMPS supertower at least rival it. The servo-amplifiers in the IRS columns are rated at 1500 watts, and the six 12-inch woofers in each bass column seem to be mated to an enclosure size that allows them to perform their best. I have never heard anything better with steady organ tones, and the IRS bass columns are capable of incredible power at even the lowest frequencies.

The IRS-III's major limitation is the inability to handle the initial bass attack or single massive transient. The bass columns simply do not seem quite fast enough. They're very good, but not excellent.

The IRS-IIIs do, however, succeed in blending the bass and midrange/treble better than the RS-1Bs. Further, Infinity has steadily improved the IRS-IIIs' combination of EMITs, EMIMs, and crossover. I strongly suspect that better wire would make still further improvements, and bypassing the highpass section of the IRS crossover can definitely make such improvements. Nevertheless, I have never heard any speaker more "right" and musically natural in timbre, transparency, detail, transients, and dynamics, with as wide a range of music.

Other speakers do all of these things well, but the IRS always does them as well or slightly better. No electrostatic provides the same combination of dynamics, detail, soundstage, and total integration. No ribbon as yet is so right in timbre. Cone systems, no matter how they measure, never have the same speed and detail. The IRS has a balance of virtues that is simply the state of the art, and which endures after the excitement of even its best competitors has been replaced with a fuller understanding of their limitations.

I have to caveat these comments, however, with the fact I have never listened to the Wilson Audio Monitors (WAMMs) on a side-by-side basis with the IRS-IIIs, and have to rely on a few listening room sessions and show demonstrations of the Wilson. Nevertheless, I have always come away with the impression that the Wilsons never integrate the midrange and highs quite as well as the IRS, just as the Infinity IRS never equals the WAMMs' integration of midrange and bass. This leads me to prefer the IRS over any competing speaker system I've heard, since I regard treble and midrange integration as the more important parameter, and have never heard any system to rival the IRS-IIIs or the Wilson Audio Monitor that was not a blend of separate manufacturers or a one-of-a-kind design. (And then, damn few!)

Some aspects of the IRS do present problems, however. First, I prefer the soundstage from modified point source in the RS-1B to that from the quasi-line source in the IRS. I suspect that this is because I prefer small groups and chamber orchestra to opera and full orchestral music, and I immediately concede that the line source in the IRS provides a more natural sound field for large-scale music.

Nevertheless, I can never fully believe that I'm in a concert hall with the IRS-III; its sound field seems to come at the expense of a slight loss of focus and definition. In contrast, I feel small musical groups, soloists, etc., can sound quite real with the RS-1Bs, and indeed, with other top-ranking quasi-point source speakers.

Second, I've only heard four IRS setups, but the listening area has always seemed relatively restricted for such a large speaker system. The aural focus always seems best in a two-person listening area. This is probably true of most top-quality speakers, but the focus of the IRS is more delicate than most, and can approach the point where you do not want to move your head once you've found the right position. This is not a problem with the Wilsons, RS-1Bs, Apogees, Quads, Thiels, Vandersteens, etc.

Finally, the IRS is a difficult load, at least to the extent that it requires very careful choice of amplifier and speaker wire to get the best performance. Again, this is true of all top-ranking speakers, but it means that the IRS has some important limitations as a reference. I would argue that the IRS is similar to the RS-1B in that it cannot be used as a suitable reference system for evaluating amplifiers or speaker cables—although both the IRS-III and RS-1B can be extremely useful for this purpose if they are used in combination with another full-range speaker as a control.

Otherwise, the IRS-III is too unique and

too complex a load for amplifier and cable evaluation, even if one could ignore the fact that it has its own built-in bass amplifiers. This will only be a limitation for reviewers and dealers, but it is not insignificant. I would never buy any amplifier or speaker cable solely on the basis of auditioning with either the RS-1B or IRS unless I was purchasing it for use with those specific speakers.

To Be Continued

It takes no great vision to assume that Infinity recognizes these problems and will continue to make at least evolutionary improvements. Virtually every time I see the IRS or RS-1B, I find another set of refinements has been made to the design. I should also stress that this critique in no way means that the IRS and RS-1B are not the state of the art. The problem is that the state of the art simply is not perfect: The sport in hunting for the best high-end components is no more in danger of being spoiled by the appearance of the perfect speaker than it is by the appearance of the perfect phono front end. **S**