"The Studio 40 array EXCELLED ... FLAWLESS performance ..."

Reprinted with permission from

SOUND&VISION
HOME THEATER • AUDIO • VIDEO • MULTIMEDIA • MOVIES • MUSIC

"In a word, they were outstanding ... superbly clear ... utterly uncolored ... natural and present ... plenty of tight, ample bass down to well below 50 Hz, all with great dynamic ease and clarity of attack."

PLUS

Superb sound quality.
Meticulous construction.
Powerful deep bass
from a very small sub.

MINUS

Sub has no crossover-bypass
or speaker-level inputs.

by Daniel Kumin

Studio 40

Many of the new speaker designs I've seen recently look more like a wing, an orb, or an obelisk than a speaker, so it was reassuring to unpack this latest system from Paradigm Reference, the high-end division of Paradigm. The Studio 40 front left/right speakers are solidly conventional, quadrilateral boxes. But they're not rectangular – slightly arched tops give them a sort of raised-eyebrow expression. They are solid, though, in more ways than one, and heavy for their size as well as meticulously finished and expertly put together. The same applies to the similarly conventional-looking CC-570 center speaker. Completing the set, the ADP-470 surrounds are small, trapezoidal quasi-dipoles with four drivers apiece.

Our mix-and-match system came with the front trio finished in a light-toned woodgrain Paradigm calls sycamore that's very nice indeed. You'd have to examine them closely to decide if it was wood or vinyl —and you might just guess wrong.

Setup required no more than the usual wire connecting and level balancing. However, the Studio 40s are an in-between size that I found too short for floor-standing placement but too tall for my usual speaker stands. (Paradigm, of course, sells optional stands that are the perfect height.) I used a pair of semi-homemade adjustable stands that put the Studios 40s just an inch or so higher than ideal. As usual, the center speaker went atop my 30-inch widescreen TV. The CC-570 is big and heavy, so I'd hesitate before putting it on a shaky stand or on any TV with a very shallow or non flat top. I put the surrounds on high shelves to the sides and toward the rear of the listening area in my studio.

I began my listening session in subwoofer-less stereo with *Natalie Merchant Live in Concert* on CD to see what the front left/right Paradigm Studio 40s could do on their own. In a word, they were outstanding. For example, on "San Andreas Fault,' Merchant's clarion alto voice was superbly clear, demonstrating the Paradigms' utterly

uncolored midrange, while their slightly relaxed but extended treble kept the tune's subtle drum work sounding natural and present. The Studio 40s had plenty of tight, ample bass down to well below 50 Hz, all with great dynamic ease and clarity of attack. Even in simple, twospeaker stereo the Paradigm duo's wide soundstage, fullness, and transparency really drew me into a first-rows perspective on the live event.

"Even in simple, two speaker stereo the Paradigm duo's wide soundstage, fullness, and transparency really drew me into a first-rows perspective on the live event."

Nonetheless, surround is really what this is about. A close tonal match between the center speaker and the front left/right pair is critical to the success of any surround system, and here the Paradigms scored very high. I heard only the slightest of differences between the CC-570 and its flanking mates in A/B comparisons using mono TV and radio announcers. With baritone and lower male voices, the center speaker was a tad weaker in the deeper chest tones, but from the tenor range on up, it matched the stereo pair very closely.

"The ADP-470s turned in a flawless performance … extremely natural-sounding ambience … effects were so realistic that I found myself flinching at gunshots in scenes I've heard a hundred times before … a top-flight surround speaker system."

A good center speaker should also sound the same whether you're sitting right in front of it or off to the side. The CC-570 was exceptionally good in this respect. It will deliver the same natural sound to a whole sofa-load of movie viewers – even those sprawled right over the far ends of the widest sofa.

I prefer to use dipolar speakers for the surround channels because a good pair tends to spread sound more evenly and subtly through the rear half of the listening space. The ADP-470s turned in a flawless performance in this regard. My tried-and-true ambience tests — including the distant, circling helicopters in *Clear and Present Danger* — all produced extremely natural-sounding ambience and effects were so realistic that I found myself flinching at gunshots in scenes I've heard a hundred times before. Put all these elements together, and you have a top-flight surround speaker system.

"The Studio 40 array excelled with challenging movie soundtracks … beautifully crisp … impressively smooth … Nice – very nice."

The Studio 40 array excelled with challenging movie soundtracks like that of *Enemy at the Gates,* a pristine DVD transfer with a beautifully crisp 5.1-channel soundtrack. As Chapter 6 opens, a train pulls in noisily straight toward you, exiting and then stopping diagonally to your left. The train sound covers lots of octaves, so a smooth, well-integrated pan from center to left to rear requires really good channel matching from top to bottom of the spectrum. (It may sound trivial, but to reproduce this sort of effect convincingly is a stiff challenge for any surround sound setup.) As the train rumbles to a stop, its squeaks and groans echo into the surround channels, blending in with low, ambient music. I listened to this passage again and again, straining to hear any imperfections, but the presentation was impressively smooth. Nice – very nice.

"All this firepower delivers the big bass you expect … thumped my chest with real effect … genuinely rocked the floor with true deep bass."

Paradigm's Seismic 12 subwoofer is an ultra-compact design sporting two 10-inch passive radiators, a down-firing 12-inch driver, and a high-efficiency switching amp that carries a seismic 1,200-watt power rating. All this firepower delivers the big bass you expect from action/adventure movies. The modest explosions in *Enemy* thumped my chest with real effect, but sound-spectacular nuggets like the big bike-chase explosion in *Mission Impossible 2* genuinely rocked the floor with true *deep* bass.

"No matter what disc I threw at it, the Seismic 12 pounded out the goods, delivering smooth, clean, sheetrock-flexing bass to below 25 Hz."

No matter what disc I threw at it, the Seismic 12 pounded out the goods, delivering smooth, clean, sheetrock-flexing bass to below 25 Hz. I was surprised that a subwoofer of this sophistication lacked a crossover-bypass input for those who want to use the crossovers in their receivers or preamps. (Just the same, I heard no problems from the nondefeatable filter with the sub's frequency control wide open.)

"The Paradigms sounded superb with multichannel music … uniformly gorgeous: rich, seamless, warm, but with distinct string bowings and crisp horn attacks along with a well-delineated, lifelike ambience."

Movies aside, I pulled out my favorite 5.1-channel DVD-Audio discs and Super Audio CDs. The Paradigms sounded superb with multichannel music like *Alison Krause + Union Station Live* (SACD) and Steely Dan's *Everything Must Go* (DVDAudio). And natural-acoustic music, such as James Homer's entertainingly Tchaikovsky Meets Prokofiev orchestral score for *Enemy*, sounded uniformly gorgeous: rich, seamless, warm, but with distinct string

CC-570

bowings and crisp horn attacks along with a well-delineated, lifelike ambience. The Paradigm Reference Studio 40 system is a flat-out first-class suite of speakers that can produce the kind of you-are-there realism that many other systems only wish they could achieve. Sure, at its price, it's no cheapie – not even close. If you're dropping that kind of coin, you expect superb results, top to bottom, which is exactly what you get.

"The Paradigm Reference Studio 40 system is a flat-out first-class suite of speakers that can produce the kind of you-are-there realism that many other systems only wish they could achieve … superb results top to bottom …"

in the lab

Frequency response (at 2 meters)
front left/right . . . . . .83 Hz to 17.2 kHz ±2.0 dB
center . . . . . .85 Hz to 20 kHz ±2.9 dB
surround . . . . . .102 Hz to 17.7 kHz ±2.8 dB
subwoofer . . . . . .25 Hz to 117 Hz ±3.5 dB

Sensitivity (SPL at 1 meter with 2.8 volts of pink-noise input)
front left/right . . . . . .88 dB
center/surround 86dB

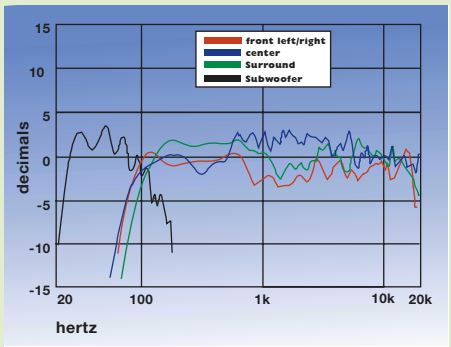
Impedance (minimum/nominal)
front left/right . . . . . .3.5/5 ohms
center . . . . . .3.4/5 ohms
surround . . . . . 2.7/4 ohms

Bass limits (lowest frequency and maximum SPL with limit of 10% distortion at 2 meters)
front left/right . . . . . 62 Hz at 70 dB SPL
center . . . . . 50 Hz at 87 dB SPL
surround . . . . . .50 Hz at 70 dB SPL
subwoofer . . . . . 20 Hz at 87 dB SPL
108 dB average SPL from 25 to 62 Hz
113 dB maximum SPL at 62 Hz
Bandwidth uniformity 96%

All of the response curves in the graph are weighted to reflect how sound arrives at a listener's ears with normal speaker placement. The Studio 40 left/right front speaker had extremely flat, uniform response over its full bandwidth even at radiating angles beyond our primary ±45° listening window. There was a small (-2 dB) depression between 800 and 2 kHz and some interference above 10 kHz directly on-axis that largely disappeared off axis. The CC-570 center speaker had exceptionally flat response and tightly controlled directivity over the entire ±60° listening window. The ADP-470 surround had a deep, sharply defined notch (-33 dB at 1.4 kHz) directly on-axis – considered an advantage with a bidirectional surround speaker – that largely disappeared at 15° and wider angles. This system had remarkably good performance in all main channels.

The bass limits for the Seismic 12 subwoofer were measured with it set to maximum bandwidth and placed in the optimal corner of a 7,500-cubic-foot room. In a smaller room users can expect 2 to 3 Hz deeper extension and up to 3 dB higher sound-pressure level (SPL). The Seismic 12 is a *real* subwoofer. It delivered 87 dB SPL at 20 Hz and 109 dB SPL or more above 25 Hz. Overall output and bandwidth uniformity were world class. There was no level/crossover interaction over the range of the crossover control.

— Tom Nousaine



ADP-470

Seismic™ 12