

RCD970BX as seen in



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Test Bench



quality jacks provide analog outputs and a coaxial-only digital out. The RCD970 needs no locking screws to immobilize the transport when it's moved.

We got out a stack of our best discs, avoiding any HDCD discs which would put the 970 at an absurd disadvantage. We began with *Putting On the Ritz* from Margie Gibson's superb *Say It With Music* recording (Sheffield CD-36). The first thing we noticed was the much reduced sense of depth. After that, the news was mostly good. The rhythm — essential to this song — was beautifully rendered, and Gibson's voice was still gorgeous. At most we noted a slight hardening, particularly on consonants, but the essentials were all there. The piano was slightly woolly and unfocused, but even so it sounded plausible. For a player of this price, it was a promising start.

And happily it remained promising. We wondered whether our piano trio recording (Arensky's *Trio No. 1* on *Dorian* DOR-90146) would survive the 970, since economy players usually destroy it. Certainly it lost some of its considerable attraction. Though it began well, the muted violin was a little too smooth, and sounded too distant. The reduced bottom end — universal on economy players known to us — took some weight away from both the piano and the cello. Depth was reduced, and the very soft parts lost their magic as they vanished into the player's low level haze. Yet, even with all that missing, the basics were there. The trio's complex harmonies were largely intact, the rhythm was very good (why do so many players screw this up?) and the elegiac melody remained breathtakingly beautiful. We had no trouble evaluating how well the Rembrandt Trio plays. "With some players," commented Reine, "I get the feeling that if I owned it there are certain recordings I wouldn't bother listening to. Not with this one. I would listen to this."

We feared that the 970 wouldn't do so well with *The Music of the Night* from the *Back to Broadway* album

Rotel RCD970BX: Solid Evolution

It will probably replace the much respected model 965. It's slimmer, but that's not all. What's inside has evolved too. Competitors beware!

This newest CD player in the Rotel lineup is built nearer to the ground than the model it ostensibly replaces, and it's a reminder how much the line has evolved in recent years. Because the evolution has seldom been accompanied by much in the way of cosmetic changes, people still tell us they have "a Rotel" player without getting any more specific than that. Perhaps it's more than cosmetics. Except for the entry-level RCD945 we reviewed in *UHF* No. 38, most of the company's models have tended to fit into a narrow price range, a little under \$1000. In that respect, this new player does not break new ground.

In other respects it follows the formula too: British design, Dutch technology, Taiwanese construction. The RCD970 uses the new Philips TDA 1305 converter chip, which uses elements of both the multibit and the bitstream conversion method.

This is not the familiar Delta Sigma method, however. The DAC chip begins as a conventional 20 bit converter, with a digital filter having claimed internal resolution of 24 bits, with 16 times oversampling. The sampling rate is then increased another sixfold (by repeating data, since the signal on

the disc still has only 44,100 samples per second). A modulator turns that into a 5-bit modulated bitstream. Finally, 32 parallel "continuous calibration converters" turn the bitstream into an analog signal. Rotel claims the system gives maximum dynamic range without the low-level glitches found in many (most?) digital systems.

The operational aspects are all familiar. The machine can be programmed to play selections in any order or in random order, and it can repeat endlessly. A small but well laid out remote control runs nearly everything, and all its commands are duplicated on the front panel. There are just two functions missing. First, there is no "A-B repeat" function (useful for music students). And the fluorescent readout shows track number and time elapsed on the track, but can't be set to show anything else.

On the rear panel, rather ordinary

**The rhythm was intact.
Why do so many players
screw this up?**

(Columbia CK44189). The harmonic interplay between Barbra Streisand and Michael Crawford is wonderful, but it is also perilously fragile, and we have heard \$2000 CD players destroy it so completely that no one would have guessed why the song was included on the disc.

We need not have worried. The voices were a little hard, as we had expected, but amazingly they did not harden further during the loud parts (which are plenty loud!). Nor was there any exaggeration of the recording's considerable brightness and sibilance. The feeling of space (largely synthetic, but it's there) was reduced, and once more the low level haze wiped out some delicate near-silences, but most of the song worked very well. Rhythm and harmony were well preserved, and when you've got that, you've got most of the song.

This player was growing on us.

We tried another female voice, recorded a little more naturally, Jennifer Warnes' *Ballad of the Runaway Horse* (MCA MCAD42131). The *Rotel* surprised us once again. Everything was a little less refined. The image and depth were reduced, but they weren't gone. The impact of Rob Wasserman's bass was lessened, but it was still pretty good. Background activity (overdubbed bass and voice by Wasserman and Warnes) was hazier and less focused, but it was still clearly audible. Warnes' voice was less appealingly perfect, but it remained very fine (indeed, this player seems to be especially good with the human voice).

We wondered whether the *Micromat* Gold stabilizer would enhance the performance of the *Rotel*. We weren't certain it would; the *Micromat* is especially good at reducing excessive brightness, and the 970 is hardly a bright player. We dropped it on top of the *Duets* album, and we were happy to note a significant improvement in the texture of Jennifer Warnes' voice. "That's the voice I like," exclaimed Reine. The others agreed. We backtracked and heard significant improvements on

The Reference System

When you listen to unfamiliar equipment, you should always have a point of reference. The same goes for us, of course. And, unlike most audio magazines, we have a reference system which is used for all tests.

(a) **Sources:** *Audioméca* J-1 turntable with SL-5 tone arm, *Goldring* Excel MC pickup; *Spectral* SDR-1000SL used as CD transport, with *Counterpoint* DA-10A converter, HDCD equipped; *Magnum Dynalab* FT-101A Étude FM tuner.

(b) **Electronics:** *Sugden* Au-51c preamplifier, *YBA1* power amplifier.

(c) **Loudspeakers:** 3a MS-5's.

(d) **Cables:** *Straight Wire* Maestro, *van den Hul* The Second, *Spectra* speaker wire.

(e) **Room:** Medium-small room with acoustic treatment to control reverberation over the entire range of human hearing.

Is this the world's best system? Not necessarily. Does it sound great? Most visitors agree it does. Should you get one just like it (if you can afford it)? Not necessarily.

Our reference system is just that — a point of reference. It is a working tool. None of its parts must be incompatible with components we commonly test. And if we kept buying new bits for it, it wouldn't be a reference anymore. Your requirements may be different, and they probably are.

other discs as well.

We would later use the *Rotel* 970 in our tests of audio accessories (see *Tweaking the System* elsewhere in this issue). That test, unlike this one, was done with HDCD discs. Once more, we were astonished how good this inexpensive player sounds.

Technical test results were in line with what we heard. The 100 Hz square wave (see first photo on the next page) was perfectly square with no tilted top, indicating that its pleasingly un-bright personality is not the result of rolling off of high frequencies. There was a bit of ringing (the spikes on the risers), but less than the *Counterpoint*. The low level (-60 dB) sine wave (2nd photo) is not exactly perfect, which was no surprise, but we've seen players in this

price range do much, much worse.

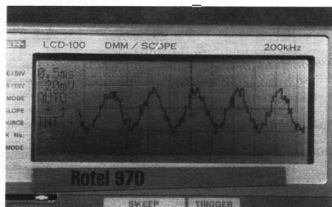
Jitter was moderate to low, which probably explains the 970's excellent sound, and it barely increased when we played deliberately flawed tracks. The 970 can play nearly anything, including a track with a 4 mm laser burn across it! An occasional noise burst popped through, but even that was rare.

We wondered how good the RCD970's *Philips*-based transport is, and specifically whether it's good enough to match a superior converter when you're ready to upgrade. To find out, we tried it with the *EAD* DSP-1000 converter, with some HDCD recordings. The result was far better than we had obtained with an older *Rotel* machine as a front end, but the slightly rough instrumental texture and imprecise image reminded us that *Rotel* has carefully balanced the quality of the transport with that of its own converter. So you can use the RCD970 as a transport, but you probably won't want to use it that way indefinitely. Bear that in mind when you're planning the growth of your system.

We were more than pleased with this new player. Though *Rotel* has plans to introduce an upmarket two-box player, its strong suit has always

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been the lower-medium-priced player, offering reasonable musical performance at an affordable price. With each improvement, it has served notice on makers of high end players that they'd better improve their products too. The 970 is a shot fired right across their bow. It will outperform certain players with high end pretensions and price tags to match. Their makers should be among the first customers lining up to buy a Rotel RCD970BX. After they hear what we heard, they should sit down at the drawing board.

Model: Rotel RCD970BX

Price: \$599

Dimensions: 44 x 31 x 7.5 cm

Warranty: 2 years, non-transferable

Most liked: Astonishing performance at an affordable price

Least liked: Can't be improved by an external converter

CROSSTALK

Compared to the reference source this player is...adequate. When considered within its price range, though, it becomes *very* adequate. The overall sound is softer than most of its competitors, and individual voices still remain digitally hard. However, it was convincingly tamed by the *Micromat Gold*.

It had troubles — as most players do — with string instruments, and the piano tended to be colored and rather out of focus. It had surprising stability at high volume and often surprised me with the coherence it maintained through difficult pieces.

Choirs were surprisingly well reproduced, with no confusion and good depth. If you want to spend more to get a better source, it may have to be a *lot* more. Unless you'd rather keep it until an affordable converter hits the scene. With HDCD capability of course.

—Albert Simon

You know what's amazing about this new Rotel player? Not that it did one thing well, or some other thing well, but that it worked with

every disc we tried. I understand the need to save money, but I always have reservations about gear that will do well on one record and screw up on another. Why have a hi-fi system at all if you can't play the music you want?

The impressive thing about the Rotel is its sheer consistency. It loses some sonic details, sure, but the musical nuances always survive. You should be able to take things like this for granted. Unfortunately you can't.

—Gerard Rejskind

This player is truly surprising. You check its price, which is more than reasonable, but what performance! Its dominant qualities are, I think, an image that is more than all right, a great ability to communicate sensitivity and emotion, very good rhythm, and a generally pleasant sound. The essential part? It's musical. Bravo!

But watch out. Voices are occasionally hard, and in instrumental music the middle registers are somewhat thin.

—Reine Lessard

