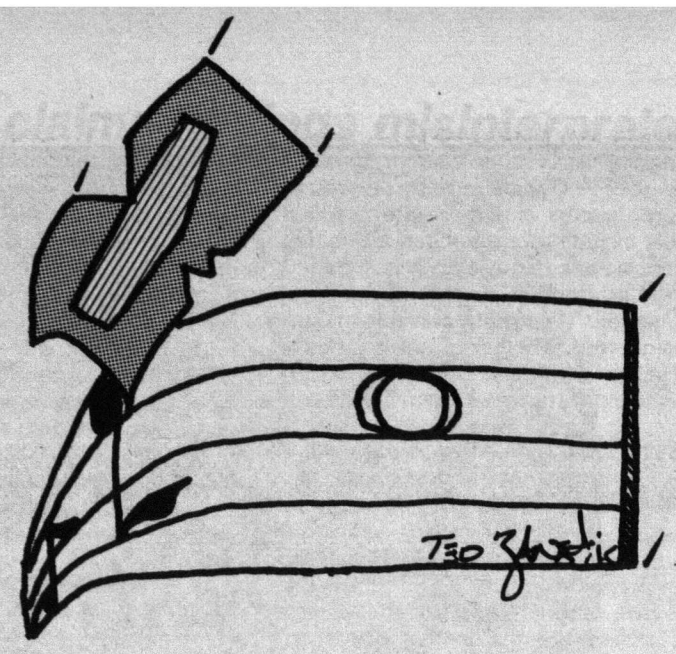
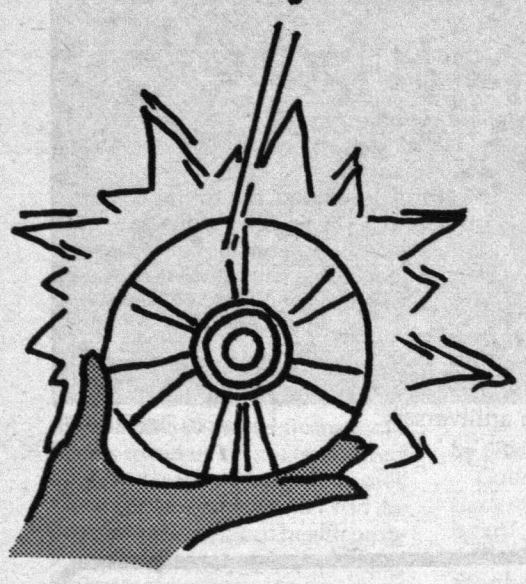


The Compact D



Mike Spindloe

After decades of domination as the recorded music format of choice (or lack thereof), the long-playing record finally appears to be going the way of the dinosaur. First, the convenience, size and lately the improved sound of cassettes became popular, surpassing record sales in units for the first time ever in 1985. Now, however, the medium which supporters claim is the ultimate in sound reproduction has arrived to challenge the supremacy of both formats: the Compact Disc.

If you're not familiar with Compact Discs already, you will be soon, because at the current rate of growth in their market, Compact Discs (CDs) will be the recorded music format of choice within the next 5-10 years or even less, rendering the beloved long-player (LP) virtually obsolete.

Actually, the contest was over almost as soon as it began. Even dedicated record collectors are being won over to the CD format in droves.

The advantages are too many to ignore: superior sound reproduction, durability, ease of care and smaller size are the major advantages of CDs over LPs. In fact, until the CD came along, improvements in audio were necessarily limited to masking or minimizing the imperfections of the LP and cassette formats.

Despite a few knocks against the sound of CDs as being harsh and sterile in the early days (a hardware related problem that has been solved) and the relatively high prices of discs, any small shortcomings of the CD format pales against the inherent imperfections of LPs, namely warping, scratching, surface noise, wear and bulk to name but a few.

So, we might well ask, what's behind this brave new technology? Can I, a struggling university student, afford CD? What does the future hold for improvements in CDs? What is life? The answers to these and many other questions can be found herein, so read on and you too, (U2) will become "CD literate."

At the heart of it all are two different but related developments in technology: digital recording and the laser.

Technology

First and most recent is digital recording, which is possible via the storage capabilities of computers. The concept is fairly simple: rather than recording sounds onto a magnetized ribbon (recording tape), an imperfect medium, they can now be stored in the form of binary codes on a computer program. Once the wave forms (sounds) have been stored thus, they can be recalled or reproduced with no loss in quality, as opposed to the drop which occurs when dubbing a tape. If the digital process is utilized right through the mixing, mastering and duplication stages the finished product (CD) will have the exact sound quality as the original take of, say, Mark Knopfler's guitar solo.

Of course, only CDs retain this optimum sound. Both LPs and cassettes are prone to drops in signal quality at least through the pressing or duplicating (respectively) and playback phases. A worn stylus or dirty playback head further adversely affects the sound reproduction of an LP or cassette. This brings us to the laser beam, the second crucial element of CD technology.

Inside a CD player, the laser beam "reads" a series of microscopic pits etched into the disc and corresponding to the original binary codes by registering changes in the light patterns that reflect from the pits. The laser makes no physical contct with the disc, therefore there is no wear. If you already have a CD player, you've probably noticed that it produces a much stronger output signal than your turntable or cassette deck; this is the difference between the original recording and what's left by the time a turntable stylus slices it's merry way through the grooves, eventually wearing out the record.

Considering the truly revolutionary improvement in sound reproduction that CDs represent their rapid acceptance by the North American consumer should come as no surprise.

Choosing a player

Ironically, though the CD is actually a first cousin of the laser VideoDisc, that format has taken a back seat to VHS and Beta video formats. The good news for the general public is that the price of players has already come down to the point where the more basic models cost about the same as a midline turntable or cassette deck. At the same time, you can still also go first class and spend a fortune on a CD player.

Whether or not that is worth it probably depends on your budget, since sound quality doesn't vary much from brand to brand or model to model for CD players, regardless of what the various audio manufacturers claim in their propaganda. The main difference between a $300 unit and a $1000 unit is overall construction and toys like remote controls.

At the bottom end of the spectrum, $300 or so will buy you a decent basic player that will blow away your turntable and also perform basic tricks like selecting individual tracks or skipping from track to track.

As you dig deeper into your wallet (or purse), you get audible search (ten times normal speed but you can still identify the song, unlike the garbling effect of cassette deck search functions), memory programs, random play, repeat, A-B repeat (so you can listen to 12 bars of Mark Knopfler's guitar solo ad nauseum until you finally learn to play it), remote controls and multi-play capabilities. Food processing attachments are still in the testing stage.

Since every manufacturer and his dog have jumped into the CD arena, a meaningful review of the various brands of players goes beyond the scope of this article. There are a few upper end models that bear mentioning though, both featuring the aforementioned multi-play capabilities.

One is the Pioneer MultiPlay, which allows you to load six CDs at one time into a magazine and play them back in every and any conceivable order, over and over, by remote control or direct command, into infinity. True, this could become wearisome, but imagine, for instance, that you are throwing a party. You can load up the player, tell it what to do and forget about the music for the rest of the night.

Working in the same manner, for all you car stereo buffs, is the Sony DiscJockey, a trunk mounted unit (to protect against theft) accessible by remote control from inside the car. It will load up to ten CDs at a time and perform the same kinds of functions as the Pioneer MultiPlay. Unfortunately, I can't tell you how well it works at -30 degrees. Be forewarned though: both of these players are worth (or at least cost) upwards of $1000, definitely not tailored to Students' Finance Board budgets!

Simpler and less expensive under dash players are also on the market, as well as a growing range of Walkman style players and ghetto blasters. In both the latter categories, JVC, long a leader in the portable stereo market, have come up with a portable stereo, a.k.a. ghetto blaster, with detachable speakers, four radio bands, a cassette dubbing set (two decks) and room for a CD module to plug in. The CD module doubles as a Walkman-style player, adding even more versatility to an already highly adaptable unit. The price for the whole system currently runs around $800.

Before we leave hardware behind, it is also worthy to note that not only has the advent of Cd given audio manufacturers a completely new toy to sell us, it has given them an excuse to tell us that in order to fully appreciate the wonders of CD we also need, at the very least, a new amplifier and new speakers. Like all self serving advice, you can take this with a shakerful of salt. There are now also CD-ready cassettes, an examination of the effectiveness of which again goes beyond our scope herein.

There is some truth to the manufacturers' claims, however, in that CD will expose the inadequacies of your audio system a lot faster than any analog medium.

In addition to the greater dynamic range of CDs, they also have markedly superior frequency response (the range of actual pitches that can be accurately reproduced). This capacity will test the ability of your speakers to do likewise.

You can also turn up a CD much louder than a record without hearing a deterioration of the signal or turntable rumble, which can lead to the erroneous impression that your amplifier is happily processing this fantastic sounding signal, when in fact it is overheating. This shouldn't be a problem for most people, though, since even a 20 watt per channel home amplifier will deafen you before blowing.

"Food processing attachments

Disc-o-graphy

Onward then we go, to the wonderful world of software (as, I hear my CMPUT prof shouting, "The disc is hardware, the program itself is software.") Starting with the basics, a CD is a silver disc about 4½" in diameter, actually resembling a small record. The date is stored between two outer layers of plastic, protecting it from damage.

The design is not completely foolproof