

The

WAYBACK

Machine

by David Ellis



Laserdisc Games in the Palm of Your Hand

In a number of past installments of *The Wayback Machine*, I have reminisced that avid coin-op fans of the 80s were always looking for a way to bring the arcade experience home. The first mega-hit home video game console, the Atari 2600, was catapulted to its success largely because somebody at Atari was savvy enough to lock in the licenses to most of the popular coin-op video games of the time.

We, the home video game consumers, were (usually) pretty tolerant of the fact that the home versions didn't quite look like the arcade versions. We knew that technology and cost were limitations, and that the game companies of the time did their best with what they had. They even took on extremely involved games—*Defender*, for example—and somehow squeezed five buttons and a joystick's worth of controls into a joystick with a single fire button. Not to mention that they took a graphically complex game (by 80s standards) and created what was at least a semi-recognizable facsimile with only a fraction of the computing horsepower.

Although we always hoped that our favorite arcade games would eventually make it to our home consoles, we were also realistic about what could and couldn't be done. The best example at the time was *Dragon's Lair*. One look at that game and even the most hopeful among us knew that there was probably no way it would ever make it home—not on any of the consoles most of us owned at the time.

Not that it wasn't attempted. Starting in 1984, there were a number of attempts to recreate the arcade hit—minus the laserdisc animation, of course. None of these was particularly successful. In fact, it wasn't until the Commodore Amiga came along that home computers with sufficient horsepower to handle the original animation existed.



And even the Amiga version had to leave out some of the rooms from the original game due to data storage limitations.

Nowadays, console, PC, and even DVD versions of the game exist. But who would have thought that it would ever be possible to play *Dragon's Lair* in all its original glory

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in the palm of your hand?

Hans Olsen and his team at United Coders have been around since 1987, and they recently began developing video games for a number of platforms, including the Nintendo DS handheld system. Like all of the other video game fans who drooled over the

animated wonder that was *Dragon's Lair* in 1983, Hans was always on the lookout for a home version that could do justice to the arcade original.

"Since 1983 I have been a fan of the game, and always invested in new versions of the game as they became available on home computers and consoles," he said. "I still remember saving up money for months to buy the C64 cassette version, which in reality had nothing in common with the original *Dragon's Lair* game apart from its name."

Hans describes finding the perfect home version of *Dragon's Lair* as one of his childhood dreams—and eventually that dream morphed into a desire to become involved in the development of a *Dragon's Lair* game. He turned his sights on the powerful handheld platforms that are currently available.

"Being a licensed and certified Nintendo developer it was a surprise to me that nobody had begun developing a version of the game for Nintendo DS," he said. "At this time there are about 50+ different versions available on a variety of platforms and consoles, and there was even a version for the original Game Boy, and one for Game Boy Color, yet no release was ever arcade accurate, and in most cases lacked the look and feel of the original arcade."

United Coders contacted *Dragon's Lair* LLC and Digital Leisure, the co-owners of the *Dragon's Lair* intellectual property, about a year ago with a proposal to bring the game to the Nintendo DS.

For those who are unfamiliar with the DS, the Nintendo handheld is currently the best selling game console on the market. The device has two three-inch color LCD screens, each of which has a resolution of 256 x 192 pixels. One of these is a touchscreen where the player can interact with the game via an included stylus, and a built-in microphone that allows the player to use voice commands in games that are designed to respond to them. The DS has 4 MB of RAM, and two ARM processors—a main CPU that runs at 67 MHz and a 33 Mhz co-processor.

Hans says that developing any game for the DS, where the memory and cartridge space are sparse (at least by today's video game console standards) is challenging, but is definitely something his team is well suited for.

"I have a background writing games on the C64, the Amstrad CPC and the Amiga and Atari ST, and the development process is not that different! Mind you, if you have only done games on PC, Xbox or PlayStation, there is a lot to learn. In my opinion, if you

are old enough to have done games on the old 8- and 16-bit computers, you have a head start over developers who have never done work on those systems."

The biggest challenge in the case of *Dragon's Lair* was the video footage. The DS version contains *all* of the footage that was originally on the arcade laserdisc—which was no small task considering the storage limitations of DS cartridges!

"A laserdisc could store [around] 30-50 gigabytes if you stored the files digitally and uncompressed," he said. "The PC version released about five years ago used 1.6 GB of data for the video footage alone. On the Nintendo DS... the largest cartridge size currently available from Nintendo, the maximum amount of space is 128 megabytes on the cartridge. We spent the better part of two months doing nothing but experiment-



ing with the original video and audio—to see how much we could compress, and how, to fit every single video frame onto a small Nintendo cartridge. In fact, one third of the development time (actually more) was spent entirely on converting and optimizing video to ensure we had the best possible visuals without loss of quality."

The quality of the images seen in the pre-release screen shots seems to indicate that this was time well spent. The animation looks very crisp and clean in spite of the amount of data compression used.

After the video problems were solved, the team moved onto the game itself. In this area, Hans and his team decided not only to recreate the arcade game, but also to create what they call the Director's Cut mode. The goal Arcade mode was to recreate the arcade experience as accurately as possible. This mode, therefore, doesn't take advantage of any of the console's unique input features.

"The Arcade mode is exactly what its name implies; a genuine arcade accurate version of the 1983 arcade game with LEDs for scores, featuring the same semi-randomness of the

scenes being played," Hans said. "In Arcade mode... you play the game using the D-Pad and the A button as your sword."

Throughout the development process, Hans and his team was in close contact with the original creators of *Dragon's Lair*, who provided invaluable support throughout the six-month development process. In addition, to ensure that the Arcade mode accurately recreated the coin-op experience, United Coders brought together a team of expert advisors and testers to assess the game.

"We wanted to ensure that we created the best ever arcade accurate version of the game," said Hans. "We spent a lot of time seeking out the world's most experienced *Dragon's Lair* experts. These are the people who can play the game from start to finish, without dying, blindfolded, with their backs turned to the arcade! The Advisory Panel is a hardcore bunch of specialists whose exclusive mission in our project is to ensure we get everything right, down to the smallest detail."

The new Director's Cut mode moves beyond the original arcade experience in a number of ways. For starters, the player gets five lives instead of three. In addition, the updated version of the game takes advantage of the unique control inputs of the DS.

"The player can use the D-Pad to navigate Dirk, or even use the stylus and tap on the bottom screen to invoke an action," Hans explained. "In addition to stylus support we have support for the Rumble Pak which rumbles (shakes) the Nintendo DS when the player is supposed to make a move. Most new players are frustrated because they are not sure when to make a move, and in which direction to move. The support of the Rumble Pak does not give the player the solution, but it does rumble the DS at the time when a move is expected! [The Director's Cut also features] voice recognition, meaning you can... simply sit back, relax, and talk to the Nintendo DS to control Dirk throughout the adventure!"

One of the most interesting additions from a classic game enthusiast's perspective is the inclusion of game footage that wasn't found in the arcade game—at least not in the US release.

"Director's Cut mode features [a] scene... where Dirk the Daring has to cross a drawbridge and avoid getting killed by tentacles. This video footage existed in 1983 but was never used in the North American version, only in the European version of the arcade. In Director's Cut mode, this is always the



very first scene you play, as it gives a nice introduction to the player beginning the adventure. The laserdisc from 1983 had a lot of video footage that was never made available to the player in 1983. All this extra footage is now available in Director's Cut mode."

Director's Cut mode also changes the flow of the game, making it more linear.

"In 1983, the game played somewhat 'semi-random'; by this I mean some scenes, in particular a falling platform, was played no less than four times during a single game play session!" Hans said. "To new players who have never played *Dragon's Lair* before, it's highly confusing that you need to play the same sequence over and over again. Director's Cut mode is based on a more linear adventure approach where the scenes are... in a specific sequence carefully conceived and invented by our Technical Producer, Dave Hallock, who is, without doubt, the worlds leading expert on *Dragon's Lair*. Dave Hallock is also one of the few people who has ever reversed engineered the original ROMs,

and improved flaws in the original game."

Director's Cut mode has a number of other features that make the game less arcade-ish and more like a modern adventure game. The goal in this mode is not to achieve the highest score—your goal is to rescue the princess. To that end, there is no score, and the game allows players to track progress on a scrolling map of the castle.

Now that United Coders has just about finished with *Dragon's Lair*, the question that probably comes to the minds of many classic game fans is whether the team plans to take on any other laserdisc games. Hans says that he and the team are definitely interested in doing so—and they have the technology in place to tackle the task.

"Throughout the process of developing *Dragon's Lair* for Nintendo DS we have developed a genuine laserdisc game engine; this engine allows us to adapt any laserdisc game to our code with minimal effort," he said. "Obvious games for us to work on would be *Dragon's Lair 2* and... *Space Ace*, both of

which are very similar to *Dragon's Lair* from a technology point of view. I would be very surprised if United Coders are not involved in other laserdisc based games in the next year or so."

Even though there are a myriad of versions of *Dragon's Lair* available today, the DS version is definitely shaping up to be one of the most faithful recreations ever produced. Sure—we all know that nothing compares to standing in front of an actual arcade cabinet and playing the real thing, but if you're looking for a *Dragon's Lair* fix without the laserdisc game maintenance headaches and the high cost, this might be just the ticket.

Plus, it fits in the palm of your hand and you can take it with you wherever you go. The game that arcade enthusiasts never thought would make it home in any form resembling the original can now play *Dragon's Lair* on an airplane. Ain't modern technology grand?

Lead on, adventurer. Your (handheld) quest awaits! **GR**

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