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Assignment #1

Preserving Nintendo's *Duck Hunt*

In the mid 1980s, home video game systems began to revitalize after the game market crash of 1983 as a result of over saturation of the market. One of the leading game systems to emerge afterwards was the Japanese company Nintendo Entertainment System (NES). Nintendo became a fan favorite with the introduction of popular games such as *Super Mario Bros.*, *Legend of Zelda*, *Paperboy*, *Donkey Kong*, and many more. Several popular games were spin-offs of other games, for instance *Donkey Kong* led to a *Super Mario Bros* spin-off. Some games were sold as combinations, giving players an option to play different games on the same cartridge. One such popular “bonus game” was *Duck Hunt*, which was originally featured as a “B-Side” game on the original *Super Mario Bros.*, which was often included with the original NES console. However, *Duck Hunt* was a unique game, which required additional hardware. Throughout the later part of the 20th century and early 21st century, gaming systems continued to advance. NES, along with its competitors such as Sony Playstation and Sega introduced several models and different generations. Nintendo introduced Super Nintendo, Nintendo 64, and most recently Nintendo Wii. Several classic and popular games from the original NES were re-introduced or re-imagined on the newer consoles; however, some games remain only a memory to the gaming fan base. *Duck Hunt* was a unique game that is physically attached to the original NES. As a unique gaming experience that was never truly

replicated, *Duck Hunt* is a historic game experience that needs to be preserved. This paper focuses on the unique aspects of the game and what needs to be considered for preservation and simulation.

Nintendo introduced *Duck Hunt* in the United States in late 1985 as a combo with *Super Mario Bros.*, which was often included with the purchase of the NES console. The game is categorized in the genre of “Light Shooter Games,” and is modeled of an earlier Nintendo game based on shooting clay pigeons. The main object of the game is to obtain a high score by shooting as many ducks as possible using the NES Zapper, a light, laser gun. There are three levels or “games” of *Duck Hunt*, which vary slightly. The Game A “One Duck,” gives the player three opportunities (three bullets) to shoot the duck flying across the screen. The faster you are able to shoot (and the less bullets that are used) increases the score. Once the duck is shot, it drops to the ground and the dog picks up the duck. If you are unable to hit the flying duck, the duck flies off screen and a laughing dog pops up to mock the player [Figure 1]. As you go through different rounds, the duck flies at different speeds (which is indicated by the color of the duck). Game B is the same as Game A, only this time there are two ducks flying across the screen at the same time, and the user must shoot both ducks. The multiple rounds in each level feature ducks flying at faster and varying speeds. For instance, one duck might be flying slowly while the second duck is faster, thus being a harder target [Figure 2]. The last level, Game C is different from first two as the player is shooting at clay pigeons instead of flying birds [Figure 3].



Figure 1: Laughing Dog



Figure 2: Two Ducks



Figure 3: Clay Pigeons

The game uses minimal graphics, mostly one static image of a three-branched tree in a field for the first two levels and just an open field with a mountain range in the background for the final level. While it may not be the most advanced set of graphics, it featured many vibrant colors. It also features music composition by Hirokazu Tanaka and Koji Kondo; however, the main sound associated with the game is the sound of the rifle. The player hears the sound of gunfire (and the click of the laser gun) when they shoot, as well as the sound of the ducks and the dog. The game's peripherals are perhaps the most remembered and significant aspect of *Duck Hunt*. In order to play the game, several pieces are needed in addition to a television. The standard NES equipment including the console, power adapter, cable plugs, game cartridge, and most importantly the NES Zapper [Figures 4-6]. The NES controller can also be used, but is not needed as the Zapper acts as the controller, allowing the player to point and shoot at which game level they wish to play. In order to play the game, the Nintendo console needs to be hooked up to a television, zapper plugged into the number 1 controller slot, and the game cartridge must be pushed down inside the console. The user experience is perhaps the most unique aspect of *Duck Hunt*. When users remember this game, they typically remember the arcade-like style of playing *Duck Hunt* using the Zapper. *Duck Hunt* was one of the first games to use a light gun for home entertainment systems and was quite popular due to The NES Zapper is a light laser that registers the light from the screen when the trigger button is pressed. According to an article on video game peripherals, "the gun contains a photodiode (or a phototransistor) in the barrel. The photodiode is able to sense light coming from the screen. The gun also contains a trigger switch. The output

of the photodiode and the switch are fed to the computer controlling the game¹.” The laser gun allows interaction between the player and the game through the use of light emitting from the television screen.



Figure 4: NES Console



¹ “How Does A Light Gun for a Video Game Work?” *HowStuffWorks.com*. Accessed 10 April 2011. < <http://www.howstuffworks.com/question273.htm>>

Figure 5: Game Cartridge



Figure 6: NES Zapper (Laser Gun)

In order to preserve this game, there are several factors to consider, as well as the many problems that often arise. *Duck Hunt* was only available on the original NES, which was discontinued after Super Nintendo was introduced in the early 1990s. In order to play the game in its original form, one must play it on a NES console, which is hard to find in good working condition as any currently found are approximately 25 years old. Another item that is slightly hard to come is the Zapper; however, the game cartridge is more easily found as it was produced in large quantities for inclusion in the original US NES console purchase. While it may not be difficult to track down these items, it is hard to know if they will be in working order. For the purpose of this paper, I attempted to recreate the conditions needed to play *Duck Hunt* in its original form, which resulted in

several problems that are factors in preserving this game. I located my original 1985 NES console, which had not been used in at least ten years. Aside from being slightly dirty, the NES appeared to be in good condition. However, after hooking up the cables to the television, plugging in the adapter and Zapper into the console, and inserting the game, I was unable to get a signal. The red power light would brighten for a few seconds and then dim or completely turn off. After trying to hook up the NES console to different televisions, the same result would occur and occasionally could not even get the power light to go on. Most likely the console is in need of a new pin, which is cheap, although difficult to replace. While this test could not be completed, a few things were discovered during research into the problems. One significant finding was that even if the NES console and game would work, it would have to be hooked up to an older television. If a person tries to play *Duck Hunt* using a newer LCD flat screen television, they will be unable to actually play the game. The Zapper relies on light emitting from the television, but with LCD televisions, the light sensors in the Zapper will not be able to register light from the screen². So in order to play *Duck Hunt* in its original format, a player is dependent on the working condition of older technology. While this does not seem particular difficult at this time as most people still have many of these items, in ten or twenty years, it will be extremely difficult to find as technology continues to advance and change dramatically.

The next question concerning the preservation of the game focuses on emulations or other versions of *Duck Hunt*. The game is not featured on other NES systems; however, if it were to be offered on the Wii for instance, it would be a completely

² Interview with Ben Moskowitz. February 2011.

different experience. Also, there are several computer emulations of the game on the Internet. Users can play a version of the game that looks relatively similar and offers at least the first two levels of the game (though the Clay Pigeon level is not often replicated). While these emulations offer a new life to the graphics and preserve the look of the game, the biggest drawback is the user experience. Using a spacebar to shoot the ducks is not the same as using the Zapper. Also, if the game were to become available on Nintendo's Wii, it would not be the same experience as physically pulling the trigger and hearing the click of the Zapper. The game relies on that unique experience of aiming and shooting the laser gun at the screen. The use of the Zapper is what made the game different and what is best remembered about *Duck Hunt*. Another factor that needs to be considered in the preservation process is the game cartridge. Though there are currently many *Duck Hunt* cartridges available on market sites such as Amazon.com and Ebay.com, this may not be the case for long as the cartridge is seen as an obsolete format. Also the cartridge runs the risk of being easily damaged and unplayable. While this game might be able to be preserved in its complete original form in museums, such as the Museum of the Moving Image, which features a permanent exhibit on video games, the long-term preservation and accessibility of the game is questionable. In order to properly preserve this game, the user experience needs to be preserved and documented. Perhaps recording people using the game as well as giving testimonies recounting their memories of playing game would be one option for the preserving the legacy of the *Duck Hunt*. For instance, some people would "cheat" and place the Zapper right up against the television screen, while others would try to see how far away they could be and still hit the ducks. Accounts like these and others would be a nice accompaniment with an exhibit or even

an online version of the game. Documenting the user experience will allow the memory of *Duck Hunt* to be preserved and allow for future generations to understand the significance of this game.

The majority of this paper was constructed based on memory of the game from my own childhood as well as playing emulations of the game. This game is not only alive and well in my memory, but in the memory of countless others. *Duck Hunt* was a significant, cultural experience for young Americans growing up in the late 1980s and early 1990s. As technology continues to evolve, preserving these unique gaming experiences become harder, and are in need of documentation. Migration is not always a viable option as it loses an important aspect of this game. As of now, *Duck Hunt* is available online and still playable for some; however, the time is coming when this will not be the case. The unique arcade-like game needs preservation and most importantly documentation of *Duck Hunt*'s significant impact on a generation.