

Pod Racer Sound Design

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ABSTRACT

In this paper, I describe the thought and considerations for creating the sounds used in my Star Wars Pod Racer Prototype.

Warning

The Max Patch Requires an Xbox 360 Controller to Work Correctly

1. Introduction

In 1999 Star Wars Episode I: The Phantom Menace was released the film itself grossed \$924.3 million dollars worldwide. A spin-off of the film was Star Wars Episode I: Pod Racer game, this was based on scene from the film where a race is held with what can only be described as jet powered chariots. The game was available for the N64, PC, Mac and Dreamcast and had some commercial success.

2. Aim

The aim of my project was to create two sets of sounds for two characters to be used in a prototype game based on the Pod Races from Star Wars Episode I.

3. The Characters

I have decided to create sounds for the two main characters of the game these are Anakin Skywalker a human child working with the Jedi and Sebulba an alien with a ruthless streak who is the current Pod Racing Champion.

3.1 Anakin Skywalker

Anakin's Pod Racer is small light and nimble, during the film it breaks down several times and looks like it is in a state of disrepair. The sounds used need to reflect these qualities.

3.1.1 Engine

Anakin's engine is split into 6 stages, 3 up stages and 3 down stages Low, Med and High. This meant creating sounds that would gel together when faded into one another. Anakin's pod racer is light and small I tried to reflect this in the sounds I used so for a base for the engine I used a high revving V6 a High, Low and Med recording of this features in all the sounds both up and down. the pod racers are however not cars and so to make them sound more like a small jet I added some high pitched jet idle sounds to the V6 to make it seem more like a jet engine. Through some experimentation I decided that the On Sounds needed a third element to make them sound more convincing, I didn't want to make Anakin's Pod sound too High-Tech as the character has built the pod by himself and it keeps falling apart.

So I decided to add the sound of a Huey Helicopter idling to the Throttle On Sounds, this adds a nice texture to the on sounds producing a winding up/beating sound created by the rotor blades as the samples are pitched up without sounding too advanced.

3.1.2 Brakes

As explained earlier Anakin's pod is a bodge of a Pod Racer and I have worked this into the brakes. The brakes consist of a tired sounding motor and a rusty squeak, making them sound like if Anakin brakes hard they might fall off.

3.1.3 Weapon

Anakin's weapon is a laser the laser was created by mixing the sound of an explosion with a pitch bent sine wave, the sound is a bit of a cliché but as the game is a Star Wars Game it needs to follow some Sci-Fi Principles to fit into the Star Wars world. The targeting system is just a simple saw wave tone repeated until the player finds a lock. Once a lock is found the system plays a target locked sound this is a short selection of pitched beeps. I tried to emulate some of the sounds used in the Star Wars universe and this is one instance of this, as Anakin is a future Jedi and the creator of C3PO I decided to make the sound similar to one of R2D2's whistles. Whilst doing this I was careful not to make the sound too similar so not confuse the gamer.

3.1.4 Turbo

I created Anakin's turbo as a rhythm based feature of the prototype the user must time their presses of the turbo button to get the most out of it. I envisioned that Anakin's Pod was so dilapidated that he has to manually pump fuel into the turbo. With this in mind I created the sound of his turbo out of some unpredictable elements, the base element in the sound is an earthquake the sound just features as a low rumble but it has quite a lot of varied modulation which makes it fit well in the pumping turbo sound. The second element of the sound is a fiery explosion which has been turned into a pulsing loop which if you time the turbo right comes into rhythm with the button presses. The last element was inserted to give the turbo a sense of speed. The sound is the high-end whirr of a helicopter starter motor pitched down slightly, so that when it was pitched up it wouldn't go out of the range of hearing. When the turbo is ready a series of positive Star Wars/R2D2 style beeps are played and when the turbo is depleted a series of negative beeps is played.

3.1.5 *Coupling Beam*

To continue with the small and lightweight theme I created a short loop using several electricity sounds and pitched them up two tones. To make the electricity sound like it was modulating I added a small amount of chorus and then inserted it into the max patch. In the max patch I decided to create a phaser that was controlled by the Xbox controller input when the right thumb stick is moved the speed of the phaser is increased. I did this to simulate the strain that turning the pod would have on the electricity beam.

3.2 *Sebulba*

Sabula's Pod Racer is much larger and more technically advanced than Anakin's. Sebulba's is not afraid of contact and on the race course is highly aggressive, so I have used sounds that I think will reflect this.

3.2.1 *Engine*

In comparison to Anakin's Sebulba's Pod Racer is large and high-tech. I have reflected this in the sounds I have used, as with Anakin's pod I started with a car engine. In the film sebulba is the villain and so I decided to use the sound of a V8 as his base sound. This was chosen for several reasons the low and aggressive sound of a V8 is a movie classic and is often driven by the bad guys. However to get the right the right sound I had to use three different cars, the Low stage of the engine was provided by a Ferrari F360, this wasn't quite as bassy as some of the other engines but still retained the raw energy that was needed to make the Pod sound aggressive. The Mid Section of the base engine sound was provided by a Morgan Arero-8 this I used this because the sound featured a slight burble in the mid range, almost like a single propeller fighter plane. The high section was provided by a Mosler MT900, the Mosler is an American Series racing car and gives the top end of the engine the over-revved on the edge sound. Like Anakin's pod I needed to make the base engine sound I had created sound more like a jet so that the sound would match the style of the pod racers. To make the base engine sound more like a pod racer I added the sound of a Turbo Shaft Helicopter this gave the base engine the feeling that it was moving a vast amount of air but without the extremely high pitched whine that jets create. To complete the sounds I added a small amount of chorus the low end to create a winding up effect on the low sound.

3.2.2 *Brakes*

In contrast to Anakin's pod racer I made Sebulba's brakes very precise and harsh there is very little envelope on the sounds to make is sound like Sebulba doesn't use his brakes often but when he does he really needs to slow down quickly.

3.2.3 *Turbo*

Sebulba's turbo is a one hit wonder once it is triggered it cannot be stopped. The idea was to make the turbo sound and work like a scram jet. It takes a massive amount of power to start it but once it's put in motion there is no stopping it until it runs out of fuel. To make this sound I used the start up and stop whirr of a helicopter and added the sound of rushing wind during the actual boot phase. The sound is simple but effective. As with Anakin a when the turbo is ready a positive sweeping almost "charging up" sound is played and when the turbo is depleted a

deflating sound is played these two sounds were used purely to provide information on the status of the turbo.

3.2.4 *Weapon*

As Sebulba has a large high tech Pod Racer I decided that he should have Missiles as a weapon. The targeting system works in the same way as Anakin's but has a slightly different sound. The sound is loosely based around the Missile Lock system found on an F-14 Tomcat Fighter Plane, there is a series of beeps that increase in speed and volume the closer the player gets to achieve a lock. The lock sound is a simple modulating looping saw wave.

3.2.5 *Coupling Beam*

I have made Sebulba's coupling beam sound low and menacing like his engine, I did this by pitching the sound of a Jacobs Ladder (a slow moving arc of electricity) very low and then adding some pink noise generated in audition. I then removed some frequencies from the pink noise using a comb filter, and then re pitched the whole sound down again to make it sound lower and slower.

4. *Global Sounds*

4.1.1 *Air Resistance*

The roar of air when the air brakes are applied was created by recording the sound of a flaming aerosol. (Health and Safety Note: This was performed outside using my own equipment. It was also the best sounding roar)

4.1.2 *Collisions/Scrapes*

The scrapes were created by layering multiple scrapes, drags, and grinds in various intensities and speeds, the sounds were then turned into a loop which is triggered in the Max patch by a system that determines if the pod touches the sides and at what velocity. I decided to use lots of little scrapes rather than one big one as the courses found in the pod racer game contain lots of rough varied surfaces and the pods are odd shapes and therefore would not hit the side of the track in a uniform way.

The collisions were created using a similar method. I layered lots of different metal impacts and scrapes as well as a low explosion to try to recreate the sound of a large craft hitting a stone wall at high speed.

4.1.3 *Sound Of Speed*

There are three sounds used in recreating the sound of the pod racer moving through the air. The first is an ambient stationary wind sound but as soon as the pod is moving this is faded out quickly, this sound was used to create a barren ambience as for the most part the races are held in big wide open spaces with the crowd only appearing on one part of the course. The second sound is a low rumble created by mixing a pitched down brown noise with most of the top end eq'ed out to simulate the "road noise" of the pod. The third and final element of the speed sound generator, is a wind roar, this is the same aerosol recording as the brake air resistance only pitched up to give it a more subtle breathy quality.

5. Sound Controls

The controls in the provided max patch allow the player to change the sounds around allot. Each sound has a separate simple filter and some of the sounds have their own effects such as phasing, reverb and delay. Using the view/reverb change button cycles through the presets.

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