**APOLLO**

**AUDIO DESIGN**

**OVERVIEW**

VERSION 4.0

**Revision Tracking**

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## ***Introduction***

This is a living document, updated over the course of the Pre-Production, which describes the Audio Department Aesthetic Vision and R&D Goals, broken down by sub-disciplines (Music, SFX, and Voice).

***Aesthetic Direction***

**Music Style Guide**

The dark, brooding, cinematic scores of *Batman Begins* and *The Dark Knight* are the closest existing fit to the aesthetic direction of Apollo's game design. The combination of gritty realism, the majestic scale of the environment, theatrical characters, and a self-sacrificing protagonist, intuitively pushes the music in this direction. These would be the first scores to inquire about licensing, and provide an aesthetic core to work outward from in our original content.

The score is mixed-media: a combination of live and electronic sources, with an extensive use of sampling and processing. Ensemble recording for Apollo's original content is best managed in sections (strings, brass, etc.) recorded separately and mixed with other source in a digital environment, as a mixed media score such as this is not bound by a traditional orchestra/concert hall format. For Apollo, ensemble recording, while not necessarily traditional in terms of number of instruments, recording spaces, etc., will be mandatory for at least brass and strings in order to be compatible with the film scores' production level. Music will be a vast and important part o*f combat,* adjusting dynamically and providing enhancements to the overall combat experience.

Aside from this, we expect that many percussion elements and textures will be sample based, and there will be a lot of creative use of sources from synthesis, non-traditional instrument soloists, sounds from field recordings, and more.

**SFX Style Guide**

The original source material will be largely derived from real-world recordings, rather than being synthesized, in order to ensure that even the highly-stylized moments remain grounded by an organic and realistic foundation. The foundation should be as realistic and detailed as possible, in order to help sell the believability of the implausible moments in the game.

Randomized palettes of sound will be designed as sweetener overlays for the base-layers, which will add a larger-than-life impact that has a richness and depth reaching beyond ordinary reality. The SFX in Apollo will enhance and exaggerate reality, so that the experience stands out when compared to the flatness of ordinary reality, but not to the degree that it prevents suspension of disbelief or distracts from gameplay.

**Combat**

* **Overview**
  + **Goal:** To create compelling, immersive audio without compromising the realism of engaged combat. Melee Combat will encompass a highly intensity and “punchy” feel to gun battles that are rewarding and satisfying to the player.
  + **Goal:** Leveraging aspects of combat from *Condemned*, which created an engaging and intimate quality of perspective.
    - Emphasis on sound design from a 3rd-person POV which maintains the intuitive, visceral qualities intrinsically found in 1st-person games.
    - Utilizing *the prowe*ss of Wwise to create combat that delivers a unique sonic experience with every encounter.
    - Gunfights that register to the listener as dangerous, and melee that is rewarding to the player.
  + **Goal:** Sounds that help “sell” the threat; as indicative of power as visualizations will be. Deep and powerful for Batman, less so for the majority of AI. The weaker the AI, the weaker his/her impact sounds can be. If certain attacks from AI are more dangerous, they should sound like it. Separating Batman from the AI when it comes to the sounds of their impacts. He has to sound much more dangerous, especially when fighting generic thugs. If Batman is wearing body armor and a rubber mask, I imagine the sounds of him getting hit being much less human, and more rubber/plastic/thud.
* **Melee**
* Currently the design called for more of a realism approach in the concept of melee impacts.
* R&D of other games that fit the realistic concept
* Record and foley various items that represent more realistic impacts
* Realistic impacts to body hits, face hits with blocks
* Prototype and video record impacts with other games to gain more perspective
  + Layer concept:
    - Base Layer - The sounds in this layer comprise the generalized, shared sound set that Batman and AI all employ. As such, they need to be designed as “all-purpose” sounds that can be used for any fist-hit or body-blow animation. This is the foundational 'reality' layer, so they shouldn't be too big.
      * The Base Layer combat sounds will be further sub-divided into location specific hits:
        + Face Hit - More fleshy and slappy sounding than Body Blows
        + Body Blows - Deeper impact thud with less flesh and slap than Face Hits
        + Various other contact areas, so that if the player connects solidly with the body or head, the thickest, most powerful sounds are heard. This will be layered with different content (slaps, cracks, breaks, thuds, etc.) depending on where the AI are physically struck.
    - Damage Layer - The sounds in this layer will be constructed into 2 intensity groups that will aurally represent the relative amount of damage being taken or given. They will be combined with the Base Layer in real-time.
      * Low Damage - None. Defaults to Base Layer.
      * Medium Damage - Adds a deeper thud and more bone crunching. Not particularly gory.
      * High Damage - These need to sound really painful, so they will contain more gory crunches and splatters.
    - Material Layer - The sounds in this layer will the most varied, since every equippable type and contextual-move-impact-surface-type will have to be accounted for. For example, if a metal shovel makes contact, we need a layer that contains the ping of the metal being struck.
    - Vocalization Layer - We need a wide assortment of grunts, groans, hisses, and exhalations for both attacker and attacked. Batman will have his own set, each Boss will have their own set, and each AI thug-type will have their own set.
    - Whoosh Layer - This is the most subtle layer and will be composed of arm swing and equippable whooshes. They're fairly subtle in the Batman films, with the hits and vocalizations being much more prominent. We will avoid “over-the-top” whooshes that are reminiscent of bad '70s kung-fu movies.
* **Finishing Moves**
* **There is a design for more stylized**

**Character Foley**

* **Overview**
  + **Goal:** Each Character will be unique and will have distinguishing audio to the way they present themselves. For overall Character audio, assets will be recorded with items in-house to provide that true authentic quality.
  + **Goal:** Carving out our own sound niche within the already established Batman universe. We saw where Batman gets his training in *Batman Begins*, and we will adhere to this 'ninja' style (iconic Batman) when thinking about unique original source recordings. Movement sounds during combat will target light and quick movement, with the cape, the suit, the gadgets, HUD (Batvision) and the impacts being featured.
  + **Goal:** Presenting a larger variety in AI vocalizations and movements, and touching on much greater detail with animation synchronization.
* **Batman**
  + Character Foley
    - Cape
      * With the Cape being such a iconic item itself, the sounds will be uniquely recorded.
      * The physic sounds and how we implement the assets will all depend on what the system allows us to do.
    - Footsteps
    - Movement
      * Suit Specials
  + Gadgets
* Grapple
  + fire
  + dry-fire
  + reeling in
  + impact sound
  + take off and arriving
* Smoke bomb
* quick throw-a quick throw straight to the ground
* targeting- aim to where you want the smoke bomb to be thrown
* Batarang
* quick throw-a side are throw straight in front of player
* targeting- aim to where you want the batarang to be thrown
* Vision modes
  + Gliding
* Unique sounds will be created for gliding once the mechanics get solidified
  + Cape opening
  + Diving
  + rolling left
  + rolling right
* **AI**
  + Character Foley
    - Unique Footsteps
    - Unique Movement
* **Combat Melee**
  + *Described in Melee overview*

**Stealth**

* **Overview**

Batman should be able to move in and out of danger, using stealth to engage enemy targets when and where the player chooses. Pure stealth players should be able to get deep into enemy territory without being discovered, and savvy combat players should be able to "cull the herd" via a few stealthy attacks before going in to finish off the rest in person. Games like *Tenchu*, *Splinter* *Cell*, and *Thief* are proven examples of the Stealth model we're considering.

* Batman is to be able to go in and out of stealth with supporting fx
* Music will changed dynamically for stealth in and out
* Ambient/Environmental sounds will duck in volume to support going into and out of Stealth. Other sounds may be effected adversely.
* Potential DSP effects to enhance the stealth state.
* Audible AI voice and their appearance in the world will compliment and help expose them to the player. (this will all depend on the design of the visions modes and upgrades)
* There is a design to help the player "focus" or " target" certain events while in the stealth state. This could be conversation scenarios or noises in the distant.

**Cinematics**

* **Overview**
  + **Goal:** All audio for Cinematics will be sound designed with more of a movie cinematic approach, characterized by high-fidelity and hyper-realism, thus selling and delivering the optimum aural experience to the player.
  + **Goal:** Music, dialogue and sound effects will all authentically reflect the Batman universe.
  + **Goal:** Transitions between pre-rendered cutscenes, in-game cinematics, and normal gameplay should be completely seamless and transparent to the player.

**Environments**

* **Overview**
  + **Goal:** Environmental audio will be immersive and reflect the look of the Batman universe. It is essential to capture that ambience which accomplishes the somewhat stylized "Batman Sound" while still complementing the other audio elements.
  + **Goal:** Creating unique, signature environments to ensure a captivating experience for the player. We plan to use RTPC to ensure fluid transitions from place to place and to diminish the "stagnation" that generally occurs sonically when occupying a single space for an extended period of time. We will also use the layering aspects of Wwise to compose rich mosaics of ambiance.
  + **Goal:** Ensure that useful contextual information is provided to the player via audio.
* **Ambience**
  + The ambience in Apollo is vital to fully immersing the player in the game's environments. They should be every bit as detailed as the environment art and should accurately reflect what's happening visually, as well as what might be happening just out of sight. There should also be special abstract sound elements, which can be added in runtime as additional layers to the foundational ambience, for purposes of increasing tension and suspense. (They should be a bit more subtle than the ambiences in FEAR and Condemned.)
  + Have the general ambience change dynamically based on weather, time-of day, how "clean" the city is. Since most of the game will be taking place in a city environment, we'll have to also be conscious of repetition and vary it based on the player's location (near water, in an alley, in the street, on the rooftops, etc.).
* **Destruction**
  + Explosions should be the biggest and loudest sounds in the game. They should also be designed to be interesting and evolving multi-stage events, each type with lots of variation.
  + These sounds should be built in the Wwise tool using randomized palettes of the following layers:
    - Base Layer - Each type of explosive object (e.g. a barrel) or projectile (e.g. a tank round) should have its own unique signature sound that informs the player as to the type and size of the explosive.
    - High-pitched 'Peeuuuwww' Layer - A shared palette of Small, Medium, and Large sweetener sounds that can be randomly selected and time-offset with the Base Layer. Small, Medium and Large selection should be based on the size of the explo.
    - Fireball Sweetener Layer - As with the 'Peeuuuwww' Layer, this layer will be a an assortment of fireball sounds of varying sizes that are randomly selected and time delayed with the Base Layer---again, broken down into Small, Medium, and Large sub-groups.
    - LFE Layer - This layer will hopefully be generated completely in the Wwise tool by manipulating the pitch offset and/or LFE Send amount of existing gun and explo assets. It will only be heard from the sub-woofer when playing the game over a 5.1 or 7.1 surround sound system. (Note that Wwise does not currently support this approach, as it will only route the .1 channel of an interleaved multichannel file to the LFE...).
    - Debris Layer - This layer is surface dependent. We'll probably limit these sounds to the following example matrix, i.e. Small, Medium, and Large:

|  |  |  |  |
| --- | --- | --- | --- |
| Dirt | \\_Dirt\_Sml | \\_Dirt\_Med | \\_Dirt\_Lrg |
| Stone | \\_Stone\_Sml | \\_Stone\_Med | \\_Stone\_Lrg |
| Metal | \\_Metal\_Sml | \\_Metal\_Med | \\_Metal\_Lrg |
| Wood | \\_Wood\_Sml | \\_Wood\_Med | \\_Wood\_Lrg |

* **Physics Sounds**
  + A vast assortment of all types of objects breaking, fracturing, bending, etc. Resulting debris from that destruction to realistically interact with the surfaces around it in terms of collisions and rolling/sliding.
  + The challenge is to keep it sounding realistic, but not annoying. Batman will be 3rdperson however, so at least the player will be able to see what he's stepping on or running into.
  + Due to memory constraints, sounds should be designed in our DAW's in such a way that they can be manipulated and layered in the Wwise tool to create even more variety, i.e. we need to keep the sound files fairly granular for maximum flexibility in implementation.

**Scripted Events**

* **Overview**
  + All audio for Scripted Events will be designed with a cinematic approach, using high quality and realism to sell and deliver the optimum experience.

**Pickups**

* **Overview**
  + All audio for Pickups will be designed with a cinematic approach, using high quality and realism to sell and deliver the optimum experience.

**Vehicles**

* **Overview**
  + All vehicles will go through the same system for generating assets. Tumbler and Batpod will have the same steps to obtaining assets but will be more design to its unique vehicle mechanics. Live field/foley recordings will be done for all the assets.
    - Engines
      * We'll need to record engine sounds for each vehicle. Since most, if not all, the vehicles in the game will probably be very exotic, e.g. the Tumbler, we won't be able to use commercial libraries. Also, we'll need to create seamless loops of steady-state recordings at the following RPMs:
        + Idle
        + Low
        + Medium
        + High --
    - In addition, we'll need to capture some short and fast revs for accel and decel. Ideally, the recordings would be made with the vehicle under load, utilizing a Dynamometer. If this is not possible, then we should find a quiet, outdoor location to record the vehicle at the required RPMs while parked in neutral. Two mics should be used, one for the tailpipe and one for the engine compartment. These will be mixed later prior to looping, with the tailpipe recording featured as the primary track, as the most interesting tonalities from an engine typically come from the exhaust.
    - Collisions
      * We'll also need to create unique collision sounds for each vehicle. Collisions will be broken down into 3 sub-groups that reflect the intensity of the impact:
        + Small
        + Medium
        + Large
    - Braking
      * If the vehicle is allowed to brake and come to rest, we'll need tire skid sounds on various surfaces, as well as possibly brake-pad squeals. These can probably be shared across all vehicles.
    - Landing
      * We'll want sounds for each vehicle bottoming out after getting airborne.
    - Weapons
      * There is a design for missiles and machine gun attached to the vehicle.
    - Tires
      * We'll need to design steady tire loops for each drivable surface. These can probably be shared for all vehicles.
      * We will need skidding, tread sounds and tire bouncing
      * Skidding and source for it
    - Pass-bys

We'll need to record pass-bys of vehicles at different speeds

* + - Suspension
      * Finally, we'll need to create suspension bounces and squeaks that can be driven from the physical simulation of the tires interacting with the terrain.

**UI**

* **Overview**
  + All audio for UI elements will be designed with a cinematic approach, using high quality and realism to sell and deliver the optimum experience.

***Voice Direction***

* **Overview**
* AI dialogue should have enough variations so dialogue is not repeated. This may need a priority system if there is a case of several same Ai types.
* Dialogue should match the character and present more of a serious tone and less comedic per scenarios.
  + We hope for the main original voice actors that were played from the movie to be recorded in order to maintain a valid character representation.
  + Casting should involve the Audio Dept. and be supervised by whomever is appointed by WBEI.
  + The Voice Director (if we have one), Principal Game Designer, and/or Audio Director should be present at each recording session to provide direction and the highest quality of acting.
  + Some voice recording may be off site, but onsite is preferred. Secondary voice acting will be cast locally and recording done in-house.
* Employing all methods and tools that allow designers to NAIL pacing to ensure believable, emotional exchanges between characters. This is a way to really set our game apart from the competition
* **Batman**
* **AI Characters**
  + Thug Characters
  + Boss Characters

***Research and Development (R&D)***

* Content creators
  + Sound designer training on Wwise tool: FEAR2 missions, prototyping various elements of the game in concept.
* Sound Designers learning Wwise and establishing workflows with Audio Engineer and Monolith tools
* Structured Audio Team discussions of aesthetic direction
* Foley/field recording of various source needed
* Listening to related Apollo-type films and games for highlights in audio
  + Gameplay Modes: Prototype/placeholder audio for the following modes as vertical slice before entering pre-production. This will not be integrated into runtime and will be delivered as Quicktime movies.
    - Stealth, Fear, Interrogation, and Combat
      * TBD, pending clearly stated goals from Design
* Audio Engineering
  + Audio Engineer starting re-work of legacy audio code and integrating Wwise runtime libs into game engine and relevant Monolith tools by vertical slice time frame.This will entail *only* core functionality, as defined by the Audio Director and Audio Engineer.

***Dependencies and Risks:***

**Dependencies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dependency Description** | **Person(s) accountable** | **Needed By Audio Dept by** | **Delivery Date by person(s) accountable** | **Risk if Not Delivered** |
| Defining the unique game-side systems (Fear, Stealth, Combat) | Strike Teams | Vertical Slice | March | Backend crunch, reducing iteration time and polish, thus affecting overall quality. Having no new designs for innovating audio. |
| Engineering time for the unique game-side systems | Apollo Engineering | Vertical Slice | March | Lower quality of audio functionality. Backend crunch with less iteration time. Music will suffer greatly. |
|  |  |  |  |  |

**Risks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk Description** | **Risk Level** | **Proposed Mitigation** | **Resolution Date (Milestone)** | **Mitigation Date (Milestone)** |
| Overall Foley and field recording completed for core Batman SFX | Low | Continue into production | End of vertical slice | End of Pre-production Phase |
| Vehicle Recording Session | low | Continue into production | End of vertical slice | End of Pre-production Phase |
| Other disciplines of development not hitting proposed features | med | Continue into production | Middle of production | End of Pre-production Phase |
|  |  |  |  |  |