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**APOLLO Pre-Production Milestone #5 Contents**

**December 3rd, 2009**

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# General

The following document will take you through all of the deliverables and give a status update on all the documentation.

We're currently doing schedule scrubs on all assets needed for the Vertical Slice and Pre-Production. The Scheduling that you'll see in this Milestone has some of the information but is not yet complete. As we update this over the coming weeks, we'll drop additional versions of it to the DAG for review.

# Product Data Sheet

[**Product Data Sheet**](Production/Apollo%20Product%20Data%20Sheet.docx) - The PDS has not been updated yet since our last Milestone drop. Marketing currently owns updating the PDS as part of the Core Team Dashboard process. Once they have finished their pass, we will update the document with further Pillar definition.

# Apollo Vertical Slice Update

1. [**Vertical Slice Player Experience Walkthrough**](Design/Apollo%20Vertical%20Slice%20Player%20Experience%20Walkthrough.docx) - This newly created document was created to help get all leads disciplines on the same page as to what Design was foreseeing the exact experience to be for the Vertical Slice.
2. [**Apollo Feature Set Scrub**](Design/Apollo%20Vertical%20Slice%20Feature%20Scrub.xlsx) **-** This spreadsheet was created to specifically detail out and scale back on the feature and goal set as needed.

**Additions:**

* **Apollo - Arkham Asylum Comparison Video**
  + This video will show both games and allow Senior Management to see the distinct direction we are visually taking with Apollo and how we differentiate ourselves globally from the Arkham Asylum games
* **Vehicle Gameplay Level - 3rd Pass** 
  + Although we had already planned on taking this level to its 2nd pass, we're going take our automotive level to as high a fidelity state as we can to help show off our visual direction while also helping further define our vehicle gameplay.
* **Bone-Breaker Move**
  + We're going to figure out how we can pull off this iconic move from our video in the Vertical Slice.

**Removals:**

* **Boss Fight - Stage 1**
  + We are removing this from the Vertical Slice deliverables list. Since we are putting a stronger effort into the Vehicle level and making sure the 'golden path' of our Vertical Slice hub is strong as possible, we'll not be creating this until early in Production.

# Production Update

## Schedule

1. [**Apollo Master Schedule**](Production/Apollo%20Master%20Schedule.mpp) - This Project file is currently a work-in-progress based upon the extensive scheduling meetings that we have held over the past week. The blue text in the Project file are areas that are usually questions or notes to myself. If you don't have Project installed, there are multiple free viewers to be found online such as [ProjectSimple](http://download.cnet.com/ProjectSimple/3000-2076_4-10909620.html?tag=mncol;lst).
2. [**Apollo Milestone Deliverables Schedule**](Production/Apollo%20Milestone%20Schedule%20PPM5.docx) - This document contains all the milestone deliverables through Pre-Production for the Vertical Slice. It is currently being updated to mesh with the Apollo Master Schedule.
3. [**Apollo Resource Allocation & Assessment**](Production/Resource%20Allocation%20&%20Assessment_PPM5.xlsx) - We have acquired several World Artists to work on the Vehicle Level for the vertical slice as well as a number of other positions are now filled. Items in green are recent acquires and items in red are people who have left or are leaving.

## Risk Assessment

[**Risk Assessment document**](Production/Apollo%20PPM5%20Risk%20Assessment.docx) **-** The **Risk Assessment Document** has been updated. Specific risks with recent dates have been updated with their risk and/or current status changed to reflect their current situation.

## QA Test Plan

[**Apollo Test Plan (DRAFT)**](Production/Apollo%20Test%20Plan%20V1.0.docx) - We have a first-pass Test Plan that is currently going through a review pass by the Apollo Core Leads.

# Design Update

[**Apollo Game Design document**](Design/Apollo%20Game%20Design%20Document.docx) - This is a copy of the GDD that has been prepared for the Dashboard Core Group.

[**Story Update V1.0**](Design/Apollo%20Story%20V1.0.docx) - This document gives an overview of the current story status. This is currently on hold until we get permission to resume discussions with the Nolan crew.

[**Apollo Player Interface Playtest Report**](Production/Apollo%20Interface%20Playtest%20Summary.docx) - We ran 4 individuals with no experience through some basic player movement, weapon swapping and evidence interactions. This is the report from Ming.

[**Apollo Social Plan V1.1**](Production/Apollo%20Social%20Plan%20v1.1.docx) - This is the latest iteration of the Social Plan which lays out our current position and what our next steps are.

## UI Design

We're working to make sure that we have completely functional UI for our end-of-pre-production goals. Here are the latest UI documentation that our UI Designer has created:

[**Apollo Navigational HUD Framework**](Design/ApolloNavigationalHUDFramework.docx)

[**Apollo UI Detective Mode Style Guide**](Design/ApolloUIDetectiveModeStyleGuide.docx)

[**Apollo UI Master Style Guide**](Design/BatComputer_BaseFramework.docx)

[**Bat Computer\_Base Framework**](Design/BatComputer_BaseFramework.docx)

[**Bat GPS Base Framework**](Design/BatGPSBaseFramework.docx)

[**Detective Mode**](Design/DetectiveMode.docx)

[**Gadget Select Contextual**](Design/GadgetSelectContextual.docx)

[**Grapple UX**](Design/Grapple%20UX.docx)

[**Quest Intro Complete-Fail**](Design/QuestIntroCompleteFail.docx)

**Apollo Design:** [**https://confluence/display/batman/Design**](https://confluence/display/batman/Design)

**Here are the Confluence Design changes since PPM4:**

**New additions:**

**Playtesting Feedback section:**

* Player Movement:  <https://confluence/display/batman/Focus+-+Player+Movement+-+Playtesting+Notes>
* Feedback summaries:  <https://confluence/display/batman/Feedback+Summaries+from+WB+Playtest>

**Story info:**

* Game Story Summary:  <https://confluence/display/batman/Game+Story+Summary>
* Character Summary:  <https://confluence/display/batman/Character+Summaries>

**UI Documentation:**

##### Menus

* [Main Menu Flow](https://confluence/display/batman/Main+Menu+Flow)
* [Pause Menu Flow](https://confluence/display/batman/Pause+Menu+Flow)

##### UX Docs

* [Bat Computer Framework](https://confluence/display/batman/Bat+Computer+Framework)
* [Detective Mode](https://confluence/display/batman/Detective+Mode+UX)
* [Gadget Select](https://confluence/display/batman/Gadget+Select)
* [Grapple](https://confluence/display/batman/Grapple+UI)
* [Navigation](https://confluence/display/batman/Navigation+UX)
* [Quest HUD Display](https://confluence/display/batman/Quest+HUD+Display)
* [Style Guide](https://confluence/display/batman/UI+Style+Guide)

**Vehicles:**

* Driving Environment Asset List: <https://confluence/display/batman/Driving+Environment+Asset+List>
* Gotham City Map:  <https://confluence/display/batman/Gotham+City+Map>
* Vehicle Missions:  <https://confluence/display/batman/Vehicle+Missions>
* Vehicle Standards:  <https://confluence/display/batman/Vehicle+Standards>
* Vehicle ‘Tweaking’ Guide: <https://confluence/display/batman/Vehicle+Tweaking+Guide>

**Vertical Slice Layout:**

* Added Player Experience Walkthrough: <https://confluence/display/batman/Vertical+Slice+Player+Experience>

**Weather and Atmosphere:**  <https://confluence/display/batman/Weather+and+Atmosphere>

**Updates:**

AI Types and Behaviors:

* Master List of AI:  <https://confluence/display/batman/Master+List+of+AI+Types>
* Fear: <https://confluence/display/batman/Fear>
* Senses (Details):  <https://confluence/display/batman/Senses+%28Details%29>

**Ambient Crime:**  <https://confluence/display/batman/Ambient+Crime>

**Building Generator Tool:**  <https://confluence/display/batman/Building+Generator+and+Building+LOD%27s>

**Campaign page:**  <https://confluence/display/batman/Campaign>

**Dungeon List:**  <https://confluence/display/batman/Gotham+Dungeons>

**Gadgets:**

* Vision Modes – Night Vision Mode <https://confluence/display/batman/Vision+Modes>
* Batarang - <https://confluence/display/batman/Batarang>

**Game Camera:**  <https://confluence/display/batman/Game+Camera>

**In-Game UI – HUD:**  <https://confluence/display/batman/In-Game+UI+-+HUD>

**Player Movement:**

* To-Do list: <https://confluence/display/batman/Player+Movement+-+To-Do+Notes>
* Stealth Movement (Details):  <https://confluence/display/batman/Stealth+Movement+%28Details%29>
* Walking & Running (Details):  <https://confluence/pages/viewpage.action?pageId=18255507>

**Scripting:**  Tutorial Pages - <https://confluence/display/batman/Scripting+Tutorial>

**Stealth:**

* Stealth page:  <https://confluence/display/batman/Stealth>
* Stealth Requirements page:  <https://confluence/display/batman/Stealth+Requirements>
* Stealth Support (Lighting): <https://confluence/display/batman/Stealth+Support+%28Lighting%29>

**Talent Tree:**  <https://confluence/display/batman/Talent+Tree>

**Vehicles: (main page)**  <https://confluence/display/batman/Vehicles>

# Art Update

[**Apollo Art Plan V3.0**](Art/Apollo%20Art%20Plan%20V3.docx) **-** This is the latest version of the Art Plan.

[**Apollo Art Style Guide**](Art/Apollo%20ArtStyle_v3.docx) - This is the latest Art Styel Guide that has updated imagery.

[**Apollo Art Schedule**](Art/Apollo%20Art%20Schedule.xlsx) - This is the overall Art Schedule that has been fleshed out over the course of pre-production. We're now working

## Character Art: New Characters

## Goals

* Showcase progress on new character generation and iteration.
* Three new character models
* Batman with the cape in-game
* LOD (level of detail) progress on the base thug

## How to view this

* **Run “Character” Showcase Test World: “Character\_Room”**
* **To see the new characters:**
  1. Navigate around the showroom to the following new models:
     1. Civilian Cop
     2. Melee Riot Cop
     3. Hobo
* **To see the LODs on the base thug:**
  1. Press ‘Start’ > ‘Debug Menu’ > ‘Cheats’ > ‘Clip’
  2. Align the camera to be looking at the thug
  3. Slowly move the camera backward so you are moving away from the model
     1. Watching the model closely, you can see it’s Level of Detail pop to lower states the further you get out
* **To see Batman with the cape in-game:**
  1. Due to havoc issues, we were forced to disable the cape in our current build. You will only be able to see this working in the delivered video.

## Deliverables

* **Test World: “Character\_Room”**
* Videos of new models
  + [Characters\_BatmanCape.mov](Videos/Characters_BatmanCape.mov)
  + [Characters\_CivilianCop.mov](Videos/Characters_CivilianCop.mov)
  + [Characters\_Hobo.mov](Videos/Characters_Hobo.mov)
  + [Characters\_RiotCop.mov](Videos/Characters_RiotCop.mov)

## Character Anim: Lip-Sync

***Goals***

* The video is to show that the tool was completed and is working as planned.

***Deliverables***

* **Lip-Sync Video**
  + [Lip-Sync\_Tool.mov](Videos/Lip-Sync_Tool.mov)

# Engineering Update

[**Apollo Technical Design**](Engineering/Apollo%20Technical%20Design%20Doc.doc) **- The Apollo Technical Design Document** has been significantly updated to provide more detail on a few technical requirements for Apollo. More requirements will be added to the Technical Design as more research is conducted into those systems.

## Engineering Milestone Deliverables

### AI Engineering

**Goal:** Fully integrate the 3rd party navmesh and pathing solution, PathEngine into our runtime and tools pipeline. We did not meet this deliverable for the previous milestone so needed to achieve this deliverable for this milestone.

**Result:** We have fully integrated PathEngine into our tools and runtime. The tools pack out the navmesh for use by the AI and the AI are using the information generated for their runtime navigation.

**Issue:** In the process of the integration we have uncovered additional work to improve the integration. We have an outstanding support request with PathEngine for addressing issues with their generated NavMesh. We have also discovered the need for caching out the generated data on the build machines for others to use during daily development rather than having everyone generate the NavMesh with their local builds.

**Tools Engineering**

**Goal:** Passive backup for engineering changes. Allow engineering changes to be easily backed up to a location other than their local harddrive to prevent loss of work.

**Result:** Complete. Modifications to our custom Perforce submit dialog were done to allow engineers to periodically backup their work to a network server and restore those changes if needed.

**Goal:** Rendering optimizations for WorldEdit. With the larger size of our world from past projects as well as more dense geometry from large and very detailed buildings the performance of the render used in WorldEdit has become an issue. We need to optimize it.

**Result:** Work to optimize the render within WorldEdit is complete. In some situations the FPS of the render went from 5 to 20. This will be a huge help to anyone working with the larger and more dense areas of the city. We consider this as optimized as we need for now but will continue to evaluate the need for more optimization as the city gets more populated.

**Goal:** Transparency for WorldEdit. Placing objects such as decals and debris with transparency has been an issue in the past as WorldEdit would render the alpha as black. Allowing the WorldEdit render to draw these objects as seen in game will greatly help with the placement of these objects, increasing the efficiency of WorldArtists populating the city.

**Result:** This work is complete and has help WorldArtist in populating the vertical slice level.

**Runtime Engineering**

**Goal:** Generic Havok Cloth fully integrated. The previous integration of Havok Cloth focused primarily on the cape. We would like the ability to use Havok Cloth in other forms besides the cape.

**Result:** This work is complete. We are capable of having multiple cloth pieces specified on characters rather than just the cape on Batman. Although, not showable within the game due to licensing issues with Havok we have captured videos to show multiple cloth pieces working correctly.

**Video:** [**Cloth\_Multiple.mov**](Videos/Cloth_Multiple.mov)**.** Yes, the video is lame but it does show multiple cloth interactions.

# Audio Update

The [**Apollo Audio Design**](Audio/Docs/Apollo%20Audio%20Design.docx) document has been updated with some minor edits.

The [**Apollo Music Design**](file:///C:\Users\daveh\AppData\Local\Temp\p4win\Audio\Audio_Docs\Apollo%20Music%20Design.docx) document has had sections removed that are no longer relevant.

## Audio Milestone Deliverables

**AI FEAR AWARENESS**

[**Ms5\_Audio\_AIBodyCallout.mov**](Audio/Videos/Ms5_Audio_AIBodyCallout.mov)

This video shows the AI noticing something, running over to check it out, and then calling out when finding a body.  This was to simply demonstrate the way we intend the body callout dialogue to work.

I’ve also written two word docs about the Wwise structure for movements and behavioral voice:

[**AI\_Behaviroal\_Voice\_Structure.docx**](Audio/Docs/AI_Behavioral_Voice_Structure.docx)

[**Movement\_Sharing\_Structiure.docx**](Audio/Docs/Movement_Sharing_Structure.docx)

**COMBAT**

[**Ms5\_Audio\_Music\_CombatStates\_V2.mov**](Audio/Videos/Ms5_Audio_Music_CombatStates_V2.mov)

This video demonstrates the following music features in game:

* Base arrangement/Stealth arrangement cross fading (0:09)
* Stealth Attack music stinger (0:18)
* AI Awareness-based state changes (0:30): Music seamlessly transitions to an "Aware" state arrangement to match level of intensity.
* Combat state change (1:03): Music seamlessly transitions to a "Combat" state arrangement when player engages AI in combat.
* Combat stingers (1:08): triggered here by the "heavy attack" [Y button] and scheduled to play on the next beat to synchronize with background music.
* Transition back to "Aware" state from Combat when player flees area (1:32).
* Transition to Stealth (2:08) after player remains hidden.

Currently we are planning to change combat states based on the AI’s awareness of Batman.   In the video there are 3 levels of intensity and an accompanying musical theme to support them.  The Base levels occurs when most of the AI are unaware of Batman.  The Aware level occurs when most of the AI are aware of batman. The Combat level occurs when batman is engaged in combat with the AI.  These music states can be tied to the normal cool down of the AI so as the AI’s awareness levels drop, the music can reflect these changes.

**STEALTH**

[**Ms5\_Audio\_AroundCorner\_AI.mov**](Audio/Videos/Ms5_Audio_AroundCorner_AI.mov)

This shows the sounds that are attached to the AI’s reaction to Batman’s around the corner attack.

[**Ms5\_Audio\_AroundCorner\_Bat.mov**](Audio/Videos/Ms5_Audio_AroundCorner_Bat.mov)

This shows the sounds that are attached to Batman’s around the corner attack animation.

[**Ms5\_Audio\_Music\_ShadowDive.mov**](Audio/Videos/Ms5_Audio_Music_ShadowDive.mov)

Shadow Dive Stinger shown in game. Stinger is designed to adapt harmonically to the background music. Video shows the player performing a dive at 0:09, 0:15, 0:20, and 0:24. The same event call picks variations to the stinger that are most compatible with the background music.

**GADGETS**

[**milestone5\_batarangImpacts\_inGame:**](Audio/Videos/milestone5_batarangImpacts_inGame.mov) this video shows the batarang impacts occurring in-game.  Note how the impacts are 3D positional and play from the point of impact.  Also these impacts decrease in volume over distance...so if the impact is too far away the player will not hear it.

[**milestone5\_detectiveVision\_inGame**](Audio/Videos/milestone5_tumbler_inGame.mov)**:**  this video displays some audio work done for the Vision mode: Detective.  There is an intro sound, a looping sound (to indicate that you are in detective mode), and an outro sound.  In addition to this, there is a scanning sound to indicate you are scanning a piece of evidence.  There will be more sounds for the UI coming online later, this is just a taste to prove out our systems.

**VEHICLES**

[**milestone5\_tumbler\_inGame**](Audio/Videos/milestone5_tumbler_inGame.mov)**:**  this video shows the tumbler as it sounds currently in-game.  Previsouly we installed  an engine which shifts gears being driven by the RPM parameter passed from the game engine, brake, boost, and skid sounds.  New features in this milestone include:  a turbine whine & wind insinsity both being driven off the "vehicle\_speed" parameter.

**AUDIO ENG/TOOLS**

* Continued converting game systems to use the new audio engine, including the weapon system.
* Continued to expand on the functionality of WWise by adding in DSPs and SoundSeed products for evaluation.

# Milestone Deliverables

## Player Movement: Walk/Run/Turn Iteration

**Goal:**  Create stylized walk and run animations and iterate on basic planar motion until the responsiveness of the controls is at a shippable level. Maintain a high visual quality bar by turning the player character using only complex blends between the authored animations (i.e. not resorting to artificial sliding to achieve the necessary responsiveness).

We completed stylized walk and run animations, but only the walking/turning animations have been implemented in the “Movement\_Planar” test world. There are no transitions currently to and from idle, so the focus should be on the walking and turning motion. We are working through some issues with the complex animation for the run, and should have that hooked up very soon. Game engineering worked through many ideas for improving responsiveness with these new animations, and we have made huge improvements to the accuracy and responsiveness of the basic walking movement, but we are not comfortable calling this shippable quality yet. The walk is fairly slow, but the slowness is exaggerated by an issue that is causing a slight pause between each step that breaks the feeling of momentum and causes the movement to feel a bit mechanical. There are also some edge cases that emerge when making drastic changes in direction towards the end of a step cycle which can move the player slightly off their desired path for a step or two. We’ll be implementing solutions for these issues after the run animations are implemented (at least to the same level as walk). Even with these issues though, by comparing this walking to the old walking (default movement in the other test worlds), it is clear what an improvement this is both in visual polish and responsiveness.

**How to view:**

* **Run Player Movement Test World: “Movement\_Planar”**
* There are red lines on the ground that can be used to experiment with responsiveness and feel.
* Holding down the A Button will cause the camera to pull back and track the player. The default camera will be closer up and with no automated tracking.
* NOTE: The new planar movement experiments are only available in the “Movement\_Planar” test world. The basic player movement in the other test worlds will feel largely the same as last milestone. The parameterization for the glide animations were affected by some of the planar movement changes, so glide may look a bit strange.

**Deliverables:**

* **Player Movement Test World: “Movement\_Planar”**
* Video of planar movement:
  + [**PlanarMovement.mov**](Videos/PlanarMovement.mov)

## Player Movement: Shadow Dive Iteration

**Goal:**  Improve the reliability and usability of the Shadow Dive feature.

**How to view:**

* **Run the StealthTest World: “Stealth\_ Playground”**
* The key improvements that were made to Shadow dive this milestone were:
  + Added the ability to dive into shadows without having to go into a wall hug, and supported that addition with a first pass prioritization/targeting system to determine which shadow or wall to dive to given the player’s directional input when the shadow dive button is pressed.
    - Pressing RB while standing still will look for the nearest shadow in range in a radius around the player, and dive into it (sort of “quick escape” behavior). If there is nothing in range, it will do nothing.
    - Pressing RB while moving will first check to see if there is a wall and/or shadow in range in the direction of the player’s stick input. If there is a wall (shadow or not), it will dive into a wall hug on that wall. If there is a shadow (and no wall), it will dive into that shadow. If there is neither a shadow nor wall in range in that direction, it will search for the nearest shadow in range within a cone in front of the player and dive into it. If there is nothing in range, it will do nothing.
  + Fixed several bugs that resulted in unpredictable or undesirable behavior when diving into wall hug.
  + Added corner peek state, where if the player is pressed up against the edge while wall hugging, an animation will engage telling the player they are at the edge of the wall. Eventually, we will also engage a special camera state at this point that offsets to facilitate peeking around corners (not currently implemented).
  + Added “Corner Rush” ability. If the player is in the corner peek state, they can press A Button to quickly disengage from the wall and round the corner in a single motion. This is useful for rushing up on enemies during stealth play.
  + Improved the usability of the controls through redundant buttons to pull the player off of a wall hug (currently on A Button and Right Bumper).
  + Disabled the ability to wall hug to a visible surface when AI can see the player.
  + Added FX to the player when diving into a shadow.

**Deliverables:**

* **Stealth Test World: “Stealth\_Playground”**
* Video of Shadow Dive movement:
  + [**ShadowDive.mov**](Videos/ShadowDive.mov)

## Camera Evaluation

**Goal:**  Using analysis of competitive titles and current camera design and implementation, document what functionality we believe must be added to our existing camera system to achieve a competitive 3rd person action game camera. Then use those findings to estimate the engineering workload required to achieve that functionality.

**Deliverables:**

* Links to camera docs
  + [**Competitive Analysis**](https://confluence/display/batman/Cameras+-+Competitive+Analysis)
  + [**Camera Evaluation Doc**](Engineering/Camera%20system%20eval.docx)

## Combat: Authoring Basic Attacks using the Combat Tool

**Goals:**  Read in the data authored in the Combat Tool (button input and animation) and use it to play back the attack.

This goal was met, and we managed to push a bit farther and implement support for authoring branching chains (including blend times between animations in the chain) through the Combat Tool as well.

**How to view this:**

* **Run Test World: “Movement\_Planar”**
* The included screenshot displays the combat tree that is currently running in the game.
  + The first branch is between the first button input: X button plays a light attack, and Y button plays a heavy attack.
  + Multiple X button presses in a row will result in a five hit chain.
  + Pressing Y button after two X button attacks will branch to a different attack.
* NOTE: There is a known bug in the milestone build that AI are not affected by player attacks. A fix for this has been checked in, but did not make it into milestone build.

**Deliverables:**

* **Test World: “Movement\_Planar”**
* Video of Combat Tree attacks:
  + CombatTreeAttacks.mov
    1. The video shows the 5 X Button attack chain first, then 2 single X Button attacks, then the X, X, Y chain, then simple Y Button attack.
* Screenshot of CombatTree in Tool:
  + [**CombatTree1.jpg**](Screenshots/CombatTree1.jpg)

## Vehicles: Design Layout 1 and 2 iteration, Tumbler 2nd Pass

**Goals**

* Based on playtest feedback, iterate on the Vehicle sequence layouts
* Based on playtest feedback, iterate on the Vehicle handling and feel
* Enable vehicles to interact naturally with other physics objects in the world

Due to the changing circumstances this milestone in the importance of the visual polish level for the Vertical Slice vehicle sequence, we decided to focus our efforts on redesigning a layout that would be much more feasible to complete the environment art for in time. As a result, our deliverable for the layout has changed to showing a redesigned, smaller sequence that will be more of a polished demo experience when complete. The engineering work on vehicle handling and physics continued unchanged, but design time was refocused away from iterating on the existing layouts.

## How to view this

* **Run Vehicle Sequence Test World: “H0driving2”**
* Updates to the sequence:
  + The sequence is now about 45 seconds to a minute (rather than 2+ minutes), and will run through a pretty fast paced series of scripted events (some of which are represented by temp red sphere FX) while chasing an enemy vehicle. The sequence will now climax with a short cinematic sequence of the Tumbler going off a ramp, crashing into the helicopter (sending them both into the building), and the Pod breaking out the other side of the building and quickly dispatching the enemy vehicle.
* Updates to the vehicle:
  + The tumbler can now interact with physics objects in the world (crashing through barrels, signs, etc). We were previously triggering and keyframing these obstacles to look like they were getting hit.
  + The handling is now more arcade style (rather than purely realistic physical simulation), allowing more forgiving control. The player can now power slide, air steer, etc.
  + A major portion of the engineering work this milestone was dedicated to creating elaborate debug views to assist in faster future iteration.
    - The delivered screen shot displays the in game debug views that show velocity, acceleration, boost, steering, wheel thickness, tire/ground contact, etc.

Deliverables

* **Test World: “H0driving2”**
* Screenshot:
  + [**VehicleDebug.bmp**](Screenshots/VehicleDebug.bmp)

## Vertical Slice Hub: Design Layout 2nd Pass

**Goals:** Add gameplay opportunities to the quest spaces and hook up any new features that come online. Finalize the golden path for the Vertical Slice demo experience.

In an attempt to focus more on bringing the demo spaces up to a higher visual polish bar, the walkthrough was redesigned to use less of the Hub’s total square footage. The mall atrium quest was cut and replaced with a simpler quest that reuses more existing assets. The main rooftop crime scene quest was wired up with more quest system features, detective vision features, and the space was fleshed out to create more stealth gameplay and interesting navigation opportunities. The ambient crime was also scripted in the hot pocket space.

## How to view this

* **Run Vertical Slice Hub Test World: “H0\_hub”**
* The ambient crime and detective vision are described in detail in separate deliverables.
* The quest system can be seen by selecting the “Rooftop Crime Scene” quest from the Back Button menu, navigating there and activating it. If the player attempts to leave the area, they will now be prompted that the quest will be cancelled if they continue. Other quest system improvements are called out along with the detective vision deliverable.
* The Vertical Slice Walkthrough pages in confluence have been updated with the new plan.

Deliverables

* **Test World: “H0\_hub”**
* [**Vertical Slice Player Experience page**](https://confluence/display/batman/Vertical+Slice+Player+Experience)

## Dungeon 2: Design Layout 1st Pass

**Goal:** Create the Battleship Penguin Dungeon in grey-scale representational spaces.

Deliverables

* **Test World: “H4\_penguindungeon”**

## Hub2: Design Layout 1st Pass

**Goal:** Create a grey-scale spacial representational space for the Narrows.

Deliverables

* **Test World: “H3hub”**

## Scripting

* ***Goal***
  1. To roll out the new scripting system to the team fully replacing the old messaging system.

**New Scripting System Overview**

* **Deliverable:**
* [**Scripting Tutorial.ppt**](Videos/Scripting%20Tutorial.pptx)

**Scripting System Tutorials/Training Materials** - <https://confluence/display/batman/Scripting+Tutorial>

**Function Deprecation** – Unlike the old messaging system, the scripting system will not allow a level to pack if there are errors in the scripts. Due to this, we needed a way to allow  functions to be updated in code, yet still allow the old functions to be valid and pack in the levels. To accommodate this, we added the ability to flag options as deprecated for these functions yet still allow them to be used. When designers pack their levels from that point on, they will receive warnings that this function is using a deprecated option allowing them to change it.  Once these have been changed, engineering can then remove the old options without the fear of  breaking the build.

* **Deliverable:**
  + [**Screenshot**](Production/Deprecation.JPG)

**Script Sequencer 1st Pass** – The old message system used an object called the CommandObject to allow designers to run multiple commands in sequence much like a timeline. This object has been replaced with the first pass of the new ScriptSequencer object. Currently, this object serves the same purpose as the CommandObject, but only accepts scripting, not messaging. The new object was also built with the future in mind. Once the Track Control code is finished by CodeJock, this will be plugged in to give the new ScriptSequencer object a more user friendly interface and allow for greater control of scripting timelines.

## Gadgets: Batarang / Smokebomb Iteration

***Goals***

* Demonstrate iteration on aiming functionality for both the Batarang and Smokebomb gadgets.
* For the Batarang, we now have ‘magnetic targeting’ which locks the aiming reticule onto an AI for easier targeting.
* For the Smokebomb, there is now a predictive arc (currently shown as a debug line) that indicates the trajectory path that the bomb will take when thrown.

## How to view this

* **Run any world with AI: e.g. Stealth\_Playground**
* ***To see Batarang aiming:***
  + To select batarangs, press ‘Left’ on the D-Pad. This will highlight that particular type of gadget and it will be ready for use.
  + Position yourself in an area where there is a visible AI
  + Press-and-hold ‘Left Trigger’
  + Using the right analog stick, move your aiming reticule near an AI
    - When your reticule gets close enough to an AI, it will change to an evident yellow targeting circle. This indicates that you are ‘locked on’ to that enemy, and when thrown, the Batarang will go directly go that target.
  + Release ‘Left Trigger’ to throw the Batarang.
* ***To see Smokebomb aiming:***
  + To select Smokebombs, press ‘Right’ on the D-Pad
  + To use precision-aim, press-and-hold ‘Left Trigger’
    - A debug line will display, indicating the trajectory-path that the bomb will take when you throw it.
    - Move your reticule around the environment and note how it predicts bouncing off of surfaces, etc.
  + Release ‘Left Trigger’ when you want to throw the grenade; note how it will follow the indicated trajectory.
* ***Note on aiming animation:***
  + In this build, to facilitate ease of aiming and testing these features, Batman does not play any actual animations when aiming in any direction; his entire model will be shifted. This is temporary.

***Deliverables***

* **Test World: “Stealth\_Playground”** *(note that gadgets can be used in any level)*
* Video of Gadgets in action
  + [**Gadgets\_BatarangTarget.mov**](Videos/Gadgets_BatarangTarget.mov) – Showcases Batman utilizing magnetic-aim assist on an AI with the Batarang
  + [**Gadgets\_BombTarget01.mov**](Videos/Gadgets_BombTarget01.mov) – Showcases Batman utilizing the predictive aiming path for the Smokebomb.
  + [**Gadgets\_BombTarget02.mov**](Videos/Gadgets_BombTarget02.mov) – Another example of using the predictive aiming path

## Gadgets: Detective Vision 1st Pass

***Goals***

* Demonstrate first pass functionality of Detective Vision
* Ability to toggle on/off
* Highlight evidence
* Zoom in and scan evidence
* Get quest updates

## How to view this

* **Run Vertical Slice Hub Test World: “H0\_Hub”**
* ***To quickly warp to a quest with evidence:***
  + Press ‘Start’ > ‘Debug Menu’ > ‘Cheats’
  + Scroll down to ‘Quest Teleport’ and make sure ‘VSQuest1’ is selected
  + Press ‘A’ and then press ‘B’ three times to exit out of the menus
  + You will be warped to the ‘Rooftop Crime Scene’ vantage point
    - Press ‘Right Bumper’ to initiate the quest
    - Glide down to the rooftop
* ***To see Detective Vision features:***
  + Walk near one of the ‘evidence’ prefabs on the ground (depicted as a manila folder)
    - Note that you are prompted with an ‘Evidence in Range…’ notification in the upper-right corner
  + **To activate Detective Vision**, press ‘Up’ on the D-Pad
    - A screen overlay effect will display, as well as new UI to indicate that you are in a vision mode
    - Also note that if there are hostile AI nearby, a pulsing exclamation point will display in the lower-right corner of the screen
    - Available evidence will now be highlighted with red brackets around them
  + **To go into ‘First Person’ mode**, press ‘Down’ on the D-Pad while Detective Vision is active
    - You will now be in a state to scan evidence if it is targeted
    - Move the camera so that the evidence is in the center of the screen
      * When successful, the red brackets will turn blue
      * You will also get a prompt in the lower-right corner of the screen telling you to press ‘B’ to scan
    - To scan the evidence, press-and-hold ‘B’
      * Note that you will have an animating prompt in the upper-right corner telling you that you are scanning
        + The brackets around the evidence will also turn yellow during scanning
      * If you release ‘B’ before it completes, you will be notified that the scan was a failure
      * If you continue to hold ‘B’ until it is scanned, then the evidence will disappear and you will get a quest update indicating that you have successfully collected it
    - To exit first-person mode, press ‘Down’ on the D-Pad; you will now be able to walk around and search for more evidence
  + **To see the first iteration of the ‘Auto-Scan’ talent:**
    - Press ‘Back’ > ‘Right Bumper’ to access the Talent Tree
      * Highlight the top, middle icon (currently placeholder icon/text, it is called ‘Rebreather’)
      * Press ‘A’, back out of the menu, and save the talent
    - You can now scan multiple pieces of evidence at once, without going into first-person camera
      * Walk into an area with two pieces of evidence near each other (make sure Detective Vision is active)
        + The large room at the quest area has three evidence pieces, so it should be easy to get at least two in range in this area
      * Note that multiple pieces will change from red brackets to blue, indicating that they can be scanned
      * Press-and-hold the ‘B’ button
        + Both pieces will be scanned and collected at the same time. The quest update UI will reflect this.
  + **Notes on Detective Vision:**
    - When all of the evidence of this quest is collected, you will get a UI notification prompting that you have successfully completed the quest
    - Many actions will automatically kick you out of Detective Vision, such as attacking or grappling

**Deliverables**

* **Test World: “H0\_Hub”**
* Video of Detective Vision in action
  + [**DetectiveVision.mov**](Videos/DetectiveVision.mov) – Showcases going into detective mode and scanning a piece of evidence. Then shows scanning multiple pieces of evidence with the ‘Auto-Scan’ talent.

## Stealth: Corner Grab

## Goals

* Showcase the 1st pass implementation of the second stealth attack: corner grab

## How to view this

* **Run Stealth System Test World: “Stealth\_Action”**
* Go into a wall hug on the surface in front of you (press forward and hit ‘Right Bumper’)
* Move to the far right portion of the wall and keep pushing right, so Batman is peeking around the corner
* Wait for the patrolling AI to get close to you
* Press the ‘B’ button
  1. Batman will grab the AI, hit him against the wall, and knock him out immediately.

## Deliverables

* **Test World: “Stealth\_Action”**
* Video the Corner Grab in action
  + [**Stealth\_CornerGrab+BodyCallout.mov**](Videos/Stealth_CornerGrab+BodyCallout.mov)

## AI Fear & Awareness: Behavior Iteration

## Goals

* Showcase the implementation of two additional AI behaviors:
* Player Callout
* Body Callout

## How to view this

* **Run Stealth System Test World: “Stealth\_Action”**
* ***To see Body Callout:***
  1. Take out an AI without another AI noticing, but in a situation where the second AI will discover the body of the first. E.g.:
     1. Go into a wall hug on the surface in front of you (press forward and hit ‘Right Bumper’)
     2. Move to the far right portion of the wall and keep pushing right, so Batman is peeking around the corner
     3. Wait for the patrolling AI to get close to you
        1. Make sure the AI patrolling in the cross path is not currently visible. This will happen when the AI nearest you turns around and is getting ready to patrol back where he started from.
     4. Press the ‘B’ button to initiate a grab
     5. Go back into the shadow and hide.
  2. Wait for the second AI to patrol back out and come within line-of-sight of the body. Once he sees it, he will react, become more alert, and investigate the body. Once he realizes what has happened, he will begin searching for Batman.
* ***To see Player Callout:***
  1. Reveal yourself to an AI in a situation where there is another AI nearby, but will not be able to see you.
     1. Once the first AI recognizes you and goes into a combat stance, he will send out a stimulus to other AI nearby, which will cause them to jump to high alertness and seek you out as well.
* ***Notes:***
  1. Currently there are no voiceover callouts associated with these behaviors. This will be forthcoming in future milestone builds.

## Deliverables

* **Test World: “Stealth\_Action”**
* Video the Body Callout in action
  + [**Stealth\_CornerGrab+BodyCallout.mov**](Videos/Stealth_CornerGrab+BodyCallout.mov)
* Video of the Player Callout in action
  + [**AI\_PlayerCallout.mov**](Videos/AI_PlayerCallout.mov)

## Ambient Crimes: 1st Pass

## Goals

* Showcase the 1st pass implementation of the Ambient Crime system, which includes:
* System to spawn ambient crimes
* Activation states
* Success/Failure states
* Animated example playing in the hub world

## How to view this

* **Run Vertical Slice Hub Test World: “H0\_Hub”**
* Navigate to an orange exclamation point navmarker; this is an ambient crime location
* When you get close enough, you will get a UI notification indicating that the crime has initiated (Storefront looting)
* At this point, the AI will begin an animation that has them breaking out the window and stealing goods. As the player, you now have two options:
  1. To “win” the Ambient Crime encounter:
     1. Get within range of the AI and initiate combat. If you defeat all the AI, you will get a UI notification indicating that you have stopped the crime.
  2. To “fail” the ambient crime encounter:
     1. Let the animation play out. The AI will finish stealing items, and then throw a firebomb into the window. You will get a UI notification indicating that you failed to stop the crime.
* Notes:
  1. Once an Ambient Crime is activated, other Ambient Crimes will despawn. They will respawn when the first crime has completed by success or failure.

## Deliverables

* **Test World: “H0\_Hub”**
* Video watching the ambient crime fully play out; Batman fails
  + [**AmbientCrime\_Fail.mov**](Videos/AmbientCrime_Fail.mov)
* Video of Batman engaging the thugs and stopping the crime:
  + [**AmbientCrime\_Success.mov**](Videos/AmbientCrime_Success.mov)

# Setting Up The Build

* Extract [**Apollo\_PPM5.rar**](Milestone5Build/Apollo_PPM5.rar) to your PC
* Copy to your Xbox360 Game development Hard Drive
* This build currently supports XDK 8276 (appears to unofficially work on 9328).

# Launching a World on XBOX360

* From the Launcher select “Apollo\_PPM5.xex”
* On the Main Menu select “Start”
* Scroll down and select “Milestone Worlds”
* Select the desired world to launch
* To launch a different world, select START and select MAIN MENU

# Known Issues:

         Rolling Batman from side to side while gliding has an unblended state in the middle that appears to “pop”

         Attacking the tank thug in the mall atrium incorrectly says “Interrogate Boss -  2/1”

         AI cannot be attacked with melee.  User must use batarang to attack AI.

         At times, the tumbler can get stuck in a state in which the audio and FX seem to indicate that the tumbler is in reverse.

         No machine gun tracers are visible.

         The magnetic targeting is affecting the camera while not in aim mode by slowing down the camera movement while an AI is near the center of view.

         The first time the user boosts in the tumbler, the flame boost effect will not play unless the user has fired rockets already.  Boost effects will always work the second time.

         Occasionally will get stuck in a state where all you can do is rotate the camera around.  Resetting the game is required to clear the problem (cannot reach Main Menu)

* Conducting melee attacks while walking forward in the Movement\_Planar world causes a crash.