**Game Design Studio Two**

**“Mowdown”**

**Team Four**

Report for Sprint Four

21 / SEP / 2015 – 11 / OCT / 2015



**Team Members:**

Matthew Carver –12028130

Deinyon Davies – 11688025

Robert McClelland –11743693

Dinh Bao Anh (Brendan) Vo – 11437237

The most honoured Master of the Scrum,SirJesse Walker – 11729631

**OVERVIEW**

*Mowdown* is a ‘Demolition Derby’ or ‘Battle Bots’ style videogame, created by (in ascending alphanumeric order) Matthew Carver, Deinyon Davies, Dinh Bao Ahn (Brendan) Vo, Robert McClelland , and Jesse Walker.

Players customize one of several domestic **lawnmowers** by means of attaching defence appliances and weapons that have been unlocked and purchased by the player by means of in-game experience points and currency. Players compete against at least one autonomous opponent – a strategically formed battle-mower – as if both are controlled via Remote Control (R.C.).

Sprint Four sports several new features, bug fixes and enhancements, including (but not limited to): Particle effects for certain attachments, New level hazards, A 2 player split screen mode with XBox 360 controller support, Analytics was re-implemented, several new attachments including weapons and defence mechanisms, and improved Artificial Intelligence for path-finding and weapon control.

**SPRINT PLAN AND EXECUTION**

Sprint Four of Project Mowdown set out to implement Thirty-Two discrete new features including (but not limited to): bug-fixes, Multiplayer, improved Artificial Intelligence, improved User Interface, Sound effects, a sleeker looking UI, Attachment Particle effects, vehicle attachment modelling and implementation. These twenty-eight task items were identified in the initial Sprint Meeting.

As of the preliminary Sprint Meeting, the Sprint Log proposed a **total** **estimated** investment of **4,380 minutes** – 19900 minutes more than the estimated investment for Sprint Three – with an estimated **median** task duration of **80 minutes**. The sprint would optimistically be completed in 2,790 minutes.

This sprint focused largely on delivering new content for the users. In this endeavour we created four new attachments, as well as repurposed some of them to be hazards on the new map. We also implemented a multiplayer mode as some play testers expressed interest in combating their friends.

Completion of multiplayer took much less time than expected and resulted in a lack of tasks for Robert McClelland. To remedy this he added four more tasks that included implementing new attachments. These new tasks added up to 840 more minutes of work and were completed as a joint effort between Robert and Jesse.

At Sprint finalisation, the Sprint Log totalled thirty-three expected and unexpected tasks. The team observed a **total** **logged** **workload** of **2,715 minutes** (~45 hours).Ten tasks stood incomplete or uninitiated at the time of sprint closure resulting in 1310 worth of minutes uncompleted.

**SCRUM MEETING LOGS**

**21 / SEP / 2015**

5:00pm – 7:00pm

**Location**: UTS Building 11, Game Design Studio Laboratory

**Members present**: Brendan, Deinyon, Jesse, Matthew, Robert

The team identified backlog items and discussed time estimates.

**22 / SEP / 2015**

9:00pm – 10:00pm

**Location**: Online Group Discussion

**Members present**: Deinyon, Jesse, Robert

The team discussed new damage calculations using impulse. A new feature implemented in unity 5.2. Team also discussed complete update to 5.2 due to lighting bugs encountered in previous versions.

**27 / SEP / 2015**

7:00pm – 9:00pm

**Location:** Online Group Discussion

**Members present:** Deinyon, Jesse, Robert

The team discussed how new attachments are currently added to the store and how the AI uses these attachments. This meeting was set up so as to better educated the three programmers as they were working on intersecting systems without enough communication.

Once the meetup was completed the team was able to work on each other’s parts in case one of them was unavailable or was having difficulty fixing any bugs.

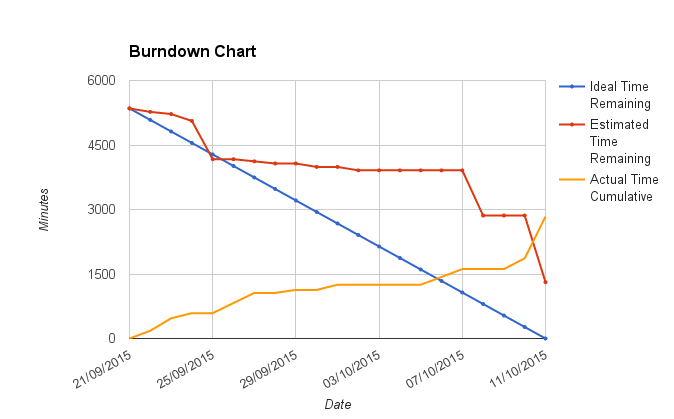
**07 / OCT / 2015**

**Location**: Online Group Discussion

**Members present**: Matt, Jesse, Robert

Discussed and stats of current attachments, the ‘standard’ level and how powerful various new attachments should be. This meeting focused on determining the new stats for all the attachments as the old stats were unsuitable with the new damage calculation system.

**BURNDOWN CHART**



**REFLECTION**

Due to the extra week we had to work on this sprint the team attempted to add several more tasks to get as much done as we could. Unfortunately this seems to have caused more of an overestimation of work required rather than an actual increase in completed work. While the tasks completed in this sprint are large and contribute greatly to the final product, with the time we had we probably could have completed much more. The team also went into ‘holiday mode’ over the break and very little work was done during half of the sprint. While we did catch up again at the end of the holidays this shows poor commitment to the project. Despite this we believe that mowdown is progressing nicely and expect to have a very fun game at the end of the semester.

**SPECIAL CIRCUMSTANCES**

N/A

**Sprint Backlog**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **User Stories** | **Acceptance criteria** | **Assigned to** | **Order** | **Task** | **Esimated Time** | **Minimum Time** | **Maximum Time** | **Actual Time** | **Completed On** | **Completed By** |
| As a user I want to play with my friends because I am popular | Multiplayer mode on the new map | Robert | 1 | Multiplayer mode on the new map | 890 | 550 | 1440 | 390 | 24/ SEP / 15 | Robert |
| As a user I want all the attachments to be destructible because for some reason only the spike can be destroyed | Fix attachment destruction for the booster and the flipper | Robert | 2 | Fix attachment destruction for the booster and the flipper | 210 | 130 | 340 | 30 | 7 / OCT / 15 | Robert + Deinyon |
| As a user I want a defensive attachment I can invest in because I like to play defensively | Implement the shield in store and mechanically | Robert | 3 | Implement the shield in store and mechanically | 210 | 130 | 340 | 60 | 7 / OCT / 15 | Jesse |
| As a user I want the signature circular saw I see in all battle bot shows because its cool | Implement the circular saw in store and mechanically | Robert | 4 | Implement the circular saw in store and mechanically | 210 | 130 | 340 | 120 | 7 / OCT / 15 | Jesse + Robert |
| As a user I want a better shop than the shitty one that is there now | A shop that works | Jesse | 5 | Make the shop work properly and be able to easily add more stuff | 550 | 340 | 890 | 550 | 11 / OCT / 15 | Jesse |
| As a user I want more extravagant hazards in my maps because the bucket is boring | Implement Circular Saw Hazard | Brendan | 6 | Implement Circular Saw Hazard | 340 | 210 | 550 | 30 | 11/ OCT / 15 | Robert |
|  | Implement Spiky Ball Hazard | Deinyon | 7 | Implement Spiky Ball Hazard | 50 | 30 | 80 |  |  |  |
| As a user I want the spike attachment to only do damage at the tip because right now it doesn't make sense | Spike attachment only does damage on the tip | Brendan | 8 | Spike attachment only does damage on the tip | 80 | 50 | 130 | 20 | 11 / OCT / 15 | Robert |
| As a developer, I require all team members' work to exist in a unified branch | The AI improvements from the FSM-AI branch have been successfully merged | Deinyon | 9 | Merge the FSM-AI branch into 'master' and resolve conflicts | 80 | 50 | 130 | 70 | 21 / SEP / 15 | Deinyon |
| As a competitive player, I require a more challenging AI | The AI considers the player's attachments as well as its own to influence path-finding | Deinyon | 10 | Implement improved pathfinding AI | 340 | 210 | 550 | 250 | 11 / OCT / 15 | Deinyon |
| As a competitive player, I require a more challenging AI | The AI is able to make informed decision on when to activate its boosters | Deinyon | 11 | Implement improved lateral booster AI | 210 | 130 | 340 | 35 | 07 / OCT / 15 | Deinyon |
| As a player, I want a vast selection of attachments to add to my mower | Populate mower attachment list | Matt/Deinyon | 12 | Populate mower attachment list |  |  |  |  |  |  |
|  | Tesla weapon | Matt | 13 | Tesla weapon | 80 | 50 | 130 | 120 | 01 / OCT / 15 | Matt |
|  | Plasma Shield | Matt | 14 | Plasma Shield | 130 | 80 | 210 | 180 | 23 / SEP / 15 | Matt |
|  | GLSL Plasma Fragment Shader | Deinyon | 15 | GLSL Plasma Fragment Shader | 50 | 30 | 80 | 235 | 27 / SEP / 15 | Deinyon |
|  | Flamethrower | Matt | 16 | Flamethrower | 80 | 50 | 130 |  |  |  |
|  | Spikey Balls | Matt | 17 | Spikey Balls | 50 | 30 | 80 | 30 | 29 / SEP / 15 | Matt |
|  | Cell Phone | Matt | 18 | Cell Phone | 30 | 20 | 50 | 40 | 29 / SEP / 15 | Matt |
|  | (Hand)Gun | Matt | 19 | (Hand)Gun | 130 | 80 | 210 |  |  |  |
|  | Flag attachment | Deinyon | 20 | Flag attachment | 50 | 30 | 80 | 80 | 22 / SEP / 15 | Deinyon |
|  | if time, (generic work lamp, random tools, wall mount thing) | Matt | 21 | if time, (generic work lamp, random tools, wall mount thing) | 80 | 50 | 130 |  |  |  |
| Mowers... MOAR! | Tank Mower | Matt | 22 | Tank Mower | 340 | 210 | 550 |  |  |  |
| As a user I want sound FX because the game is too quiet | Collision Sound Implementation | Brendan | 23 | Collision Sound Implementation | 50 | 30 | 80 |  |  |  |
|  | Suspension Sound Implementation | Brendan | 24 | Suspension Sound Implementation | 50 | 30 | 80 |  |  |  |
|  | Collision Track | Brendan | 25 | Collision Track | 30 | 20 | 50 | 50 | 10 / OCT / 15 | Brendan |
|  | Suspension Track | Brendan | 26 | Suspension Track | 30 | 20 | 50 | 200 | 10 / OCT / 15 | Brendan |
| As a user I want to be able to see my next battle and have some kind of menu | Make a central menu to choose battles and stuff (interactive garage, not as mower robb) | Jesse | 27 | Menu to choose stuff | 340 | 210 | 550 |  |  |  |
| As a user I want garage sounds | Garage sounds are in | Jesse | 28 | Sounds for when the garage door opens and the lamp turns on | 130 | 80 | 210 |  |  |  |
| As a player I want a brace for the new mowers so my mower looks cool | Alter the current brace to fit the tank mower model | Matt | 29 | Alter the current brace to fit the tank mower model | 30 | 20 | 50 |  |  |  |
|  | Alter the current brace to fit the aero model | Matt | 30 | Alter the current brace to fit the aero mower model | 30 | 20 | 50 | 20 | 23 / SEP / 15 | Matt |
| As a user I want to feel like I am immersed in the stadium atmosphere | There are eggs as an audience | Jesse/Deinyon | 31 | Add eggs in stadium scene that bounce up and down | 130 | 80 | 210 |  |  |  |
| As a user I want the signature hammer I see in all battle bot shows because its cool | Implement hammer attachment in store and mechanically | Robert | 32 | Implement hammer attachment in store and mechanically | 210 | 130 | 340 | 120 | 7 / OCT / 15 | Jesse + Rob |
| As a user, I require that my mower's plasma shield functions correctly. | The plasma shild functions as a source of radial force, deflecting any rigidbody nearby. | Deinyon | 33 | Implement plasma shield functionalty | 130 | 80 | 210 | 120 | 11 / OCT / 15 | Deinyon |
|  |  |  |  | **Totals:** | **5350** | **3310** | **8660** | **2360** |  |  |

**VERSION CONTROL COMMIT LOG**

commit 256cb8375d1274474a3c2850147ae284d54ec40e

Author: Deinyon Davies <deinyond@gmail.com>

Date: Sun Oct 11 21:38:39 2015 +1100

Updated documentation

commit a198542f6a382e0979a078d8a0d9d2d2c4c812ea

Author: Deinyon Davies <deinyond@gmail.com>

Date: Sun Oct 11 19:03:33 2015 +1100

Implemented plasma shield functionality

commit 3857e382e803dc1c71e28d0031971657e866a280

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Sun Oct 11 17:52:22 2015 +1100

Can buy items and see when you buy them

commit 919bcfdebba9819735b5c4f8f0dd8fea0463f8ce

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 16:52:07 2015 +1100

woo preliminary sprint four repor

commit 026fc38bec9f523eeef5a172476636eee23dc177

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 16:13:28 2015 +1100

a few more tiny changes to the spike prefab

commit 44e05553db94fe2c9b3577d080900a7092a8d8dd

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 16:08:53 2015 +1100

kinda directional damage? i caved and used 2 colliders

commit 30b6a415c60c656dcde529caecc43ef0cbdf3863

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 15:58:48 2015 +1100

fixed the win screen

commit 9b637d394265ed5e0a6c167a8a9f1209c3cc7643

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 15:43:10 2015 +1100

Saw Hazard (its a prefab, chuck it anywhere and it SHOULD work)

commit fad0d89e4e0fbe433095aaa32dd54b16001fae2a

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Sun Oct 11 15:35:14 2015 +1100

phone store does stuff now

commit 2d115f4b9df255905732aae1130c43ea6bf7299c

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Sun Oct 11 15:14:49 2015 +1100

small changes to phone

commit 567a6c9b099851e3cbcb6593b43c0e44bf80614c

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 15:11:36 2015 +1100

This too for analytics cuz github is slow to realise i changed things

commit 7adda64a9926275ff3bf0a9155560719f3add4d5

Merge: d9344ca d17aeb6

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 15:11:10 2015 +1100

Merge branch 'master' of github.com:ddoodm/GameStudioTwo

commit d9344ca61e9518d314c61264195c4c8ba878a7a9

Author: robafett <ram\_95@msn.com>

Date: Sun Oct 11 15:11:01 2015 +1100

Fixed Analytics again (its just as useless as be4 but watever makes cat happy (except 2d))

commit d17aeb6f5fc1d95d54aa3cd082d961a1c70724e6

Author: Deinyon Davies <deinyond@gmail.com>

Date: Sun Oct 11 12:27:01 2015 +1100

AI makes decisions on which side of the player it should attack

The FSM bot AI will attempt to navigate to the player's most vulnerable

socket. The AI does not yet consider its own socket equipment.

commit 55ffa9a930f3b56afc5cd81dc0997a05b3f5bb18

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Sun Oct 11 04:58:43 2015 +1100

Made a few changes to the phone and other things I can't remember anymore

commit 5d7cb5b312a6eeaab91c3893beb1adff08e8b7f3

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Sat Oct 10 18:35:18 2015 +1100

Items spawn on all scenes, code cleaned up (works fine <.<)

commit 95a25f2bb54fca03085b963d1dbd6bb7fb7d53e4

Author: Deinyon Davies <deinyond@gmail.com>

Date: Wed Oct 7 20:32:46 2015 +1100

Improved AI socket logic

commit e27bebd076f0b1637eacaeb41d3ec688ce4ee8a2

Author: robafett <ram\_95@msn.com>

Date: Wed Oct 7 14:37:56 2015 +1100

flipper can die (its hard tho) Booster is too boss to get broke dough

commit a2626c53c877d5e41468c0d9f1d7abd4b34ed0e9

Author: robafett <ram\_95@msn.com>

Date: Wed Oct 7 14:18:33 2015 +1100

wooo spinner can be used

commit 7847828101407d2c732fd175cc0bfdfeae4dadad

Author: robafett <ram\_95@msn.com>

Date: Wed Oct 7 13:54:57 2015 +1100

made the shield weigh less, and block damage better. Hp TBD

commit ff8adaf92ac3d6da2cd6fad5008e31054d05ab76

Author: robafett <ram\_95@msn.com>

Date: Wed Oct 7 13:50:11 2015 +1100

the saw spins (cant be used yet tho)

commit 9d84933b73be3930f24d6f80172d92760889b0ac

Author: robafett <ram\_95@msn.com>

Date: Wed Oct 7 13:24:43 2015 +1100

hammer swings

commit 46fd12a01be3be83c417db325b0bbe0747ea747d

Author: Matthew Carver <matthew\_carver@live.com>

Date: Wed Oct 7 13:08:06 2015 +1100

Phone for Jesse

Phone model for the workbench

commit 65bdd295e96b82a3462b7f3eb582579d6aabc1be

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Mon Oct 5 13:24:00 2015 +1100

Spooky Plasma Shield

commit ea7a1d204df6591066d9169546c4b9a5946d00ed

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Mon Oct 5 00:17:54 2015 +1100

All Items can be spawned in scene 1

commit 2a3765bcbe54caacf39fee9c9918b071a55c6c2d

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Sun Oct 4 18:31:36 2015 +1100

Added all models into scene and fixed highlighter code

commit 234e9f571de709ecb2c9f4a4f56a0086fb821bc4

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Sat Oct 3 03:40:08 2015 +1000

Put a Model Into The Store Scene

commit bb3fe9c69bc06f7ae2e933a60a58d11cdb182314

Author: Deinyon Davies <deinyond@gmail.com>

Date: Sun Sep 27 22:13:47 2015 +1000

Implemented Plasma Ball HLSL Shader. In BS3

Finished the plasma ball shader & material, but not the functionality.

Check out Battle Scene 03 (Arena) to test.

commit 3b3b059d9578e2924e6fbb2655e1e7179dd25dfc

Author: Deinyon Davies <deinyond@gmail.com>

Date: Sat Sep 26 12:08:31 2015 +1000

Fixed WebPlayer bug, Impulse collision and x86 Build

commit f708cc9422eec8384e5bf57460cc2daa745f44da

Author: robafett <ram\_95@msn.com>

Date: Thu Sep 24 18:04:34 2015 +1000

Fixed the store bug, flippers now face the right way and dont activate, shit stops complaining

commit 917a4faa48ab4622b0aa3d55f1599433a4246d94

Author: JesseWalker11729631 <11729631@student.uts.edu.au>

Date: Thu Sep 24 17:43:47 2015 +1000

git will die

commit f01ffbd711c78e08eebd289f3eb6dbd2a872697d

Author: robafett <ram\_95@msn.com>

Date: Thu Sep 24 17:43:43 2015 +1000

Fixing bug 1 with mutliplayer (controller 1 should now be top screen again)

commit 89947c993ffbce868cfa8b2f801a347a9d8ab1e9

Author: robafett <ram\_95@msn.com>

Date: Thu Sep 24 17:24:16 2015 +1000

Fixed bug 2 of multiplayer, items being spawned incorrectly on player 2

commit ababd5781ff8231662795e3b59cd53bb0e10faae

Author: Deinyon Davies <m@ddoodm.com>

Date: Thu Sep 24 11:46:24 2015 +1000

Update README.md

Added link to web build

commit efffe6f30ea76a2ade7ea853b676cb998a0d0a31

Author: robafett <ram\_95@msn.com>

Date: Thu Sep 24 07:14:55 2015 +1000

Fixing the loop

commit 02bbda6870a330b862917c16933364f9b9a0e116

Author: robafett <ram\_95@msn.com>

Date: Thu Sep 24 06:55:17 2015 +1000

Persistent Items thru scenes, spike is in the wrong place

commit d74e9b3c881b73bf4bc82b74b09326bf089dc3b0

Author: robafett <ram\_95@msn.com>

Date: Wed Sep 23 20:22:11 2015 +1000

stopping the itemSocket from complaining

commit 21ea0093f31fb7712b2802ad151a2988cc93b3fb

Author: Matthew Carver <matthew\_carver@live.com>

Date: Wed Sep 23 17:47:04 2015 +1000

Plasma Generator and the Aero Brace

PlasmaBase > PlasmaCells > PlasmaTopper

AeroFrontBrace

AeroRearBrace

AeroSideBrace

commit 9bfb7344b560d87c1d1bf7acddfa95dda90beae1

Author: Deinyon Davies <deinyond@gmail.com>

Date: Wed Sep 23 11:35:22 2015 +1000

Almost fixed issue with weapon attachments in the store.

Need to fix incorrect rotation of flipper attachment.

commit 75de4ac6fa3bf76188cc0233544c67968f0b8041

Merge: 9b296e6 0f59e68

Author: robafett <ram\_95@msn.com>

Date: Wed Sep 23 10:32:21 2015 +1000

Merge branch 'master' of github.com:ddoodm/GameStudioTwo

commit 0f59e68e2a54850502b6eeeef4bdf4c5ae668df4

Author: Deinyon Davies <deinyond@gmail.com>

Date: Wed Sep 23 10:30:02 2015 +1000

Fixed issues with enemy AI not draining its energy

commit 9b296e62b2a849a41b7ce30c80625db2ad5b19ba

Author: robafett <ram\_95@msn.com>

Date: Wed Sep 23 10:03:12 2015 +1000

woo multiplayer (no attachment persistence)

commit bc8916a65904ee3d17292863e1a326c3abc5f653

Merge: 80c8ed1 b9ef2a4

Author: robafett <ram\_95@msn.com>

Date: Wed Sep 23 08:29:35 2015 +1000

Merge branch 'Rob's-Multiplayer'

commit b9ef2a458901ad55a08af9875a103d15d2b7bf1f

Author: robafett <ram\_95@msn.com>

Date: Wed Sep 23 08:29:01 2015 +1000

Things can be highlighted with controllers (color can be changed too)

commit 0b3802ade60d453208b96b1fd385b06fed8fe5f8

Merge: aae1172 80c8ed1

Author: robafett <ram\_95@msn.com>

Date: Wed Sep 23 07:20:58 2015 +1000

Merge branch 'master' into Rob's-Multiplayer

commit 80c8ed19e49b36bd2cf925cdc6198f74f5ef05a9

Author: Deinyon Davies <deinyond@gmail.com>

Date: Tue Sep 22 21:23:19 2015 +1000

Flag model & partial implementation, damage 'impulse' collision test

Modelled and partially implemented the flag. It is not yet an

attachment.

commit 2fdc8dc9f17e510bb7031aa1ffe24d4f9c449949

Merge: d43c746 aae1172

Author: robafett <ram\_95@msn.com>

Date: Tue Sep 22 10:14:21 2015 +1000

Merge branch 'Rob's-Multiplayer'

commit aae1172baa42f2d50170bfba2ff8317f27af0d95

Author: robafett <ram\_95@msn.com>

Date: Tue Sep 22 10:13:44 2015 +1000

Multiple Controller Support

commit d43c7460a43350789f56158d04f8e078b44782c3

Author: robafett <ram\_95@msn.com>

Date: Tue Sep 22 07:11:23 2015 +1000

plz merge well

commit 8a5a112852088e2dfa92e9aaeb312beca024a459

Merge: 420754e bc9a292

Author: Deinyon Davies <m@ddoodm.com>

Date: Mon Sep 21 20:22:15 2015 +1000

Merge pull request #7 from ddoodm/FSM-AI

Weapon AI and Socketing Restructure

commit bc9a292513d968a9ffe6863a37d99121657d2062

Author: Deinyon Davies <deinyond@gmail.com>

Date: Mon Sep 21 20:21:29 2015 +1000

Fixed merge failures

commit 92048c81574e0d289d88563e3842c9a89c2e71d6

Merge: 84ac821 420754e

Author: Deinyon Davies <deinyond@gmail.com>

Date: Mon Sep 21 20:02:33 2015 +1000

First attempt to merge branch 'master' into FSM-AI

Conflicts:

GameStudioTwo/Assets/Prefabs/VehicleBot2.prefab

GameStudioTwo/Assets/Prefabs/VehicleV2.prefab

GameStudioTwo/Assets/\_Scenes/BattleScene03.unity