

CS5245
Vision and Graphics for Special Effects
Progress Report 2

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Changes and updates to project plan

1. Walking through wall Scene

We have shot a new footage for this scene. It is necessary because the camera angle of the previous blue screen footage is not optimized, with unnecessary shadow and movement of the blue screen. The distance of the actress walking into the wall was also not sufficient. Re-filming of the scene was needed. The next couple of weeks will be to fine-tune the major effect. We will also be adding a new scene that allows the actress to walk through the walls in another approach.

2. Bullet Scene

We have confirmed the slight modification to the special effect where the bullet flies past the camera. We are not able to execute the filming well enough for Matchmover to extract the full motion path and therefore, the scene will be cut into half as proposed in proposal 1.

We have also made slight modifications to the effect by having the bullet taking a curved route and adding other effects like smokes and a blurred trail. These will be further elaborated in the coming sections.

3. Disappearing Scene

We realized that the way the actor disappearing in the last scene was quite plain and therefore uninteresting. Hence, we have changed the way the actor disappears. Colored smoke effects will be implemented to complement his disappearance.

What have been done

1. Sequencing of scenes

We have completed the majority of the sequencing of our scenes in the order that we wanted. This is partly to make sure that the whole feel of the video is achieved, and if necessary, plan for another shooting if we realize that some of the shots weren't good enough. We have also added sound effects (eg: gunshots) and mental dialogues. The next step will be adding in the remaining uncompleted special effects scenes, subtitles, introduction and credits.

2. Animation of bullet

We have finished the animation of the bullet flying past the camera. We have also made a few slight modifications to the animation so that the effect will appear better on screen.

An example would be to let the bullet take a curved route instead of a straight one. This is to prevent the bullet to appear flying away from the camera, as it gets smaller. This also allows the bullet to exit the center portion of the left hand side of the screen instead of flying downwards and exiting at the bottom of the screen. The route of the bullet is achieved using motion path in Maya to guide its movement.



The initial effect where the bullet exit towards the bottom of the left hand side of screen. This does not give a very pleasant looking effect. The hole in the bullet results as a black screen is being used.



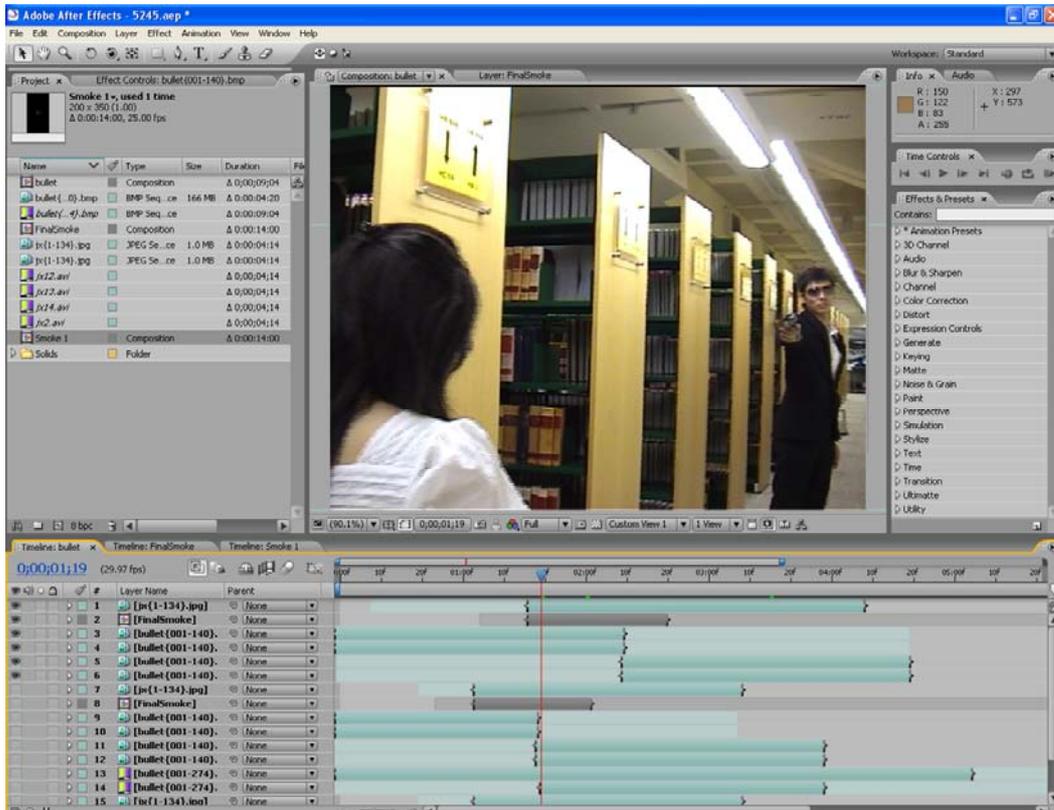
The bullet exit at the center of the left hand side of screen, which is appearing nicer now.

The next thing we did was to model the scene in Maya as closely to that of the actual environment. We paid a lot of attention to the lighting condition and how the lights are positioned. We then set up the lights in Maya accordingly. This adds realism to the bullet as the bullet has a shiny surface that reacts differently to different lighting condition and position.

To make extraction easier later on, we have added a blue screen behind the scene. This allows us to extract the bullet out using Ultimatte Advantedge or chroma keying more easily and to achieve a better keying of the bullet.

3. Composition of bullet to the video footage

We have also successfully integrated the bullet to the background video footage using After Effects. We have added smoke at the mouth of the pistol to enhance the special effect and to add realism to the firing of the bullet. We have also added a blurred trail that follows the bullet to create a very fast motion feel as the bullet zooms past the camera.



A screen shot of After Effects to show the multiple layers used to create the special effect for this scene.

4. Creation of smokes in video

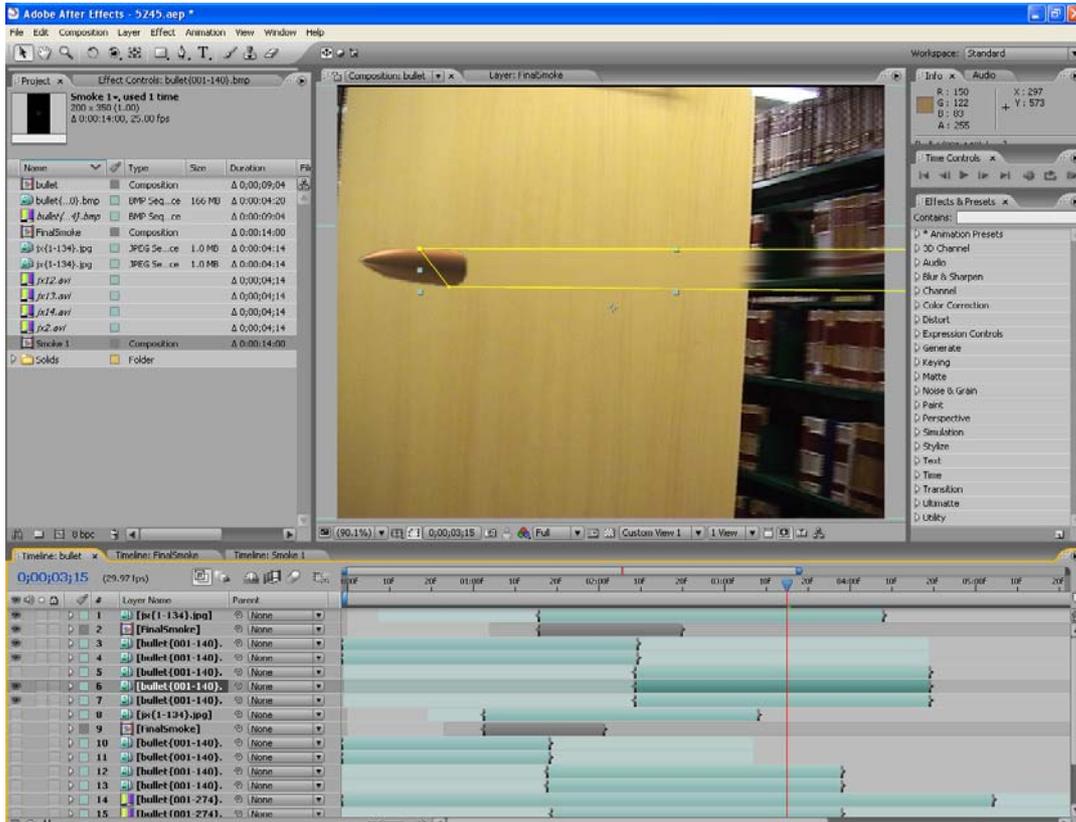
We decided to add smokes in some of our scenes to enhance the special effects. We search online for tutorials on making smokes in After Effects and skewed the smokes to better suit our effects.



The smoke is added in a layer above the video's layer, with a transformation trail that shift the smoke to the right as the camera pans to the left. This allows the smoke to stay near the mouth of the pistol as it exits the scene.

5. Creation of blurred trail

The blurred trail is created by adding another layer of the exact same footage, followed by a fast blur effect onto it. The layer is then masked, frame-by-frame, according to the position of the bullet.



A mask to outline the shape of the blurred trail, creating a zooming past effect.

Difficulties and proposed solutions

1. Blue screen filming for major effect

We have tried numerous ways to clean off the blue spills that are on the actress. We have used color key, color range and Advantedge, and also combinations of them. Advantedge can give a nice clean look, but has some blurry effect on the edges, while keying has nice and clean edges, but not at all the edges. A way to work around this is to do a manual mask to them.

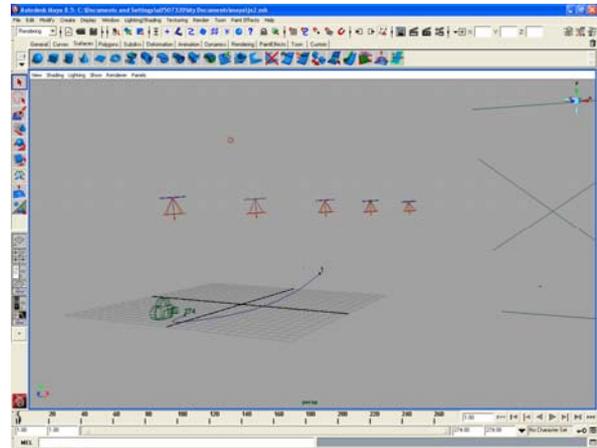
We have still yet to achieve a satisfactory result. We plan to further fine-tune and tweak with more attributes that can directly or indirectly affect the final results. There was both pros and cons that each method can provide.

2. Realism of bullet

We have to make sure that the bullet looked real when we composite it onto the video footage. As such, the modeling took up a significant amount of time. Besides constructing the shape of the bullet and mapping the texture onto the bullet, we matched the lighting of the library to the scene so as to add realism to the bullet as it flies past the camera.



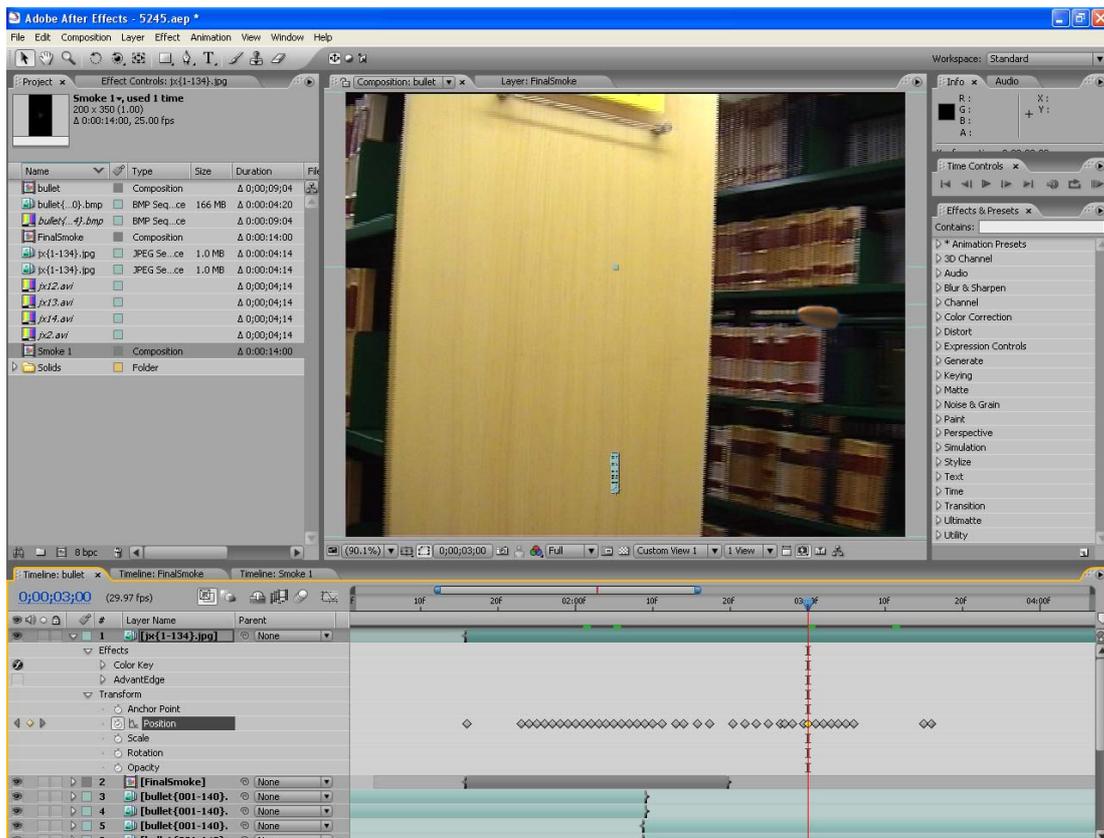
A screen shot that shows the light above the actors are longitudinal in shape.



We model this closely in Maya by placing spotlights linearly and closely so as to replicate the actual lighting condition.

3. Jerky motion of the bullet as it flies past the camera

We realized after compositing and keying out the blue screen from the animating bullet, the bullet appears to travel in a jerky manner. We tried to tweak the motion path in Maya but it leads to even worse result as tweaking the motion path in Maya is not as easy and direct as we initially thought. Therefore, we decided to painstakingly alter the position of the bullet at each frame so that the bullet will appear to travel in a smooth manner.



Frame by frame adjustment of the bullet's position to make its motion smooth.

4. Jerky shots in the last scene

We were puzzled that in our last scene, the scene was actually jerky, even though the scene was filmed on a stationary tripod, with no physical contacts with the camera. This pose a problem as we tried to composite another scene on top of it and the differences became very obvious. We tried to minimize such differences by adding more layers of masked footage strategically at different locations of the scene.