How Valve Connects Art Direction to Gameplay

Moby Francke
Randy Lundeen
Introduction

- Team Fortress 2
  - Distinctive Silhouettes
  - Stylized shading
- Left 4 Dead
  - Creating a Dark, Gritty Horror experience
  - Applying lessons learned from TF2
  - Utilizing “Filmic” effects
Team Fortress Mod
Initial Team Fortress 2
Initial Team Fortress 2

Medic!
Why The Unique Visual Style?

- Gameplay
- Readability
- Branding
Read Hierarchy

- Team - *Friend or Foe?*
  - Color

- Class - *Run or Attack?*
  - Distinctive silhouettes
  - Body proportions
  - Weapons
  - Shoes, hats and clothing folds

- Selected weapon - *What’s he packin’?*
  - Highest contrast at chest level, where weapon is held
  - Gradient from dark feet to light chest
Early 20th Century Commercial Illustration

Dean Cornwell

J. C. Leyendecker

Norman Rockwell
J.C. Leyendecker
*Thanksgiving 1628-1928*

J.C. Leyendecker
*Tally-Ho, 1930*
J.C. Leyendecker
Arrow collar advertisement, 1929

Rim Highlights

J.C. Leyendecker
Swimmin’ Hole, 1935

Red Terminator
Before Rim Highlighting

Early Production Still from *Meet the Heavy*
2D Rim Highlighting Paintover

Early Production Still from *Meet the Heavy*
Character Creation

1. Character silhouette
2. Interior shapes
3. Model sheet
4. 3D Model
5. Character Skin
6. Final Character in game
Character Silhouette

- Building block of character design
- Identifiable at first read
Interior Shapes

- Solving interior character design with shadow shapes
- Keep it iconic
- Work out design in three quarter pose
Model Sheet

- Use concept painting as guide
- Solve design problems using silhouette only
- Solve interior design with shadow shapes
3D Model

- Match silhouette to model sheet
- Solve 3 quarter design with screenshots / paintovers
- Model with character in mind
Base Ambient Occlusion map
Character Skin
Final Character

- 3D model with texture and basic shading
Engineer Concept
Engineer model
Pyro Concept
Pyro model
Environment Design

- Creating a compelling, immersive world
- Team distinction through material hue/value/saturation.
- Impressionistic painterly look
Contrasting Team Properties

- **Red**
  - Warm colors
  - Natural materials
  - Angular geometry

- **Blue**
  - Cool colors
  - Industrial materials
  - Orthogonal forms
World texturing

Texture map

In-game Screenshot
World texturing

Texture map

In-game Screenshot
World texturing

Texture map

In-game Screenshot
World texturing

Texture map

In-game Screenshot
Model texturing

Texture map

In-game Screenshot
Introduction

- Co-op, first-person horror game
- Dynamic shared narrative
  - Experience a scary action movie with your friends
- AI Director
  - Procedurally generated character performance, pacing, effects and music
- Available this Fall
Art Direction and Gameplay

- Creating a dark, scary cinematic environment
- Appling lessons learned from TF2
- Utilizing “Filmic” Effects
- Incorporating shaders that enhance a dark setting
Filmic effects

- Color Correction
- Grain
- Vignette
- Local Contrast Enhancement
- Dynamically communicate game state
No Post-processing
Color Correction
Grain
Before Vignette
Vignette
Local Contrast
Filmic Effects OFF
Normal State
Hunter Pounce
Normal Stress
High Stress
Lighting for Darkness

- Horror/suspense theme
- Lighting that supports fiction/navigation
- Importance of Silhouette
- Player as light source
Too many areas of contrast
Simplified lighting
In-game headlights
In-game headlights
Smoking the Set

- Separate foreground from background
  - Fog
    - Light colored fog in dark areas to contrast with silhouettes of infected in mid-ground
  - Particles
    - Adds atmosphere and helps accentuate silhouettes of infected against lighter particles
Reload, Shove & Muzzle Flash

- Player is the light source
- Increases drama and immersion
- Flashlight is attached to the weapons
  - Reloading
  - Shoving
  - Muzzle flash
- Encourages players to coordinate actions
Self Shadowed Normal Mapping

- Normal mapping locally alters surface orientation, causing detailed lighting effects
- SSNM incorporates local self-shadowing information for greater surface richness
- Reacts to lighting from radiosity as well as dynamic lights in the scene, such as the player’s flashlight
- Refactoring our shader code, this turns out to be free
Wetness / Puddles

- Film technique
- Adds details to dark settings
- Enhances moodiness
Wet Surfaces in Engine
Summary

- Team Fortress 2
  - Distinctive Silhouettes
  - Stylized shading

- Left 4 Dead
  - Creating a Dark, Gritty Horror experience
  - Applying lessons learned from TF2
  - Utilizing “Filmic” effects