Pre-Production:

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 Day 1: Thursday
 September 8th, 2005
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      Spent the day working on a new height map from scratch. Throwing out the attempt from the summer and starting over. Scaling map down to 256x84px *before* trying to edit it. Each pixel will represent one 'game-tile' from the original game.

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 Day 2: Friday
 September 9th, 2005
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      More work on the height map. Continually revising it, just to get a 'good-enough' working draft. Starting to play with environment settings in the *Torque Game Engine (TGE)*.

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 Day 3: Saturday
 September 10th, 2005
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      Figured out how to turn on "The Sun". Turns out it's just two (ie. One or more) lens flare objects positioned up in the sky; it is totally independent from level lighting... On the bright side, they CAN be animated fairly easily. Even though it doesn't provide for day/night cycles I at least have sunrises now.

      Also found a MOD from the Torque-Resources library called a 'Game-Manager'. It sets up a date & time system including basic calender that can fire events at regular intervals. It also has a built in dynamic weather system that tracks "barometric pressure" and turns clouds, fog, rain and even lightning on and off.

      There's also a MOD that does full day/night cycles including ambient lighting and sky color changes, in sync with sun animation. It has it's own system for tracking the "Celestial position" for the sun. Is supposed to work with above MOD, but is harder to install.

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 Day 4: Sunday
 September 11th, 2005
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      Installed the 'Game Manager' – date, time and weather system. The resource hasn't been maintained so I had to hit up all the bug-fixes and features listed in the Resource-Comments on-line, by hand. Turning into a great first place to dig into the engine. I think I can really make some improvements to this and then release an updated Mod to the Torque-Community.

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Day 6: Tuesday
September 13th, 2005
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Made some HUGE improvements today. Dynamic weather system is finally working seamlessly and bug-free! I added my first four actual lines of code that are completely my own. It allows the system to randomly assign new (independent) X, and Y wind velocities and then using the combined wind-strength assign a relative rain-intensity (in drops-per-min.) every time the startRain() function is called. Now each storm is different!

Also tracked down a bug: Wind-Velocity
– If the initial wind-velocity in the .mis file is listed as (0 0 0) it cause problems. Specifically if the first weather pattern is "cloudy" or "clear skies" it will not initialized properly, and clouds will be disabled for the run-time session.
– WindVelocity (1 1 0) – seems to be a safe choice. Other values are unknown.
– Real problem is unknown.

This weeks to-do list:
– New Height-Map revision
– Add water blocks *(basic – don't stress on it)*
– Add Celestial Day/Night cycles
– Add Fractal skies
– Finish 1st draft of texture lib
– Apply *my* textures to terrain
– Apply erosion & smoothing filters to terrain
– Documentation

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Day 7: Wednesday
September 14th, 2005
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Can't sleep, can't eat, must keep coding...

Actually today was documentation day:
– Finished "Master To-Do List"
– Wrote 1-page Sr. Project Proposal
   – It was 3 pages...
   – Already handed it in to Dr. Tinkham at first "group meeting.
      – She liked project idea, thinks it's ambitious
      – How do I define a Game-Engine to those who don't know?
– Started Design Document (ie. Copied story from manual)
   – Hey it's a start!
   – If you have an 'A' you must have a 'B'; this is it..
– Started this log and recorded up to this point

* Found a mod: Resource #5553 - that should allow toggling of "map-repeating".
* Found a Doc: Resource #24545 – that tells how to apply patches!

Further progress for today will be recorded tomorrow.
Good night!

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 Day 10: Saturday
 September 17th, 2005
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     Bought the lighting pack and installed it. It comes with a complete SDK already – just had to plug in my game which was pretty much cut & paste at this point.

     Added Celestials patch, started trying to integrate into weather module, and track down some celestials bugs.

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 Day 11: Sunday
 September 18th, 2005
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     Broke the whole SDK, missions crash at startup. Have eliminated all files I was working on at the time. Must be a hidden character or a run-time error in the engine. Perhaps a new change conflicted with something somewhere else?

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 Day 12: Monday
 September 19th, 2005
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     Re-built the engine – this primarily involved re-patching the TGE+LP-1.3.5 SDK with celestials. It worked, even though it took me from mid-night to 7am.

     Still several bugs in celestials – sky not changing colors etc. Have to research it.

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 Day 13: Tuesday
 September 20th, 2005
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     Got in email contact with the author of the celestials class. He's writing his own engine now, I knew already from his 'last-login' date that he'd moved away from Torque. Sam was a huge help though. He mentioned that each object needs to check the color Celestials is currently dictating and blend itself in that direction. This was a big help.

     Not only did I find the bug for sky color, several lines that needed to be patched weren't listed in the CVS-patch file, but I was able to integrate Celestials into the "Fractal-Sky" version of sky.cc. I did this by taking the most recent version of the fractal 'sky.cc', which compiled and worked on it's own in my SDK, and applying the sky.cc section of the Celestials patch + my fixes + other bug fixes listed in celestials-resource-comments-online.

     There is one bug, in that during sunset/sunrise a "hole" in the sky can be seen directly above the camera. I suspect this is because the max-height of the horizon-fog-bans is WAY to high, possibly infinitely so. Sam also gave me an alpha-color value to check in relation to this.

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 Day 15: Friday
 September 23th, 2005
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     Fixed the sky-hole, but don't know how. Not getting useful help from the forums any more on this one, just vultures that already want to rip off my cleaned up code w/out knowing how it works. :'-(Still trying to put a patch together hopefully for this weekend.

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 Day 17: Sunday
 September 25th, 2005
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      Discovered that the web-site I built over the summer for my portfolio is well, gone! The site was done, just needed to add the content, and upload. Now I can't find a complete source anywhere. I found lots of bits and pieces so I'm going to have to put this back together as I go.

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 Day 21: Thursday
 September 29th, 2005
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      Submitted the patch where it promptly disappeared into the ether... I'll have to try another time. A large part of the website is finished and on-line. Not telling anyone the link yet though. Most of the content still needs to be revised... It's kind've first draft still.

      I also got another iteration of the height-map done. It's really starting to look like Hyrule... I'm going to leave this environmental stuff for a while. I need character and item models which means learning Blender, and I need to make textures.

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 Day 26: Tuesday
 October 4th, 2005
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      Started learning Blender – it's a mountain of an application to learn. Like the control and complexity of VI multiplied out to control 3 dimensions instead of one. I've just been doing tutorials for now. I ordered the book, it should help.

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 Day 32: Tuesday
 October 10th, 2005
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      Went home for the weekend. The days are really flying by now and progress is SLOOOW for all the time I'm dumping in. Still really learning Blender. Started learning how to make textures – it's a more involved process than I thought. I followed some tutorials, I'm going to have to learn a lot more about GIMP apparently. Getting the textures to look the way I want on objects IN-engine, or IN-Blender, is proving to be an even MORE involved tweaking process than making the damn things.

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 Day 35: Thursday
 October 14th, 2005
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    Took me two days just to get a decent grass texture and i'm still not not entirely happy. Very frustrating.

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 Day 39: Monday
 October 17th, 2005
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Got my ground textures! Dirt was from a photo.
Grass was done with gimp filters:
- Add a solid brown "dirt" layer
- Add "NewLayer-1"
- Add noise to "NewLayer-1"
- Set "NewLayer-1" to:
- Add a solid green "grass" layer
- Add Wind, left to right
- Rotate CCW
- Add Wind, left to right
- Rotate CW
- Add "NewLayer-2"
- Copy Noise from "NewLayer-1" to "NewLayer-2"
- Offset "NewLayer-2" by (+5px, +5px)
- Add Guasian Blur (5)
- make "NewLayer-2" a layer mask on green grass layer.
- Set grass layer to: normal
- Apply Mask
- Merge down "NewLayer-1"
- Merge down grass

"patchy-grass" used Dirt texture from photo, plus a lightened copy of final grass layer.
Then do this:
- Add "NewLayer-1" - white background
- Add "NewLayer-2" - transparent background
- Apply Clouds-Plasma (newlayer2)
- -80 saturation shirft
- randomly select areas by color and delete
- alpha to selection to select all remaining
- use dump-bucket on "fill entire region" to fill with black
- merge down to white layer
- apply Guassian Blur
- copy as layer mask to grass layer
- Merge down grass to dirt

How LOOOOONG it took me to learn this.... sigh...

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 Day 40: Tuesday
 October 18th, 2005
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Got the game-pad working in the last two days. Specifically the left & right joysticks to control player movement and camera angle respectively. Process was this:
- Get the joystick to work, particularly left one for movement
  - Resource Link:Code : Proper Fps Joystick
  - Code : Add Gamepad support to Torque
- Add third-person camera mod
  - Resource Link:Code : Using a Separate Camera Object
- Add "Advanced Player Controls" mod
  - Resource Link:Code : Player Movement with a Separate Camera Object

No huge problems encountered. Except I made a mistake on the 2nd patch which stopped compilation.

Script Changes:
- Set all game-pad bindings in a separate "gamepad.binds.cs" file.
- Made a function at the top of default.binds.cs for calling other bind files
  - just add new files to the list
- call new function from bottom of default.binds.cs so they don't break other stuff.
- Made an incremental file fps.gamepad.binds.cs
  - which has correct joystick control for First-Person view
  - could be merged with gamepad.bind.cs via If/else statements
  - need a variable to check what mode we're in

Unreleated Script Changes and notes:
- Rewrote wind control section of GameManager Mod (server/scripts/weather.cs)
  - Wind now fluctuates hourly.
  - Avoids initliztion on (0,0,0)
- maybe set wind to ((2/10) rainWind) to save particle effects?
  - Would need a rainWind variable
- created consoleMethod for updateClouds()
  - used to switch between stormy .bmp clouds and "clear-skies" fractal clouds
  - what actually goes in updateClouds()

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 Day 41: Wednesday
 October 19th, 2005
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Found out my resource WAS accepted! It got in on the 19th. Looks like some people are going to help carry it forward. Some years-old problems have already been solved! :-)

http://www.garagegames.com/index.php?sec=mg&mod=resource&page=view&qid=8848

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 Day 43: Friday
 October 21th, 2005
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		Finally got No-Terrain-Repeat working, but it looks like crap. Water-repeat doesn't work and there's no good solution posted for that. I proposed a better solution to the whole problem, waiting for a response.
		http://www.garagegames.com/index.php?sec=mg&mod=resource&page=view&qid=5553

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 Day 50: Friday
 October 28th, 2005
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		Started trying to *override* terrain repeating. Got it partially working. Wanted to have the whole thing "half-done" by the 31st but I think i'm going to miss. I've been trying to get to doing the inventory system all week but can't seem to get around to it.

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 Day 57: Friday
 November 4th, 2005
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		Long week, beginning to realize how *BIG* this project is. Didn't get to inventory yet. Spent most of the week trying to prototype the first level. For this I had to setup and learn "QuArK". I found some video's that show how to configure it for Torque and get one started. Lost about a day or two just getting going though.

		Eventually got a good template room that I can use and started creating the level one room at a time. Looking into how I can mesh the level with the Overworld map in-engine. I may have to create a "dummy-entrance" that teleports the player to the real level-one. I need to explore triggers and see how hard this is.

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 Day 64: Friday
 November 11th, 2005
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		Time continues to fly by. I spent most of the week trying to get the entrance to level-1 right. After a lot of experimentation, I ended up building this little bunker-style entrance that gets the player underground and into a short non-descript hall-way where the player can be teleported with out knowing.

		Actually getting the teleport triggers to work correctly took most of the week. There were some weird bugs, and I had to branch out my knowledge of objects and classes in Torque-Script. Everything seems to be kind've working now, except there's a bug with the camera that causes the it to *fly*(interpolate over the distance) to the new player position rather than *teleport* w/ the player...

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 Day 71: Friday
 November 18th,, 2005
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		Getting down to the wire now. Several things accomplished in the last week or so. While I was (supposed to be) playing with QuArK and interiors I went on a unrelated-tangent and explored the fxFoliage replicator. It's good for adding

plants using billboarding. The concept is extremely simple, but there were a few undocumented pitfalls (image sizes must have dimensions that are powers of 2). The tough part is making the effect look good artistically.

Also started playing with the MakeHuman mod for Blender, found out I could merge some of the features of the different demos by coping files from one to the other. I need to make a new character model for 'Link' so that I can start programming the player movements. The programming doesn't do much good without an animated model.

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 Day 78: Friday
 November 25th, 2005
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Made some progress with defining the 'Link' model in MakeHuman. The Blender-book i ordered a week or two ago finally arrived. I've started doing some tutorials on animating characters and stuff. Doesn't look like I'll actually get to finishing this guy let alone programming him unfortunately... :-(

Spent a lot of time in the last couple weeks trying to go back and fix some of the bugs in the day/night cycle where they shade the player-model, trees and interiors. Didn't meet with any success at all, but I did get the shadding right on the fxFoilageReplicator shapes.

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 Day 85: Friday
 December 2nd, 2005
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And we're done... I'm happy with what I did, I'm not all that happy with how little I feel I got done. I still have to do the paper on it. Did the outline and realized I covered a lot more territory than you can tell from looking at them demo.

In the last week I spent time making the water-specularity, that is the sun-reflection on the water, look decent. I finally got it and added some new effects, dependent on the celestial setup. It's not the same as dual-wielding combat but oh-well...

Check the website for more...