

## **CHANGE LOGS:**

### **Visual Effects**

- Fixed an issue with motion blur that could cause crowds to render incorrectly.

### **New Damage Model**

- Elasticity rates used to determine damage for opponents cars' wheels hitting a player tire has been adjusted. This should allow for more consistent damage for both parties.
- Collision properties for tires have been adjusted slightly.
- Braking forces are now immediately set to zero for detached wheels and the brake temperature is set to something reasonable.
  - - These adjustments should fix some zippy issues that may arise from high brake temperatures when a wheel becomes detached.
- Fixed an issue with the renderer so detached car parts do not show through car while using an in-cockpit camera.
- Fixed an issue where parts close to a virtual mirror were not showing up correctly.

### **Virtual Reality**

- Improved the chances of Virtual Reality starting up correctly when both HDR and anti-aliasing are enabled together. Using HDR with VR is not advised due to memory and performance implications, and often requires more than 4GB of GPU. However, the simulator now allocates the necessary resources early and makes sure it never resizes them, so it is now less likely to encounter a failure during loading or after due to a resize or loss of focus.
- A new option: "FullyWaitForSync=0" has been added to the [Rift] and [OpenVR] sections of the "rendererDX11.ini" file.
  - - The default of value of 0 is most useful if you can maintain a very high refresh rate in VR, as it can actually help shave a little time off each frame without much detriment to control lag.
  - - However, if you are unable to maintain the refresh rate and are often dropping frames, you might achieve slightly less control lag by altering this setting to a one. It is more advised to reduce settings (Reduce or disable AA, turn off mirrors, post-procs, two pass trees, then shadows, and maybe even reduce pixel density below 100%) to help your PC better maintain the refresh rate. There is no better fix than a fast frame rate.

## **Controls**

- Fixed an issue in the control mapping wizard that could cause some analog knobs to be assigned to two inputs at the same time.

- While the Logitech API is in use, temporarily stop checking the steering wheel range.

## **CARS:**

### **Dallara F3**

- Adjustments have been made to the V7 Tires.

- - Tolerance to driving at very high slip angles has been reduced.

- - Tire warmers have been added to bring the tires up to the same temperature that would be built during a formation lap or a full pace lap.

- - Minimum tire pressures (set via the garage) have been increased.

### **Dallara IR18**

- Season setup for Homestead Miami Speedway - Oval has been updated.

### **Dirt U.M.P. Modified**

- Opponent cars have been adjusted to prevent the left-rear tire from floating above the track surface during Replays.

### **Indycar Dallara - 2011**

- This vehicle has been converted to use PBR shaders.

### **NASCAR K&N Pro Chevrolet Impala**

- Season setups have been updated.

### **NASCAR Monster Energy Cup Chevrolet Camaro ZL1 - 2018**

- A new restrictor plate spoiler has been added.

### **NASCAR Monster Energy Cup Ford Mustang**

- A new restrictor plate spoiler has been added.

### **NASCAR Monster Energy Cup Toyota Camry**

- A new restrictor plate spoiler has been added.

### **[Archive] Mazda MX-5 Cup - 2015**

- This vehicle has been converted to use PBR shaders.

### **[Archive] Mazda MX-5 Roadster - 2015**

- This vehicle has been converted to use PBR shaders.

### **[Archive] Riley MkXX Daytona Prototype**

- This vehicle has been converted to use PBR shaders.

### **TRACKS:**

#### **Charlotte Motor Speedway**

- (Legends Oval) - Added missing gain-time checkpoints to prevent course cutting.

#### **Circuit de Barcelona Catalunya**

- Pit crew animations have been disabled at this track.

#### **Homestead Miami Speedway**

- Several Musco lights have been added at end of pit road.

- Updated some billboard signs.

- Fixed some minor texture issues with light fixtures.