SILANTRO HELICOPTER SIMULATOR

UPDATE LOG

v 3.0.12

ADDITIONS

- Complete rewrite of the core flight model. The new system uses a full Blade element momentum theory analysis method, with improved controls and model accuracy.
- Added a low fidelity model for users interested in a more "Arcady" flight model. You can configure the model to use Only keyboard inputs or a combined mouse-keyboard control system.
- Merged the airfoil functionally with that of the fixed-wing system, so you can now use plots from both projects interchangeably.
- Added support for a surround engine sound system where the volume and the engine sound depend on the camera position relative to the aircraft centre.
- Added support for more flight instruments specifically MFD dials
- Added multi-edit functionality to the component editors

CHANGES

- The rotor can now be fully configured as a single component; the blade data will be calculated automatically based on the supplied variables
- Reduced operational scripts down even more with more combined functionality to reduce complexity, redundancy and save performance.
- The helicopter input collection and processing function has been moved to a dedicated Input class. This way everything about input and control of the aircraft is done in one location.
- The engine core (for each engine type) now derives from a custom Engine Core class, so the engines now have a common core class with a Thermodynamic extension for each type.
- The light system has been improved further and light bulbs can now be configured to work with Unity post-processing. The light flash curve offset and blink rate on each bulb can also be adjusted.

v 2.34

ADDITIONS

- Added a Flight Control System to handle input filtering and control and in future updates will provide full autonomous/assisted control.
- Improved the blade collision behavior, the helicopter is now more stable during collisions.
- Added Rollout Altimeter and Airspeed MFD displays,
- Fixed the particle system error in the engine components after compiler update. So, code can be updated while the simulation is running.
- Minor bug fixes

v 2.30 Beta

ADDITIONS

- Implementation of a proper power transmission system from the engines to the rotors
- Addition of a drag panel to model the full shape of the helicopter fuselage to improve the drag analysis.

CHANGES

Full Rewrite of the core physics system including:

- Improvement of the blade and rotor system. The blade system now uses the effective coefficient system to properly analyses the thrust, torque coefficients over the blade panels.
- Improvement of the aerofoil system to balance out the forces on the helicopter rotors i.e the tail aerofoils now help the helicopter balance out in forward flight.
- Introduction of in-editor gizmos for the blades and aerofoils to make the setup process easier.

v 2.20

ADDITIONS

- Implementation of a "per-section" airfoil selection option. Now each individual section of an aerofoil can have its own shape/performance data.
    - Coming Soon: Introduction of airfoils with numerical flap data baked in for better performance and stall characteristics.
- Complete rewrite all power engines with full/realistic thermodynamic assumptions. Very crucial engine data (at several points) from the engines can now be collected and used e.g. stage or turbine pressure, EGT, mass flow rates etc.
- Addition of a Refuel and Resupply system for aircrafts i.e. Expended weapons can be resupplied at designated locations.

v 2.12

ADDITIONS

- Implementation of a realistic fuel and distribution system. The fuel tanks can now be placed in different parts of the aircraft and will have effect on the balance (COM position) of the aircraft
- Addition of a fuel selector system for the distributor. The distributor can be instructed to use fuel from the Auxilliary or Central Tanks. Or left in Automatic mode.

v 2.01

CHANGES

- Complete system rewrite from the ground up to fix major bugs and restructure the script communication system.
- Reduce operational scripts down from 53 to 37 usually with combined functionality to reduce complexity and save performance.
- Aircraft control sensitivity on the Roll, Pitch and Yaw axis can now be set within the controller script.
- Instrumentation and COG functions have been combined to save performance
- Missile, Rocket and Bullet components will now derive from a single "Munition" script to make setup easier and save performance
- Weapons manager component has been replaced with the "Armament" system which controls the stores and sends control information to the munition.
- Health and destruction system have been returned to a non-fused state to ease understanding and usage.
- Helicopters can now be started "Hot" with the engines running and at a set altitude/speed.

ADDITIONS

- Added new public functions to each script to ease calls and external control
- Smoother and easier foil setup with position and orientation selection.
- Added radar signature-based detection and sizing, also added a lock alert/indication on the base transponder.
    - Option to scale individual icon on the radar screen
    - RCS return now affects icon size
- Radar and camera views and added support to get list and properties of detected objects.
- Free camera mode and player view functionality.
- Added option for pure data processing on peripheral computer components or combined guidance functionality.
- Added direct fuel weight conversion based on selected unit on the fuel tank
- Added gun recoil functionality and support for rigidbody bullets.