

Version 1.0
Revised December 2008

1 Purpose of the Realism Module

The module was created to enhance your simulation experience by providing you a platform with which you can experience, and perhaps train for failures and emergencies.

Use of the RealismModule is optional, and by default is installed with the aircraft with all features and probabilities turned OFF. All possible failures are provided with a sliding probability scale so that you can control the likelihood of a failure occurring.

The module also controls other preferences for your flight environment, including:

1. Alarm sounds on/off
2. Display of control yokes in the cockpit
3. Display of tiedowns and ground objects when the aircraft is parked.

2 Operation of the Realism Module

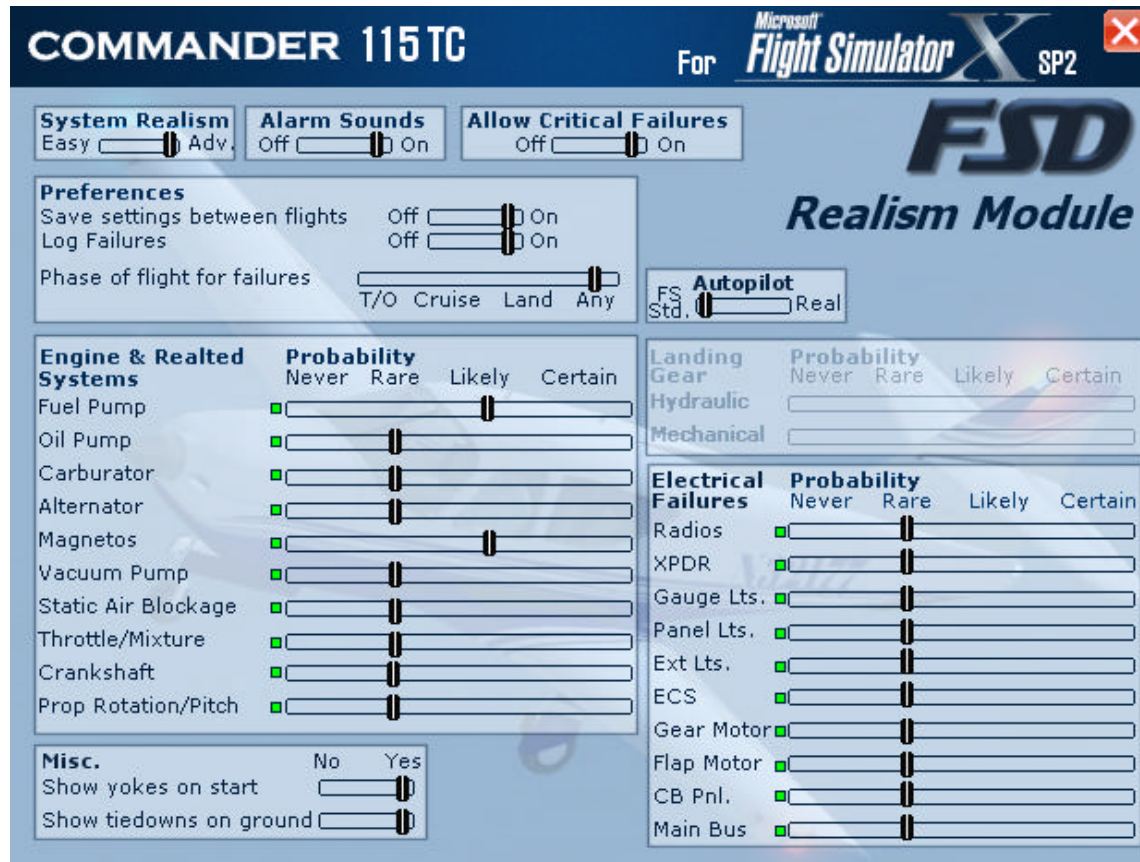
2.1 ACCESSING THE REALISM MODULE

The module is only accessed in Flight Simulator X, by clicking the icon located on the left hand side of the pilot panel.



2.2 GRAPHIC USER INTERFACE (GUI)

This is the GUI that is presented when accessed in the simulator per section 2.1:



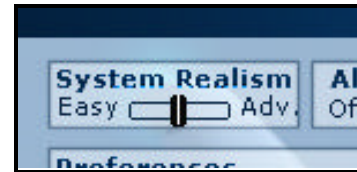
Information on usage of these controls is provided here in the following section topics:

- 2.2a General Usage Instructions
- 2.2b General Settings
- 2.2c Engine & Related Systems
- 2.2d Landing Gear Failures
- 2.2e Electrical Failures

2.2a General Usage Instructions

The “master control” for the failure probabilities in the module is **System Realism** control. →

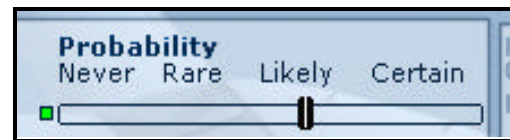
- Easy – failures turned OFF
- Advanced (ADV) – realism turned ON



The Easy position, shutting the failure system OFF will prevent any programmed failure from occurring. It will also restore a failed component or system if a failure is already in progress.

Probability of any possible failure is selected by the slide control associated with it, directly to the right. Probabilities are as follows:

- Never = Cannot happen
- Rare = 2% chance
- Likely = 60% chance
- Certain = Fasten your seatbelts



When a failure will occur depends upon the **Phase of Flight** you select (see below), and a random time assigned to the failure when/if it is invoked.

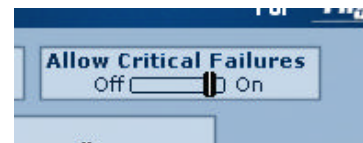
A green indicator next to the slide control will illuminate when no failure for that component is in progress. A red indicator means a failure is in progress.

Phase of Flight – selected from this slider control. If the control is set to Takeoff (**T/O**), **Cruise** or Landing (**Land**) a failure can only occur during this phase of your flight.

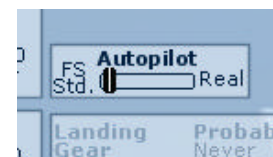


Setting the control to **Any** will allow failures to occur at any time.

Allow Critical Failures – in the OFF position potentially lethal failures, such as total engine failure, cannot occur.



Autopilot – in the Real position the autopilot operates just as its real-world counterpart. See ST55X Pilot Operating Handbook.pdf for more details. In FS Std. mode it operates like any other Flight Simulator autopilot. Use this setting if you use external hardware for the autopilot.



2.2b General Settings

The following controls on the module are used for various realism features in the aircraft.

- Alarm Sounds On/Off – When in the OFF positions audible warning and indicator alarms will be silenced.
- Save Settings Between Flights – When in the ON position the module will remember all of its control settings the next time you boot the aircraft.
- Log Failures – In the ON position a log will be maintained in the aircraft's folder in your SimObjects\Airplane\FSD C115 folder entitled Failure Log.txt.
- Show Yokes on Start – In the ON position the control yokes will be visible in both the 2D and 3D panel when you boot the aircraft. In the OFF position they will NOT be visible at startup. Note that you can manually turn the yokes on and off as well any time during the flight. See the [Panel Handbook](#) for more details. This control is also in the [Load Manager](#). See the [Load Manager Handbook](#) for more details.
- Show Tiedowns on Ground – In the ON position tiedowns and ground objects will be visible after 30 seconds when:
 - The aircraft is parked and the parking brake is ON
 - The engine is stopped.
 - All electrical power is shut off

2.2c Engine & Related Systems

The following failures can be programmed:

1. Fuel pump
2. Oil pump
3. Carburetor
4. Alternator
5. Magnetos
6. Vacuum pump
7. Static air blockage ("steam-driven" instrument failure)
8. Throttle/Mixture
9. Crankshaft
10. Prop rotation/pitch

Engine failures can be cascading. For example, an oil pump failure will cause the engine heat to rise rapidly. If not shut down this can result in total engine failure, and possibly the destruction of the engine beyond the ability to repair. Likewise a crankshaft failure will also destroy the engine if it is not shut down very quickly. Note that if the [Allow Catastrophic Failures](#) control is on the OFF position the engine cannot fail or be destroyed.

If your Save settings between flights control is in the ON position the damages/failures to your engine will be permanent unless they are repaired. Repairs can be made on the [Load Manager](#). The Load Manager can also simply clear that data from memory. See the [Load Manager Handbook](#) for more details.

2.2d Landing Gear Failures

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2.2e Electrical Failures

The following failures are possible:

1. Radios – A failure will result in intermittent or complete loss of one or more of your radios or GPS.
2. Transponder – If this occurs your transponder will stop signaling.
3. Gauge Lights – Your instrument backlights may fail intermittently or completely.
4. Panel lights – Your panel flood lights may fail intermittently or completely.
5. Exterior Lights (EXT) – One or all of your beacon, strobe, NAV, taxi or landing lights may fail.
6. Environmental Control System (ECS) – A failure will result in loss of your heater, air conditioner/compressor, fan, or all of these components.
7. Gear motor – Will result in loss of your gear motor. Landing gears would only be able to pump down manually. See the [Panel Handbook](#) for more details.
8. Flap motor – Will result in loss of flaps control.
9. Circuit breaker (CB) panel – Random failures of circuit breakers may occur at any time.
10. Main bus – May result in intermittent or total failure of the main bus circuit breaker.