

Kerbal Space Program - Feedback #6576

Aerodynamic control surfaces should take surface speed into account

01/08/2016 01:08 AM - Kasuha

Status:	Needs Clarification		
Severity:	Normal		
Assignee:			
Category:	Gameplay		
Target version:			
Version:	1.0.5	Language:	English (US)
Platform:	Linux, OSX, Windows	Mod Related:	No
Expansion:			

Description

KSP control system is a "fly by wire" system - instead of giving the player control over individual control elements, they are supposed to act in accord and perform the desired motion.

Aerodynamic control surfaces work correctly in this regard only if they are passing through air in the direction for which they are designed. When the air direction changes substantially or even reverses, they act against action of other control elements such as reaction wheels or engine gimbal. This makes problems in getting aerodynamically less stable ships from undesired situations such as flat spin or reverse even more serious than they necessarily have to be.

In attached screenshots it is apparent that when the vehicle is moving forward, both engine gimbal and control surfaces turn the vehicle in the desired direction according to applied pitch command.

When the vehicle moves backwards, control surfaces deflect in the same direction as when going forward, but that leads to force being applied on the ship in the wrong direction.

Suggested change: aerodynamic control surfaces should take airspeed (surface speed) into account and adjust direction into which they deflect based on it so that the force applied on the vehicle is in the requested direction.

Also when the airspeed direction diverges significantly from "design" direction (e.g. more than 60 degrees, but not below 60 degrees from directly backwards), assignment to pitch/yaw/roll should be probably ignored and all control surfaces should be used for all functions until control is regained.

History

#1 - 07/17/2016 09:43 AM - TriggerAu

- Status changed from New to Needs Clarification

Files

screenshot33.png	1.28 MB	01/08/2016	Kasuha
screenshot34.png	1.28 MB	01/08/2016	Kasuha
screenshot31.png	1.39 MB	01/08/2016	Kasuha
screenshot32.png	1.35 MB	01/08/2016	Kasuha