

Kerbal Space Program - Feedback #19234

ModuleAblator reentryConductivity is not restored when ablator is depleted

06/16/2018 01:04 PM - ringerc

Status:	New		
Severity:	Low		
Assignee:			
Category:	Physics		
Target version:			
Version:	1.4.3	Language:	English (US)
Platform:	Linux, Windows	Mod Related:	No
Expansion:	Core Game		

Description

An ablator part presently functions as a near-magical and almost indstructible insulator/radiator when it's at 0 ablator. Even interplanetary re-entries can usually be performed with a completely depleted heat shield.

This appears to be because of the 3300K temperature tolerance combined with the fact that the part sets conductivity to 0.01 (reentryConductivity) when its bottom surface is exposed.

It'd be extremely helpful if reentryConductivity only applied when the ablator quantity was nonzero. Or even better, only when ablator is being consumed, i.e. when pyrolysis is actually providing a shield of emitted gas between the oncoming shock wave and the craft skin.

I've tried (https://www.reddit.com/r/KerbalSpaceProgram/comments/8q1k37/modding_heat_shields_so_it_matters_when_ablator/) to make an ablator where you have to care about running out. But it's very hard to make one that won't explode on a fairly reasonable re-entry and still fails when it runs out. I think it really needs core support, and the simple fix is probably to restore the original part conductivity when the shield runs out of ablative material.

(While you're at it, can you nerf the temp tolerance on service bays a touch, so they're not also magic super-heat-shields you can use to slam into the atmosphere at 5000m/s?)

Personally I think it's a bug that reentryConductivity applies when the ablator is exhausted. But I'm being cautious and filing as feedback.

History

#1 - 06/17/2018 04:44 AM - ringerc

See also <https://github.com/ringerc/KSP-DRE-Lite> which illustrates that resetting conductivity does the job. Approach borrowed from Deadly ReEntry and simplified.

If KSP even just reset the conductivity that'd be enough.