Kerbal Space Program - Bug #26565

Airbrake drag upon deployment is incorrect

11/13/2020 04:05 PM - ren0k

Status:	Confirmed	**Start date:**	11/13/2020
Severity:	Low	**% Done:**	10%
Assignee:			
Category:	Aerodynamics		
Target version:			
Version:	1.10.1	**Language:**	English (US)
Platform:	OSX, Windows	**Mod Related:**	No
Expansion:	Breaking Ground, Core Game, Making History		

Description

DESCRIPTION:
When deploying an airbrake, the drag calculation is incorrect.
This becomes noticeable when the airbrake is already placed under an angle on the craft.
The animation will correctly show that the airbrake extends outwards, however in reality it seems that the airbrake deploys inwards, reducing the amount of drag.

HOW TO REPLICATE:
1) Place an airbrake on a craft, under an angle of 45 degrees.
2) Set the deploy angle to 45 degrees, so that the total angle upon deployment into the airstream should be 90 degrees; this should equal maximum drag
3) Fly the craft, use Aero Data to monitor the amount of drag
4) Deploy the airbrakes once a sufficient velocity is reached, and notice that drag decreases to almost 0 upon maximum deployment

History

#1 - 11/28/2020 08:09 PM - 18Watt

- Status changed from New to Confirmed

- % Done changed from 0 to 10

- Platform OSX added

Confirmed on OSX, version 1.10.1.

It is not simply the displayed drag value in the PAW being incorrect- the vessel is reacting as if the drag from AIRBRAKES drops to zero. I tested using a similar setup to the original post- Put two AIRBRAKES on a plane, installed at 45 degrees undeployed. Flying at 45 deg UnDeployed gave the expected result of significant drag. When I 'Deployed' them to additional 45 deg., (so they now appear to be at 90 deg), the drag dropped to near zero.

The results could be seen in 3 ways-
1. The drag value in the PAW dropped to (near) zero.
2. The visual aero-forces indicator (F12 I think?) also indicated a reduction in drag.
3. The aircraft accelerated to a velocity consistent with a zero-Airbrake deployment for that alt and thrust setting.

Files

Airbrake Retracted.jpg	267 KB	11/13/2020	ren0k
Airbrake Deplyed.jpg	257 KB	11/13/2020	ren0k