Kerbal Space Program - Bug #25712

Engine Plates have Drag (cube) issue

07/05/2020 11:24 PM - klesh

Status:	Resolved	**Start date:**	07/05/2020
Severity:	Low	**% Done:**	100%
Assignee:	just_jim		
Category:	Parts		
Target version:	1.10.1		
Version:	1.10.0	**Language:**	English (US)
Platform:	Windows	**Mod Related:**	No
Expansion:	Making History		

Description

I am experiencing excessive drag (compared to 1.9) on parts immediately behind, and attached to the decoupler node of engine plates in 1.10. I'm not really a maths, aero, or drag master, but something seems incorrect to me.

I have created the same simple vessel in 1.9 and 1.10 and there is a marked difference in the drag amounts displayed in the PAW. (see attached screenshots)

To replicate, turn on aero data in action menus, make a simple craft consisting of a fuel tank -> engine plate -> engine -> fuel tank attached to decoupler of engine plate -> engine.

Observe the engine plate has a bunch of zeros in 1.10 where in 1.9 it had numbers. I don't know if that makes a difference, but the drag values on the part immediately below probably do. You will see they are significantly higher in 1.10 than in 1.9 resulting in poorer performance of any craft with an engine plate (or more). You can observe the zeros on the PAW for the engine plate right inside the VAB as well.

This behavior is observed on all seizes of engine plate.

History

#1 - 07/06/2020 04:53 AM - Anonymous

- Status changed from New to Confirmed

- % Done changed from 0 to 10

Shucks, the EnginePlates were the only parts for which the *old* method to give proper drag to each 'variant' was working.

What do we want as a long-term fix? Since these EnginePlates do not shield their contents, probably the fairest approximating shape for drag would be a cylinder with top and bottom areas that fully occlude a matching cylindrical part, and very short side-lengths to add minimal simulated skin friction to the friction already being simulated for the contents.

Long term, a custom DRAG_CUBE entry for each part seems wise, like the solution to #19376. In the short term, for those of us on PC and with the 'Module Manager' mod, the text below in a *.cfg file in GameData will provide 'procedural' drag-cubes that corresponding to a short-sided cylinder occluding both upper- and lower- mated parts:

```
@PART[EnginePlate*] {
    %MODULE[ModulePartVariants] {
        %useMultipleDragCubes = false
    }
    %MODULE[ModuleJettison] {
        %useMultipleDragCubes = true  // the 'default' drag-cube represents the maximum-length shroud
        %useProceduralDragCubes = true // so use a procedural cube to avoid repeating the exposed-to-heat bug
#23924
    }
}
```

#3 - 07/06/2020 10:36 PM - just_jim

- Assignee set to just_jim

#5 - 08/16/2020 05:28 AM - Anonymous

This was resolved in version 1.10.1 with the 'useProceduralDragCubes = true' in the configuration files.

#6 - 08/17/2020 08:50 PM - just_jim

- Status changed from Confirmed to Being Worked On

- % Done changed from 10 to 30

#7 - 08/17/2020 08:50 PM - just_jim

- Status changed from Being Worked On to Ready to Test

- Target version set to 1.10.1

- % Done changed from 30 to 80

#8 - 08/17/2020 08:50 PM - just_jim

- Status changed from Ready to Test to Resolved

- % Done changed from 80 to 100

Files

340m - v1.9.png	1.83 MB	07/05/2020	klesh
349m - v1.10.jpg	404 KB	07/05/2020	klesh
1037m - v1.9.png	1.75 MB	07/05/2020	klesh
1017m - v1.10.jpg	408 KB	07/05/2020	klesh