

Kerbal Space Program - Feature #764

controlling an RCS block's thrust output

06/07/2013 06:10 PM - SwiftHands

Status:	New	% Done:	0%
Severity:	Very Low		
Assignee:			
Category:	Parts		
Target version:			
Platform:	Any	Mod Related:	No
Expansion:			

Description

When dealing with RCS placement at center of mass (to prevent undesired rotation during translation movement), a common problem is usually encountered;

since the center of mass is dynamically shifting, be it fuel consumption or in a case of a space tug \ two docked crafts - anything from a small added payload, and up to a massive craft.

this makes proper RCS translation almost impossible,

To mitigate that,

a feature allowing to manually set the thrust output of a selected group of RCS blocks can help balance the thrust applied on different section of the craft

based on the added or changing mass (and as a result, center of mass as well).

consider a space tug with a large cylinder of RCS tanks, and a set of 4 blocks placed on one end and another set of 4 blocks on the opposite end of the tug, with the center of mass aligned right between the two groups accurately,

one end of the craft has a docking port, and is now docked to a small payload with the intention of moving it (to be placed as part of a space station being constructed for example).

now with the added mass on one end of the tug the center of mass moved towards the end of the docking port where the payload is now attached

and its no longer accurately positioned between the two RCS groups on both ends.

in order to deal with this issue,

could increase the thrust output of the 4 RCS blocks on the docking port end of the tug, and reduce the 4 RCS block on the opposite end of the tug.

this will allow us to fine tune the thrust to technically act as if the center of mass is placed right between the two RCS groups as we would normally have with no payload docked to the tug, and as a result translation movement should be rotation free to a large extent.

NOTE:

I do not suggest increasing the max RCS thrust to allow more control, rather being able to set it from a range between its current max output and 0.

since the thrust output is currently 1.0 for the RCS, being able to control it from 0.1 ... 0.9, 1.0 will suffice.