

## Kerbal Space Program - Bug #21964

### Reputation loss from World First Milestones with Unpaid Research Program active...

04/23/2019 01:04 AM - abc

<b>Status:</b>	New	<b>Start date:</b>	04/23/2019
<b>Severity:</b>	Low	<b>% Done:</b>	0%
<b>Assignee:</b>			
<b>Category:</b>	Gameplay		
<b>Target version:</b>			
<b>Version:</b>	1.7.0	<b>Language:</b>	English (US)
<b>Platform:</b>	Windows	<b>Mod Related:</b>	No
<b>Expansion:</b>	Core Game, Making History		

#### Description

When Unpaid Research Program is activated in the Administration building at 95%, some (but not all) World First Milestones result in reputation loss. I suspect there are two bugs: 1) Administration strategies may not be intended to apply to World First Milestones but do if the milestone was reached while satisfying a contract parameter or completing a contract and 2) if Unpaid Research Program is applied to World First Milestones, the reputation loss is subtracted from zero and the result takes the place of the usual reputation gain rather than being subtracted from the intended reputation gain.

This is based on the following sequence of events (s used for science symbol, r for reputation symbol, c contract, cp contract parameter, wfm world first milestones):

409 reputation when recovering crew member

c: s (+4) r 0 (-9)

wfm: s 2 r 4

wfm: s 6 (+3) r (-6)

wfm: s 2 (+1) r (-3)

cp: s 2 (+2) r 0 (-5)

c: s (+6) r 1 (-13)

cp: s 4 (+1) r 0 (-3)

cp: s 4 (+1) r 0 (-3)

cp: s 4 (+1) r 0 (-3)

c: s (+4) r 0 (-8)

c: s (+14) r 2 (-29)

wfm: s 4 (+2) r (-5)

402 reputation when recovering crew member

The difference in reputation is 7, the wfm negative reputation adds up to -14 and the positive reputation gain to 7. The three milestones that resulted in negative reputation happened during a rescue mission when a contract parameter or contract was completed ("constructing the first station", "performed a docking maneuver", "returned home from the surface"). The one that didn't was "performed a rendezvous maneuver".

Bug [#19505](#) might potentially be due to this issue.

#### History

##### #1 - 04/23/2019 04:12 AM - abc

Hm, it seems the negative reputation happens at other times as well, not just when there is a contract event. I'm not sure why it didn't happen the one time (I'm certain the Unpaid Research Program was in effect then) but the next two World First Milestones I encountered ("fly by" and "orbit") also gave negative reputation even when unrelated to a contract.

##### #2 - 02/25/2022 02:56 PM - Akilax

The bug still persists in version 1.12.3.3173.

I am speculating from my observations here, but the problem is maybe, that the calculations for reputation loss are calculated independently of the calculations for the reduced gain, with both being influenced differently by the modifier of the current reputation level.

In other words:

I suspect that the game first applies the full reputation gain from a contract modifying it only by current rep level modifiers, which leads to a significant reduction of the gains on high reputation levels already. This is followed by a subtraction from reputation by the factor of the strategy applied to the base reputation gain value of the contract, which is this time not reduced due to high reputation level, as this only applies to gains, not losses.

This results in a net loss already at mediocre reputation levels if the strategy is applied with a high factor. If the strategy is implemented with a low factor, the net loss occurs only once reputation is high enough.

In any way, the contract does not work as described and in its current form is not useful.

A fix of this bug should see to it, that reputation gains are calculated as if there was no "Unpaid Research Program" strategy active, only being affected by the modifier of the current reputation level. This value should then not be directly added to reputation but just be multiplied by the factor of the strategy level of "Unpaid Research Program" currently active. This would lead to the result as advertised in the description and would make the strategy a valid option.

C = unmodified contract reward in reputation points

M = modifier based on current reputation level

S = factor of the strategy implemented (e.g. 0.95)

N = net reputation gain after all calculations

$$C * M * (1 - S) = N$$

I believe this should solve the issue at every reputation level.