

Kerbal Space Program - Bug #5408

Fuel flow bug while converting ore to fuel

09/14/2015 03:46 PM - tgrade

Status:	Closed	Start date:	09/14/2015
Severity:	Normal	% Done:	100%
Assignee:			
Category:	Gameplay		
Target version:			
Version:	1.0.4	Language:	English (US)
Platform:	Win32	Mod Related:	No
Expansion:			

Description

Fuel flow and therefore a thrust is reduced when conversion is happening. For Atomic Rocket Motor it's happening only when converting ore to liquid fuel.

Reproduction

1. Load the attached craft on the pad (Super Mega Ore Eater Static.craft)
2. Open the context menus for the ISRU converter, Mk2 to 1.25 adapter and bottom NERV (As viewed on the pad, right hand outboard)
3. Apply full throttle, and initiate the first stage (space)
4. Toggle the converter on an off continuously for Liquid Fuel conversion during the test.
5. Monitor thrust of NERV and fuel level of adapter.

Expected:

Fuel flow and thrust is normal.

Result/Observed:

Fuel flow and thrust is reduced.

On the fist two screenshots you can see fuel flow is down to 0.00164 on some of the engines. And total usage is 10.46. On the last one - ore converter is turned off and fuel usage is normal 18.35

See screenshots of static craft for values as the furthest tank (Mk2 to 1.25 adapter) from the engine is depleted with converter running, and again with converter turned off. (AdapterTankEmpty-*)

Additional simpler craft attached (ResourceTestRig.craft) for verifying other LF engines using the above steps.

Notes:

I did additional testing today. It's related not only to ore conversion but also to "Mk2 to 1.25m Adapter" (maybe to any empty fuel tank in the chain). On this video <https://youtu.be/hHqytlg025w> you can see how flow is being reduced while converting which if fine until fuel in "Mk2 to 1.25m Adapter" ends. In the end of the video I'm trying to show that bug is independent on each side. Additionally I have attached a craft to help you reproduce the bug.

The static craft use multiple launch clamps to supply a constant EC charge which is enough to power a conversion. This removes any variable sun exposure for solar panels which may affect conversion and therefore results.

Related issues:

Related to Kerbal Space Program - Bug #5132: Active ISRUs can lead to reduced... **Closed** **06/14/2015**

History

#1 - 09/14/2015 10:08 PM - RexKramer

- Status changed from New to Need More Info

Couple of questions/comments.

The output of the engine in the first screenshot is about 12kN, under those conditions it should be making 60kN. So that's odd.

Does the engine from the first screenshot have fuel to feed it? I realize the vessel has plenty of fuel, but if the tanks feeding the engine are empty, then the only source of fuel is coming from the ISRU, which doesn't have enough output to keep the engine running at full throttle.

Without testing, I would guess that the odd numbers are mainly because some of the fuel from the ISRU is feeding the engine or engines directly, thus their final fuel flow value is going to be different than expected. That said, I'm curious if everything still adds up after taking account of the ISRU output.

Even with the curious reduced thrust of the LVN to ~12kN, the fuel flow would still be higher than the depicted value unless the ISRU is providing fuel to offset the burn.

#3 - 09/14/2015 11:33 PM - Squelch

I have investigated this and I can confirm that the thrust is reduced on all liquid fuel engines when **BOTH** another tank is empty, **AND** conversion is happening.

I do believe this was the intended report, but it is difficult to determine. tgrade, would you mind referring to the [bug reporting guide](#) and providing us with some more information? The images do not clearly show the structure of the craft, so a craft file would be useful. Also, if you could describe what your expectations are, and how to achieve the situation, it would be most useful in fully confirming my observations?

Thanks for the report.

#4 - 09/14/2015 11:34 PM - Squelch

- Category changed from Gameplay to 35

- Platform Win32 added

- Platform deleted (Windows)

#5 - 09/15/2015 07:29 AM - tgrade

- File Test6.craft added

Subject: Fuel flow bug while converting ore to fuel

Description: Fuel flow and therefore a thrust is reduced when conversion is happening. For Atomic Rocket Motor it's happening only when converting ore to liquid fuel.

Expected: Fuel flow and thrust is normal.

Result/Observed: Fuel flow and thrust is reduced.

Notes:

I did additional testing today. It's related not only to ore conversion but also to "Mk2 to 1.25m Adapter" (maybe to any empty fuel tank in the chain). On this video <https://youtu.be/hHqytlq025w> you can see how flow is being reduced while converting which if fine until fuel in "Mk2 to 1.25m Adapter" ends. In the end of the video I'm trying to show that bug is independent on each side. Additionally I have attached a craft to help you reproduce the bug.

#6 - 09/15/2015 07:38 AM - tgrade

RexKramer wrote:

Does the engine from the first screenshot have fuel to feed it?

On the screenshots all the engines has fuel supply.

#7 - 09/15/2015 01:09 PM - Squelch

- File ResourceTestRig.craft added

- File Super Mega Ore Eater Static.craft added

- File AdapterTankEmpty-ConvOff.png added

- File AdapterTankEmpty-ConvOn.png added

- Subject changed from Fuel flow bug while converting ore to fuel. Atomic Rocket Motor to Fuel flow bug while converting ore to fuel

- Description updated

- Status changed from Need More Info to Confirmed

- % Done changed from 0 to 10

I can confirm that your observations do indeed match my own. I have updated the original description with your new additions, and have added a

reproduction recipe. I also attach the simpler craft that I have used for confirmation, as well as a slightly modified version of your own craft so the test can be run statically on the pad.

The Mk2 to 1.25 adapter observation is related to it being the furthest from the engine. Once this is depleted, the engine will lose thrust while the converter is running. The other engines appear to suffer as more tanks are depleted. The simpler craft demonstrates this, and other engines can be swapped out to verify it affects all LF engines (except Jets) to some degree. The NERV is a particularly good example, and shows the effect well, as it has a fuel flow close to, and slightly above the conversion rate. This leaves more time to observe the effect.

Thank you for bringing this to our attention on the tracker. We have been aware of anecdotal reports on the forums, but a proper report has been elusive. This comprehensive report can be passed on to the Developers for attention.

#8 - 09/15/2015 08:26 PM - Kasuha

Squelch wrote:

We have been aware of anecdotal reports on the forums, but a proper report has been elusive. This comprehensive report can be passed on to the Developers for attention.

This has already been reported in [#5132](#) (for 1.0.2) including instructions to replicate the issue.

What is the reporting policy anyway? When a new release is out, should we re-report all persisting issues or not? That's one thing that is not clear to me.

I would suggest re-inspecting bugs reported for 1.0.0 through 1.0.3 since many of them are still present in the game and many were not re-issued for 1.0.4.

#9 - 09/15/2015 11:05 PM - Squelch

- *Related to Bug #5132: Active ISRUs can lead to reduced engine thrust added*

#10 - 09/15/2015 11:47 PM - Squelch

Kasuha wrote:

This has already been reported in [#5132](#) (for 1.0.2) including instructions to replicate the issue.

That one slipped through the net, and the searches. It does sum the issue up completely, and this one simply replicates it. Both serve to demonstrate the issue, and it is now under investigation.

What is the reporting policy anyway? When a new release is out, should we re-report all persisting issues or not? That's one thing that is not clear to me.

I would suggest re-inspecting bugs reported for 1.0.0 through 1.0.3 since many of them are still present in the game and many were not re-issued for 1.0.4.

There are some longstanding reported issues that may have languished in deference to future changes, and some that are talked about outside of the tracker, but have never been reported. Unfortunately this is possibly in the assumption that they have been reported already. The aim is to work through all issues against the current and pending releases and process, forward, resolve, and cross reference them. Much painstaking work has already been done on this already, but any extra help is always welcome.

So to answer the question; we welcome any new observations. Please do feel free to update older issues so they re-gain prominence and can be processed.

We now have a resident [bug reporting guide](#) on the tracker wiki that will be kept up to date. It outlines all of the information we would like to see, and following the format helps immensely when process a report. The [what happens next](#) section may be of particular interest.

#11 - 07/17/2016 09:39 AM - TriggerAu

- *Status changed from Confirmed to Needs Clarification*

- *% Done changed from 10 to 0*

#12 - 10/13/2016 01:52 PM - sal_vager

- *Status changed from Needs Clarification to Ready to Test*

- *% Done changed from 0 to 80*

This should have been fixed, please retest.

#13 - 06/22/2017 08:32 PM - Squelch

- *Status changed from Ready to Test to Resolved*

- % Done changed from 80 to 100

#14 - 06/22/2017 08:32 PM - Squelch

- Status changed from Resolved to Closed

Files

Kerbal Space Program 12.09.2015 22_23_34.png	934 KB	09/14/2015	tgrade
Kerbal Space Program 12.09.2015 22_23_56.png	1.03 MB	09/14/2015	tgrade
Kerbal Space Program 12.09.2015 22_24_06.png	1.03 MB	09/14/2015	tgrade
Test6.craft	145 KB	09/15/2015	tgrade
ResourceTestRig.craft	90 KB	09/15/2015	Squelch
Super Mega Ore Eater Static.craft	215 KB	09/15/2015	Squelch
AdapterTankEmpty-ConvOn.png	1.53 MB	09/15/2015	Squelch
AdapterTankEmpty-ConvOff.png	1.56 MB	09/15/2015	Squelch