

Re: MMU Question

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In article <d22mkc\$rlj\$1@panix1.panix.com>,
Keith F. Lynch <kfl@KeithLynch.net> wrote:

>> *Yes, this was the backup for a major MMU failure (pretty unlikely in
>> itself, mind you, because the MMU is highly redundant).*

>

>*What if the MMU gets stuck in the on position?*

If memory serves, it has redundant shutoffs. Most any safety-critical rocket system does.

>*Does the shuttle have*

>*enough delta-V to catch him after the MMU gas is all expended?*

Yes, easily, even assuming he somehow failed to shut it off earlier.

>*Could it cause reentry?*

Not the shuttle MMU, no. As others have already noted, the original Gemini-era peroxide MMU probably could, in the worst case.

>*How much spin could a malfunctioning MMU put on an*

>*astronaut, and what could be done if that happens?*

The guy in the MMU promptly shuts it off, establishes by experiment which side has the problem (as with most RCS systems, there are two independent sets of thrusters, precisely to permit dealing with such situations), and uses the other side to stop the spin. Then unless he's pretty close, probably the orbiter comes and gets him, to minimize demands on the MMU and reserve its remaining gas for dealing with any further problems.

If he's somehow incapacitated, the orbiter comes and gets him, and his buddy in the cargo bay takes the spin off by the "reach up and grab him" technique, which has been used successfully on multi-ton satellites.

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"Think outside the box -- the box isn't our friend."

-- George Herbert

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