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The following comments apply to the proposed FAA regulations on RLV entry.

Many objects have reentered the Earth's atmosphere from space and survived intact. It is notable that none of these have caused a single fatality. It is therefore puzzling why the FAA should enact strict licensing requirements on an event that does not, on the historical record, seem to entail high average risk.

This can be supported by a calculation.

The population of the continental US is about 30 people per square kilometer, or an average area of 30,000 square meters per person. On the average, a reentry vehicle crash which impacts an area of 30,000 square meters (an extremely high area) would result in one person being affected. While a direct impact on a highly populated area would obviously kill more people, vast areas of the United States are empty, and the actual most likely case is that an impact would land on an unpopulated area and result in no deaths at all. This has been assuming a random targeting area; in actual reality, the targeted area for a RLV landing is likely to be far from the populated areas of the U.S., and the probabilities are therefore much lower.

The a-priori odds of any given person being killed by a RLV accident during reentry in the continental United States, then, are about one in 270 million. It is clear that, given the small numbers of RLVs compared to the large number of airplanes, that the general risk to the public due to RLV reentry is small to the risk to the public due to airplanes.

The estimated cost of this regulation is 113 million dollars. This is an enormous sum to spend for what is a very unlikely benefit. The cost is also very likely underestimated.

In brief, it would be advantageous to reduce the paperwork and bureaucracy associated with the licensing of RLV reentry, since the payoff is negligible. Overly strict RLV reentry licensing regulations will force the launch providers overseas, and could have a negative impact on the industry and the economy.

A proposed modified rule would be that the FAA is required to grant a reentry license unless they (the FAA) have documented reasons to believe that the reentry will be unsafe. This would make it up to the FAA to prove that a vehicle reentry is unsafe, and not up to the industry to prove that it is safe.

The estimate of costs given in the notice does not include the cost to industry of launch delays due to the FAA. Delays could cost on the order of a hundred million dollars in lost business per event, and there is no mechanism in the proposed regulations to insure timely issuance of licenses. There is also the cost to industry of the FAA withholding a license for a launch. This could also be hundreds of millions of dollars.

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