

The following posting was made to rec.models.rockets by *Peter Alway*, a prize-winning expert on scale model rockets.

While archiving this last week in Washington again, I found a fascinating document I had frequently seen references to, but had never read. Since "The Artist's Friendly Legal Guide" tells me that the copyright on this document expired 20 years ago, I'll post it here for rocket lovers around the world.

Just a little background: The Smithsonian Institution published Robert Goddard's "On a Method of Reaching Extreme Altitudes" early in 1920. At the time, he was not yet building liquid-fuelled rockets. One of the rockets he had invented was a "multiple-charge" rocket, in which successive propellant grains were shot into the combustion chamber in flight. The idea was that the heavy combustion chamber would not have to be large enough to hold all the propellant at once. The next year, Goddard would dig into liquid propellants. Only after the British invention of the center-star propellant grain and Jack Parson's invention of composite propellants would the Solid be used for space travel, as Goddard had proposed.

If the multiple charge-rocket sounds a lot like "Project Orion" (in which a starship would be propelled by a series of nuclear explosions), I should point out that this scheme involved rocket grains in a combustion chamber, rather than, if I may risk using the word, detonations. You might think of the multiple-charge rocket as the predecessor to the pulse-jet, which Goddard patented around 1930. However, the good Professor did suggest the idea of setting off explosives behind a reflector or shield in his notes in the 1930's (maybe I should have copied that?). I believe that is the essence of the Orion scheme.

In his Smithsonian monograph, Goddard calculated the size of rocket needed to send a pound to the moon he then extrapolated how much flash powder might be visible on the moon, from tests over a couple miles on earth. He calculated a rocket of tens of tons (I don't have the figures in front of me) could theoretically send it to the moon.

Anyway, all you Goddard fans should enjoy this enlightened bit of writing.

Topics of the Times

("New York Times," 13 January, 1920, p. 12, col. 5)

A Severe Strain on Credulity

As a method of sending a missile to the higher, and even highest, part of the earth's atmospheric envelope, Professor Goddard's multiple-charge rocket is a practicable, and therefore promising device. Such a rocket, too, might carry self-recording instruments, to be released at the limit of its flight, and conceivable parachutes would bring them safely to the ground. It is not obvious, however, that the instruments would return to the point of departure; indeed, it is obvious that they would not, for parachutes drift exactly as balloons do. And the rocket, or what was left of it after the last explosion, would have to be aimed with amazing skill, and in dead calm, to fall on the spot where it started.

But that is a slight inconvenience, at least from the scientific standpoint, though it might be serious enough from that of the always innocent bystander a few hundred or thousand yards away from the firing line. It is when one considers the multiple-charge rocket as a traveler to the moon that one begins to doubt and looks again, to see if the dispatch announcing the professor's purposes and hopes says that he is working under the auspices of the Smithsonian Institution. It does say so, and therefore the impulse to do more than doubt the practicability of such a device for such a purpose must be--well, controlled. Still, to be filled with uneasy wonder and express it will be safe enough, for after the rocket quits our air and really starts on its longer journey, its flight would be neither accelerated nor maintained by the explosion of the charges it then might have left. To claim that it would be is to deny a fundamental law of dynamics, and only Dr. Einstein and his chosen dozen, so few and fit, are licensed to do that.

His Plan Is Not Original

That Professor Goddard, with his "chair" in Clark College and the countenancing of the Smithsonian Institution, does not know the relation of action to reaction, and of the need to have something better than a vacuum against which to react--to say that would be absurd. Of course he only seems to lack the knowledge ladled out daily in high schools.

But there are such things as intentional mistakes or oversights, and, as it happens, Jules Verne, who also knew a thing or two in assorted sciences--and had, besides, a surprising amount of prophetic power--deliberately seems to make the same mistake that Professor Goddard seems to make. For the Frenchman, having got his travelers to

or toward the moon into the desperate fix riding a tiny satellite of the satellite, saved them from circling it forever by means of an explosion, rocket fashion, where an explosion would not have had in the slightest degree the effect of releasing them from their dreadful slavery. That was one of Verne's few scientific slips, or else it was a deliberate step aside from scientific accuracy, pardonable enough of him in a romancer, but its like is not so easily explained when made by a savant who isn't writing a novel of adventure.

All the same, if Professor Goddard's rocket attains a sufficient speed before it passes out of our atmosphere--which is a thinkable possibility--and if its aiming takes into account all of the many deflective forces that will affect its flight, it may reach the moon. That the rocket could carry enough explosive to make on impact a flash large and bright enough to be seen from earth by the biggest of our telescope--that will be believed when it is done.

In 1969, the Times retracted this editorial.

Peter Alway

<http://web.archive.org/web/20070217065558/http://it.is.rice.edu/~rickr/goddard.editorial.html>

New York Times to NASA: You're Right, Rockets DO Work in Space

By Bjorn Carey Posted 07.20.2009 at 7:29 pm

A Correction

On Jan. 13, 1920, "Topics of The Times," an editorial-page feature of The New York Times, dismissed the notion that a rocket could function in a vacuum and commented on the ideas of Robert H. Goddard, the rocket pioneer, as follows:

"That Professor Goddard, with his 'chair' in Clark College and the countenancing of the Smithsonian Institution, does not know the relation of action to reaction, and of the need to have

something better than a vacuum against which to react—to say that would be absurd. Of course he only seems to lack the knowledge ladled out daily in high schools."

Further investigation and experimentation have confirmed the findings of Isaac Newton in the 17th Century and it is now definitely established that a rocket can function in a vacuum as well as in an atmosphere. The Times regrets the error.

Oops!

The New York Times' famous retraction of a 1920 article
New York Times

On the 40th anniversary of the Apollo 11 moon landing, it seems like every news outlet worth its weight in regolith is reproducing classic content to put the historic moment in the proper content. Well, here's one Apollo-related news item, printed on July 17th, as Aldrin, Armstrong and Collins were well on their way to the Moon, that I doubt the New York Times wants to draw much attention to today: a retraction of a 1920 article which stated rocket motors couldn't work in the vacuum of space, almost fifty years after the fact.

It reads:

JULY 17, 1969: On Jan. 13, 1920, Topics of The Times, an editorial-page feature of The New York Times, dismissed the notion that a rocket could function in a vacuum and commented on the ideas of Robert H. Goddard, the rocket pioneer, as follows.

"That Professor Goddard, with his 'chair' in Clark College and the countenancing of the Smithsonian Institution, does not know the relation of action to reaction, and of the need to have something better than a vacuum against which to react -- to say that would be absurd. Of course he only seems to lack the knowledge ladled out daily in high schools." [Oh, snap!]

Further investigation and experimentation have confirmed the findings of Isaac Newton in the 17th century and it is now definitely established that a rocket can function in a vacuum as well as in an atmosphere. The Times regrets the error."

I love this, not because of how wrong the NYT turned out to be, but because of how right the editors thought they were. It's a nice reminder of how one man's ridiculed notion can turn into reality a few decades later. Take note, Robert Bigelow, Richard Branson, Elon Musk, and the like.

Unfortunately, this correction came about 24 years after Goddard's death (the cause of which was, surprisingly, not a rocket to the face) but you've got to love the idea of some editor digging this editorial up, waiting to see if Apollo 11 made it into space, and then hastily writing a correction.

The Gray Lady, however, held fast on its assertion that Orange Tang is nasty.

<http://www.popsci.com/military-aviation-amp-space/article/2009-07/new-york-times-nasa-youre-right-rockets-do-work-space>