

1/72nd Scale Goddard 1 Rocket - World's First Successful Liquid Fueled Rocket

by Jim Schubert

This model was built as part of NorthWest Scale Modelers' Museum of Flight display, "50 Years of Human Spaceflight". The Goddard 1926 rocket was of course unmanned, but of great significance to future spaceflight as the world's first successful rocket using highly energetic liquid fuel. - Tim Nelson

Early on March 14, 1926 Physics professor Robert H. Goddard, his wife Esther, his aunt Effie and Henry Sachs, his assistant from Princeton University where he taught, took his No. 1 rocket to Effie's cabbage patch. They fueled it and set it up in its launching frame. Sachs lit a wick atop the combustion chamber then lit a small burner under the oxygen tank to increase its pressure, which pressure was used to propel both the gasoline and the liquid oxygen up the pipes from the tanks to the combustion chamber. When the fuel and oxygen hit the burning wick the device took off with a great whoosh and flew into history.

It rose only 41 feet (12.5 meters) but of far greater importance than the altitude it reached was the fact that this "tractor-rocket" was the world's first successful liquid fueled rocket; the beginning of all space flight. Goddard used the awkward tractor arrangement as a quick, cheap way to get directional stability.

Esther made the, oft reproduced, pre-launch photo showing bundled up professor Goddard standing next to his creation.

This scratchbuild was made for a special display by the NorthWest Scale Modelers (NWSM) honoring the 50th anniversary of manned spaceflight in the lobby of The



Museum of Flight (TMOF) in Seattle. When display coordinator Tim Nelson gave me a drawing of this machine he opined it could probably be made from one paper clip. Well, not quite but the finished 1/72nd scale model does stand only 1-7/8 inches (25.4 mm) high. Maybe a big paper clip would do. The combustion chamber, at the very top of the stack, is a length of stainless steel surgical tubing with a Lavall nozzle turned from brass rod in my Dremel motor tool. The conic heat shield for the gasoline tank was similarly turned from styrene rod. The tank itself is two diameters of aluminum tubing. The oxygen tank is another length of stainless tubing. The fuel and oxygen pipes are black iron wire as is the launch frame. All these odds and ends of materials came from my boxes of saved scrap and parts accumulated over the last 50 years. All joints were made with alpha cyano acrylate – Super Glue.

The figure of professor Goddard was modified from a figure included in one of



Frog's old Pioneer Series of kits; I don't remember which one. I made his cap from a bit of filler and a bit of styrene sheet.



Denoumont (1)

On Thursday February 3, 2011 we installed the display in two cases in the lobby of The Museum of Flight.

Denoumont (2)

As a result of seeing photos of my model on the Wings of Peace (Yahoo) group forum Neil Gaunt, owner of Aircraft in Miniature, is preparing a photo-etched and cast white metal kit of this device, including professor Goddard. I have no idea when he will release it.

References:

1. *Rockets of the World*, by Peter Alway, (2nd edition), Saturn Press
 2. Several web sites found through Google.
NB I was also heavily influenced by the 1944 book *Rockets - the Future of Travel Beyond the Stratosphere* by Willey Ley and its references to Goddard's work.
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