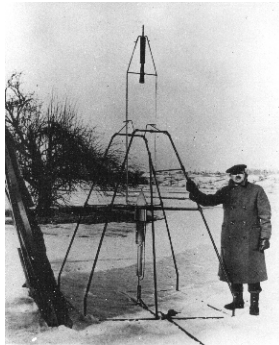




Historic Wings

1:72 Metal Kit of the



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1926 Goddard's Rocket

History, Notes and
Assembly Instructions

History

Robert Hutchings Goddard (October 5, 1882 – August 10, 1945) was a physicist and inventor. He was a professor at Worcester Clark University in Massachusetts, USA, who was fascinated by flight to the Moon, but he knew that any vehicle used to go there could not use solid fuel.

The propulsion would have to be a rocket motor and Goddard concluded that any fuel would have to be a liquid. He believed that if hydrogen could be piped into a combustion chamber sufficiently quickly and burnt with liquid oxygen, it would produce the thrust necessary to propel a rocket to the Moon.

Goddard experimented with solid fuel rockets to refine his techniques and during World War One he also invented the bazooka.

In 1920, Goddard wrote a report about his rocket engine tests called "A method of reaching extreme altitude". The New York Times severely criticised Goddard and his work. The newspaper claimed that Goddard lacked the knowledge given out to pupils in school on basic physics.

This criticism spurred Goddard into intensive research. In 1926, Goddard launched his first prototype rocket, called Nell, at his aunt's farm. When its oxygen-gasoline fuel mix was ignited, nothing happened...at first. Then the ignition caught and Nell was launched at 60 mph.

The liquid fuelled rocket was born, and when Goddard examined a captured V2 rocket after World War II he recognised several of his inventions!

Specifications

General characteristics

Length: 3.15 m (10 ft 4 in)

Width: 0.34 m (1 ft 1.25 in)

Performance

The rocket rose just 12.49m (41 ft) during a 2.5-second flight that ended 15.60m (184 ft) away in a cabbage field,

Introduction

This Historic Wings kit is made from etched brass for the main structure, with cast metal detail parts.

Brass components can be soldered together, or joined with Cyanoacrylate Adhesive (CA or SuperGlue) or 5-minute epoxy.

To remove parts from the etched fret, you can use a pair of side cutters, or put the fret on a ceramic tile or similar hard flat surface, and press down on each attaching tab with a sharp knife. If you use the 'knife & tile' option, put the attaching tab with the half-etched side of the tab downwards. Whichever method is used, it may necessary to remove the burr of the attachment tab with a needle file afterwards.

Be very careful when handling the rocket motor and fuel tank - they are very fragile.

Parts List

Cast Metal

Fuel tank 1 off

Rocket motor..... 1 off

Figure - Dr Goddard 1 off

Etched metal

Fret 1 - brass 1 off

Miscellaneous

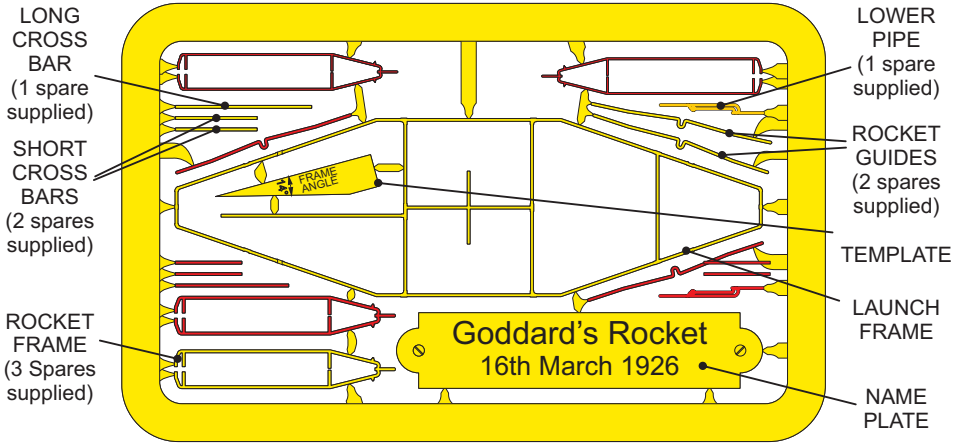
Grass matting 1 sheet

Instructions 1 set

Red insulated wire (for oxygen umbilical) 1 length

Fret 1

PARTS SHOWN IN RED ARE DUPLICATES FOR SPARES, IN CASE OF ERRORS



1 ASSEMBLY

A LAUNCH FRAME ASSEMBLY

Note: there are fold lines half-etched on the inside of the launch frame for all the bends in the structure.

- (1) Fold the two rocket guides up through 90° as shown in Figure 1. (use the template from the etched fret to set them at this angle).
- (2) Fold the two side frames up through 90° .
- (3) Fold the guide rod at the front of the frame up through 90° .
- (4) There is a short vertical section at each corner of the launch frame. Bend the upper section of the front and back of this launch frame using the template as a guide, as shown in Figure 2.
- (5) Attach the long cross bar to the launch frame, behind the guide rod.
- (6) Attach the two short bars to the sides of the launch frame.
- (7) Fold the two rocket guides as shown in Figure 3, then attach them to the launch frame.

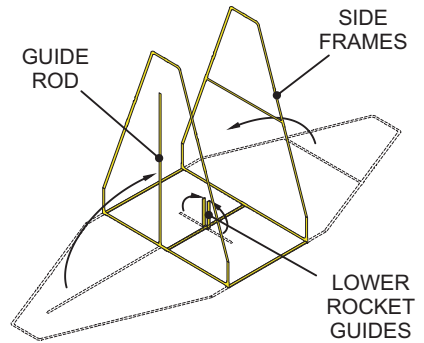


Figure 1

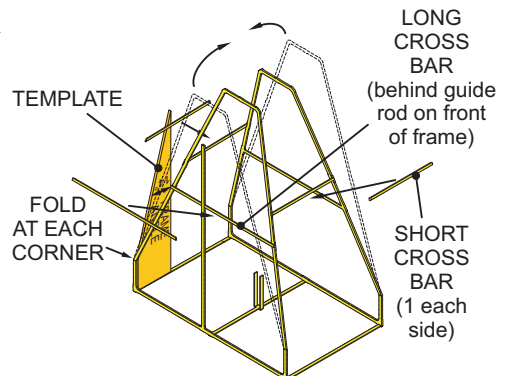


Figure 2

B ROCKET ASSEMBLY

- (1) If necessary trim the rocket frame until the rocket motor and fuel tank will fit in place.
- (2) Attach the rocket motor and fuel tank to the rocket frame.
- (3) Attach the lower pipe to the fuel tank.

2 FINISHING AND DIORAMA LAYOUT

A Paint the components.

- (1) Paint the rocket motor and fuel tank silver to represent metal.
- (2) Paint the rocket frame pale grey to represent asbestos lagging.
- (3) Paint the launching frame gloss black.

B Arrange the diorama

- (1) Mount the grass matting on the preferred base, and attach the name plate.
- (2) Put the launching frame on the grass matting, then put the rocket in the launching frame.
- (3) Put the length of red wire in place as shown in Figure 3 as the oxygen umbilical, and the figure of Dr Goddard on the grass mat.

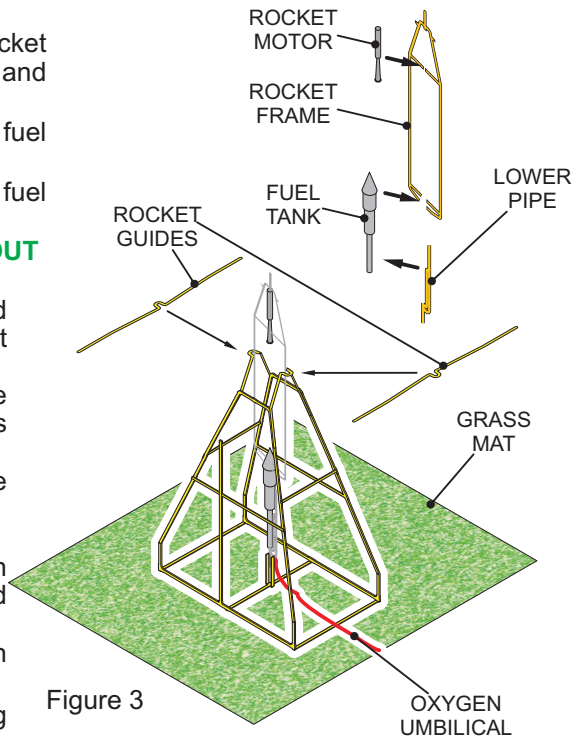
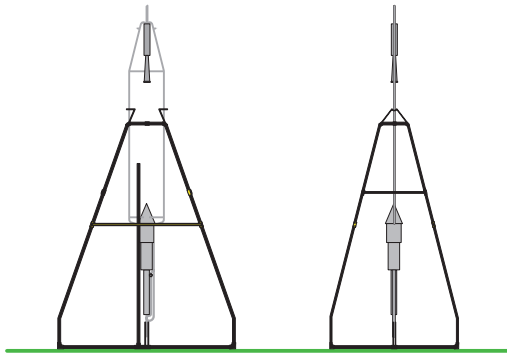


Figure 3



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The manufacturers reserve the right to alter parts; add to, or delete parts without prior notification in the interests of quality control, production, or product improvement.

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