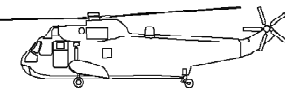


Belcher Bits BL-13: R-12 (SS-4 Sandal) Missile 1/72

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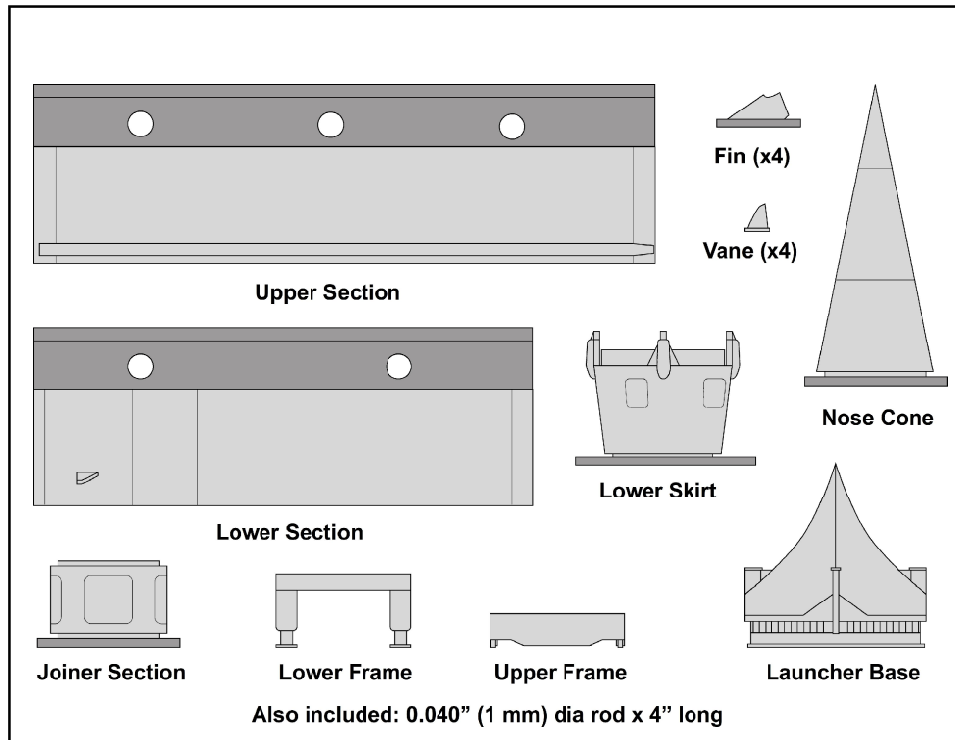


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Background

The German V-2 missile was the starting point for both US and USSR missile programs, in terms of airframe design, propulsion and launch procedure. The Americans captured the majority of V-2 missiles at the end of the war as well as a number of German engineers including Werner von Braun. The Soviets captured the rocket facilities, some missiles and a majority of the German engineers (most of whom were repatriated in the early '50s). The Soviet R-1 (NATO designation SS-1 Scunner) was a copy of the V-2, while the R-2 (SS-2 Sibling) was a stretched and improved version. The R-3 (SS-3 Shyster) was a development with an improved airframe; all were built by the Korolev design bureau. The R-12 (SS-4 Sandal) was built by the competing Yangel bureau, and in addition to airframe improvements over the R-3, used storable fuel of kerosene and nitric acid. This missile had a range of 1200 miles, could carry a 1-2 megaton warhead. It gained fame when it was deployed in Cuba in the early '60s, in response to US deployment of Jupiter IRBMs in Turkey..

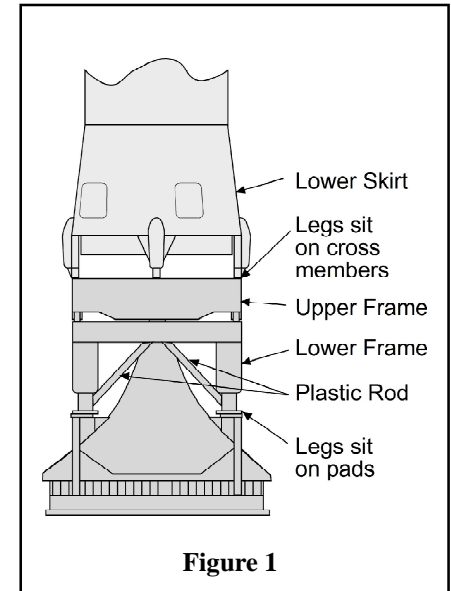
The launch stand (or table) clearly shows its roots in German V-2 design, with its portable base, blast deflector and rotating support ring. The supporting vehicles required to transport, erect, fuel and launch one of these missiles made an impressive convoy.



Launch Table Assembly

Give a quick sanding to the bottom of the Launcher Base to make sure it's flat. Clean up the flash on the Lower Frame, and cut 8 pieces of the 0.040" rod to 0.45" long. There are small pits in the bottom of the Lower Frame. Glue the plastic rod from these pits to the ends of the legs as shown in Figure 1. Glue the Lower Frame to the Launcher Base, pad to pad. Clean up and glue the Upper Frame to the Lower Frame. Done!

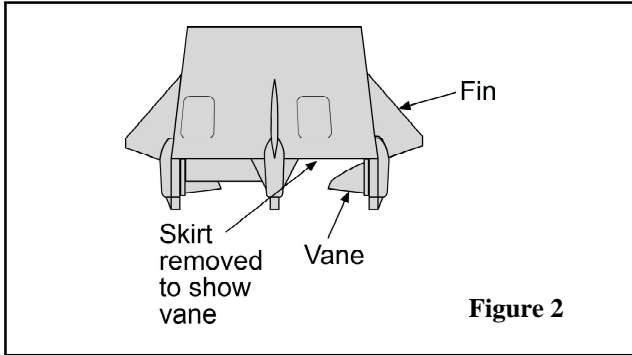
Note that the missile is solid resin and relatively heavy, and sits on the launch table on four tiny feet which sit on the mid-points of the Upper Frame. It would be a good idea to drill some small holes in the Upper Frame bars matching them with the small legs of the lower skirt, and insert some fine brass wire to hold everything together. It may also be a good idea to glue the Launcher Base onto a larger base like a wood plaque to keep everything from falling over when done.



Missile Assembly

Clean up the seam on the Lower and Upper Sections. Using a razor saw, remove the Joiner section and the Nose Cone from their base flash. Note that there is a raised disc under each. Do not completely remove this, as it serves to register these parts with the depressions in the ends of the main missile body sections. Test fit these parts together, and mark the Joiner Section because there is a right way and wrong way to fit it; the depressions in the Upper and Lower Sections are slightly different diameters. Starting with the Upper Section, note that the top has a taper on the wider of the two cable ducts. Match the Joiner Section to the bottom of the Upper Section, lining up the smaller cable duct and glue in place. Note the bottom of the Lower Section has a couple protruding exhaust vents. Glue the top of the Lower Section to the Joiner Section, again lining up the smaller cable duct. Glue on the Lower Skirt to the bottom of the Lower Section, lining up the wider cable duct with one of the legs. Glue on the Nose Cone on the top of the Upper Section.

Remove the four Vanes from their flash and glue them inside the legs of the Lower Skirt. These vanes protruded into the rocket exhaust for steering just like a V-2, except this missile had four exhaust nozzles.
Remove the four Fins and lightly sand the leading edges where they attached to the sprue. Glue these in line with the legs as shown in Figure 2.

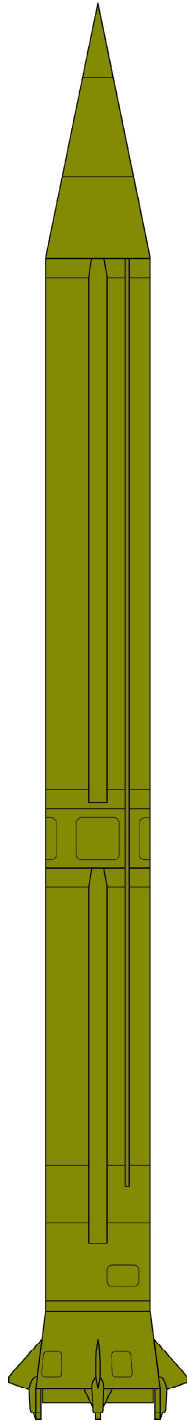


Painting

Dead easy, as far as I can tell. Apparently, operational missiles are an overall olive green, with no markings. Break out the spray bomb!

References

1. "Twelve Soviet Missiles of the Cold War, by Peter Alway, ARA Press, 2005. Excellent reference and drawings.
2. Tremendous collection of photos by Martin Trolle Mikkelsen at his website <https://www.flickr.com/photos/martintrolle/sets>. Boy, if you want photos of Russian missiles, launch sites, etc, this is the one place to go. The photo of the launch table at right is taken from this site.



The resin kit is a somewhat simplified version of the real thing, although the elements are all there. The girders and cables are to hold the missile in place on display and would not have been used with an operational missile.