

Nike Smoke Sounding Rocket



The Nike Smoke was a sounding rocket, part of a research project on the behavior of the horizontal winds in the upper atmosphere (about 75,000 ft), developed by NASA in the 1960s based on the Nike booster. The goal was to obtain more accurate data on the behavior of these winds in order to guide the design of new vehicles.

The payload is approximately 10 gallons (144 lbs.) of titanium tetrachloride (TiCl₄) contained within a 10-degree conical nose cone fabricated of 347 stainless steel. Upon ejection of the TiCl₄ into the atmosphere during flight, chlorides are formed which combine with the water vapor in the air to form droplets of hydrochloric acid. This reaction results in the formation of a persistent and reflective white smoke trail which is photographed by two cameras approximately 10-12 miles from the launch site and 90 degrees apart in azimuth.

Wind profiles are obtained by photographic triangulation techniques utilizing time-lapse photographs of the smoke trail. The Nike Smoke may be launched from a modified Nike Ajax launcher.

Status: Retired 1983.

First Launch: 1953-10-23.

Last Launch: 1977-11-19.

Number: 240 .

Payload: 70 kg (154 lb).

Thrust: 217.00 kN (48,783 lbf).

Gross mass: 709 kg (1,563 lb).

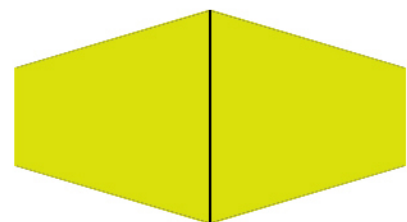
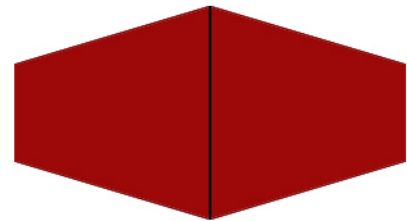
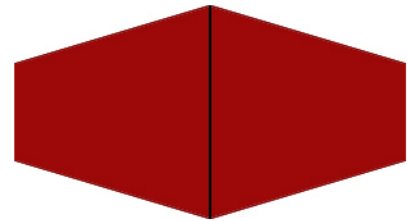
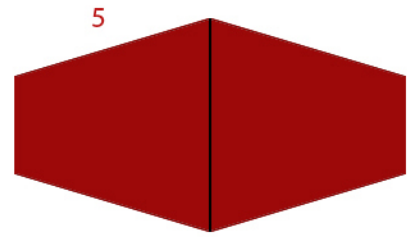
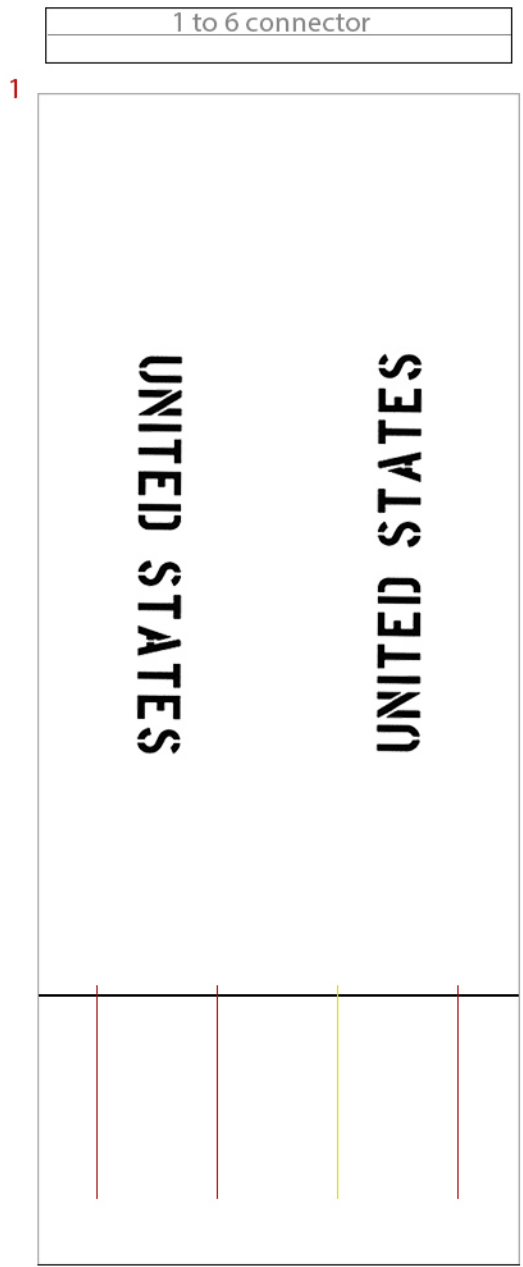
Height: 6.01 m (19.71 ft).

Diameter: 0.42 m (1.37 ft).

Span: 1.52 m (4.98 ft).

Apogee: 23 km (14 mi).

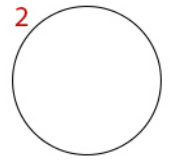
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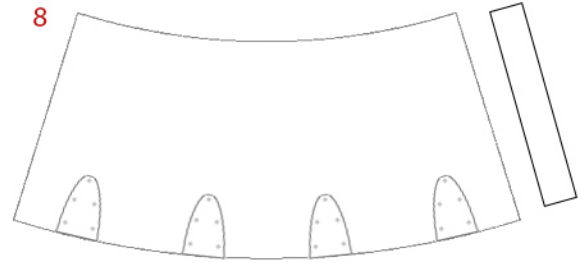
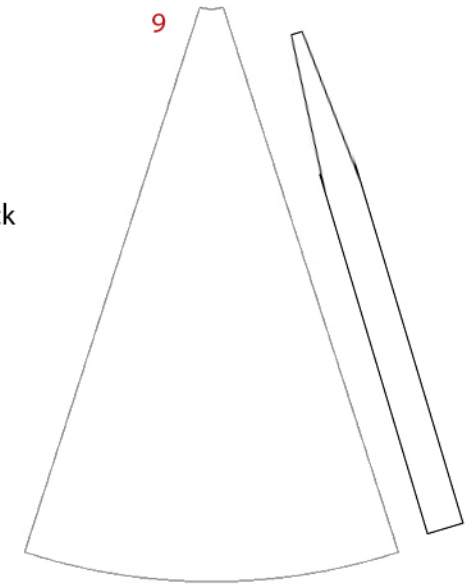
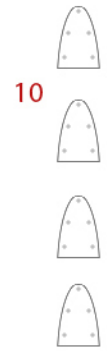
Fins, score the middle, fold-glue in half



Cut out light blue circle from 3, color backside of 4 Black, roll to a cone. Glue 4 to backside of 3 for embedded nozzle. Glue up into the bottom of the rocket.



Former, glue to cardstock



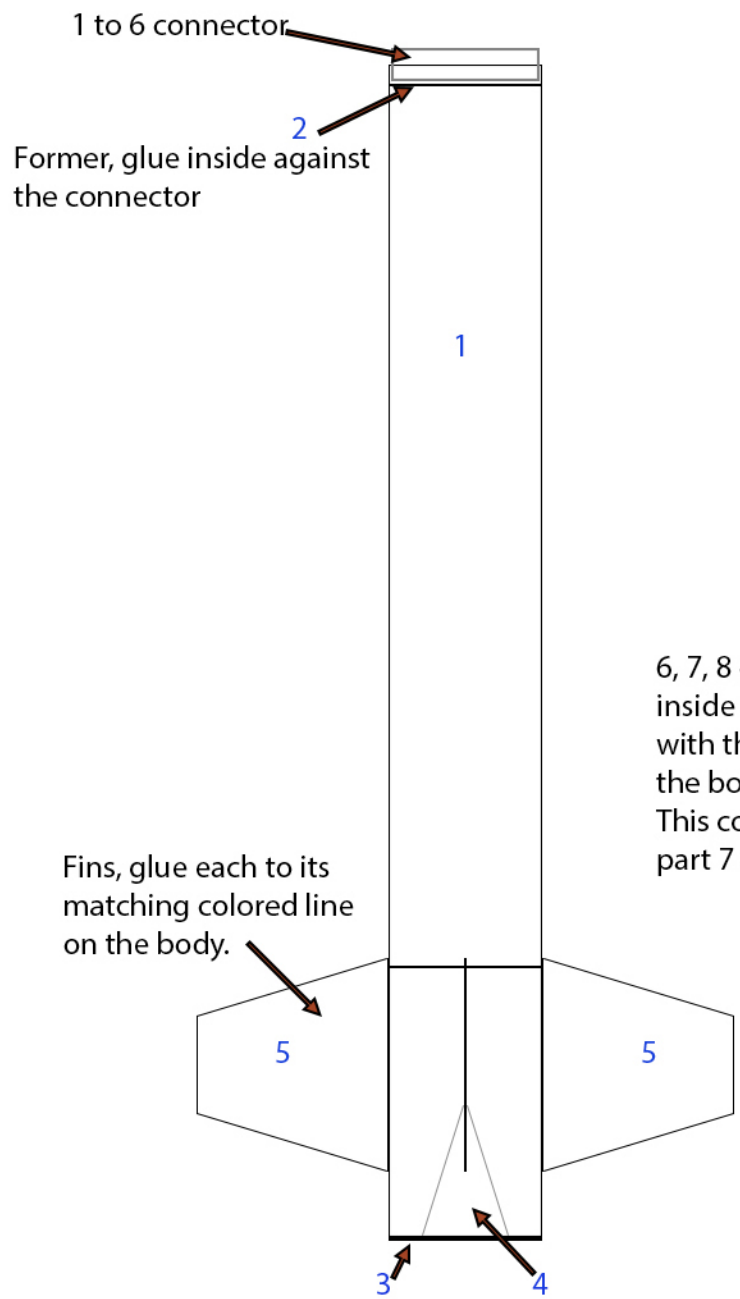
Roll to a ring, glue **6, 7, 8 connector** inside it with the small spikes at the bottom.



Nike Smoke Sounding Rocket 1/20 Scale paper Model



Keep ALL seems aligned when gluing the parts together.



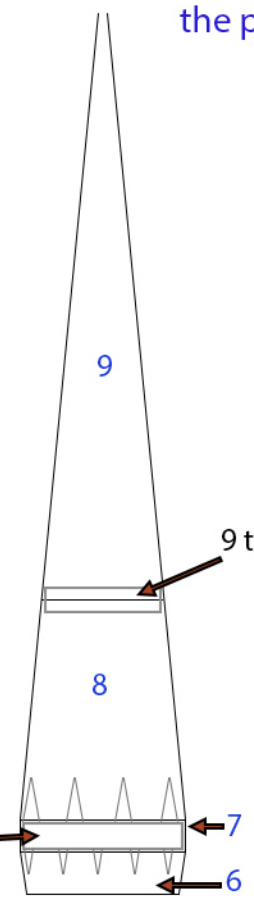
1 to 6 connector

2

Former, glue inside against the connector

Fins, glue each to its matching colored line on the body.

6, 7, 8 connector, glue inside the ring (part 7) with the smaller spikes at the bottom. This connects part 8 to part 7 and part 6 to part 7.



9 to 8 connector

Part 8 is glued on top of part 7 using the connector

7

6