

Nike Hercules (MIM-14) Missile



The Nike Hercules (initially designated SAM-A-25, and later MIM-14) was a surface-to-air missile (SAM) used by U.S. and NATO armed forces for medium- and high-altitude long-range air defense. It was normally armed with the W31 nuclear warhead, but could also be fitted with a conventional warhead for export use. Its warhead also allowed it to be used in a secondary surface-to-surface role, and the system also demonstrated its ability to hit other short-range missiles in flight.

Hercules was developed as the successor to the earlier MIM-3 Nike Ajax, to carry a nuclear warhead in order to defeat entire formations of high-altitude supersonic targets. It evolved into a much larger missile with two solid fuel stages that provided three times the range of the Ajax. Deployment began in 1958, initially at new bases, but it eventually took over many Ajax bases as well. At its peak it was deployed at over 130 bases in the US alone.

Hercules remained the US' primary heavy SAM until it began to be replaced by the higher performance and considerably more mobile MIM-104 Patriot in the 1980s. Patriot's much higher accuracy allowed it to dispense with the nuclear warhead, and Hercules was the last US SAM to use this option. The last Hercules missiles were deactivated in Europe in 1988, without ever being fired in anger.

Nuclear-armed Nike Hercules missiles were deployed in the United States, Greece, Italy, Korea and Turkey, and with Belgian, Dutch, and U.S. forces in West Germany. Conventionally armed Nike Hercules missiles also served in the United States, Germany, Denmark, Japan, Norway, and Taiwan. The first deployments in Europe began in 1959.

Soviet development of ICBMs and the de-emphasis of their bomber force decreased the value of the Hercules system. Beginning around 1965, the number of Nike batteries was reduced. Thule's air defense was reduced during 1965, and SAC air base defense during 1966, reducing the number of batteries to 112. Budgetary cuts reduced that number to 87 in 1968, and 82 in 1969. Nike Hercules was included in SALT I discussions as an ABM.

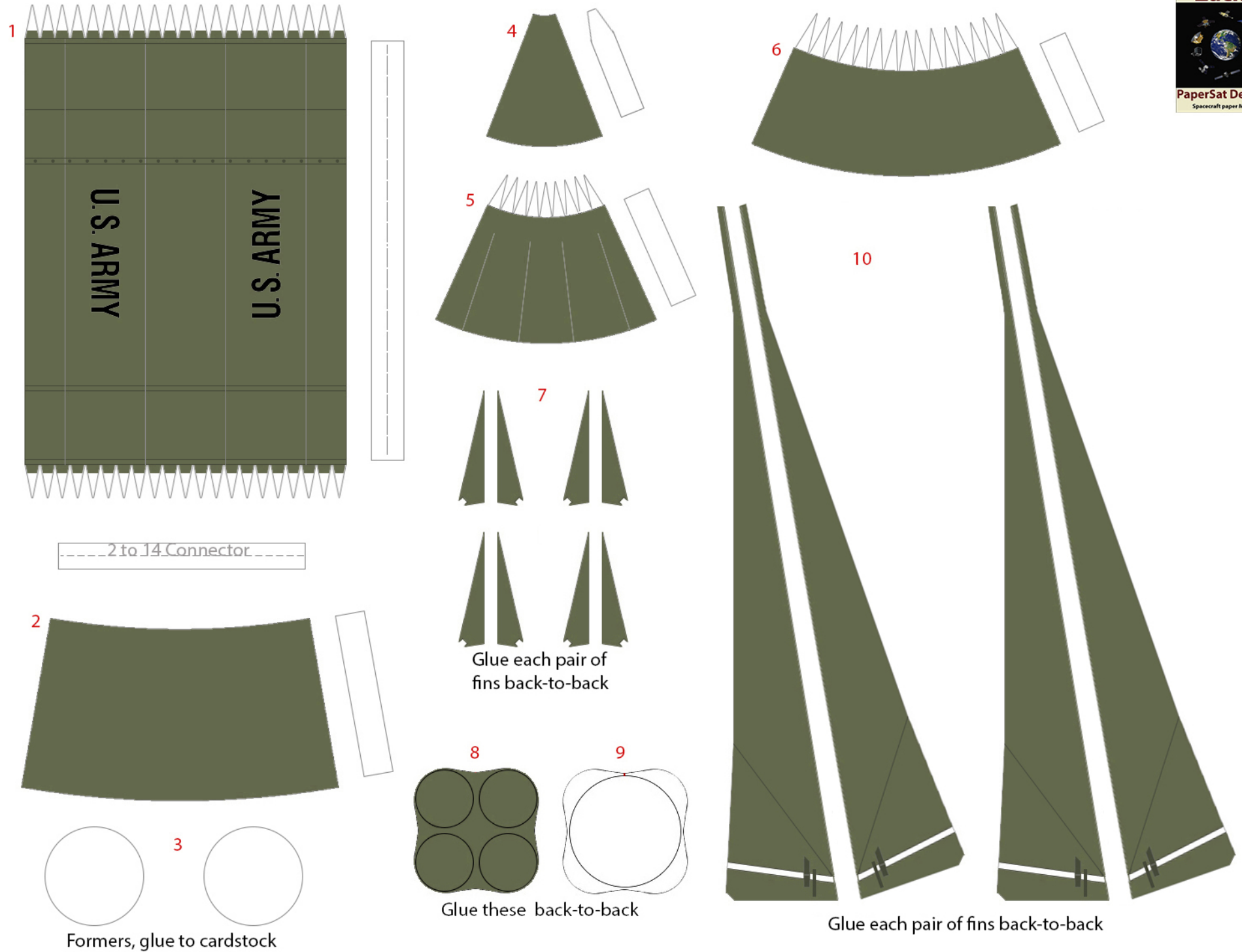
The U.S. Army continued to use Hercules as a front-line air defense weapon in Europe until 1983, when Patriot missile batteries were deployed. NATO units from West Germany, the Netherlands, Denmark, Belgium, Norway, Greece and Turkey continued to use the Hercules for high-altitude air defense until the late 1980s. With the collapse of communism in Eastern Europe, the units were deactivated in 1988. The last Hercules missile was launched in the Sardinian range of Capo San Lorenzo in Italy on November 24, 2006.

Approximately 25,000 Nike Hercules were manufactured. Early models cost about \$55,250 each, while most recent cost estimate, from Japan, was US\$3 .0 million.

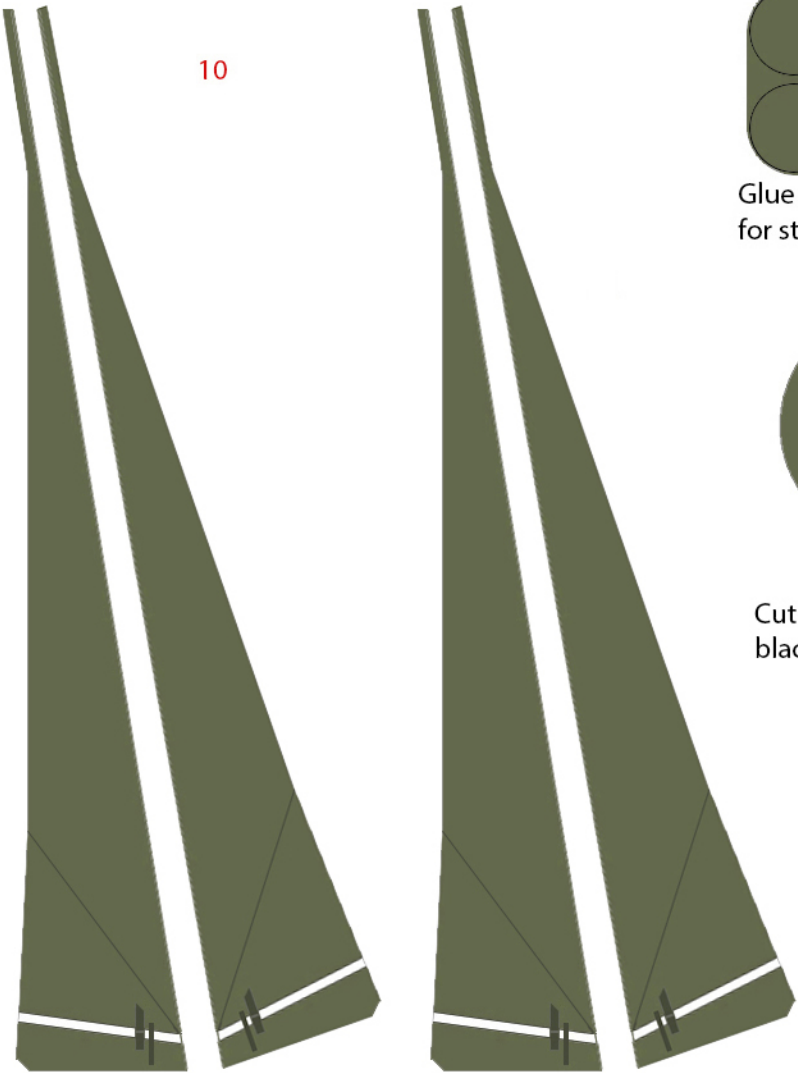
When mounted on its booster pack, the Hercules missile was 41 feet 6 inches (12.65 m) long with a wingspan of 6 feet 2 inches (1.88 m) (one side only). The upper stage alone was 24 feet 11 inches (7.59 m) long. The fuselage had a bullet-like shape (Sears-Haack body), but this was difficult to make out due to the presence of the four large delta wings running almost the entire length of the fuselage.



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10

Glue each pair of fins back-to-back

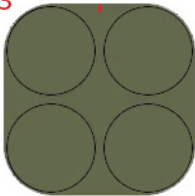
11



12

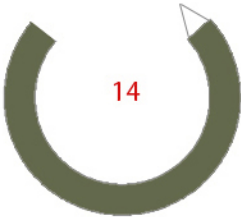
Former
Glue to
cardstock,
fits inside

13



Glue to cardstock
for strength

14



Cut out the
black areas

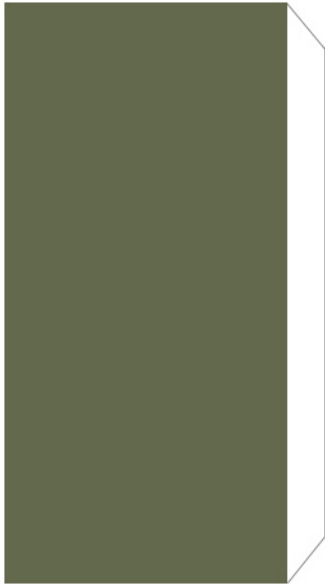
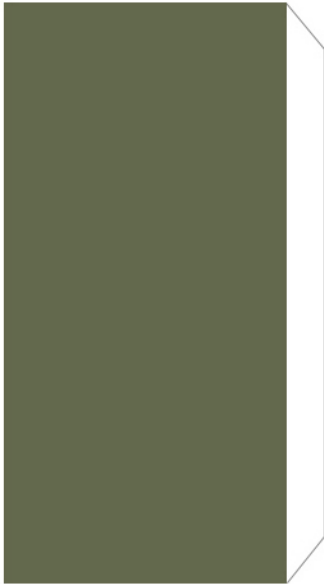
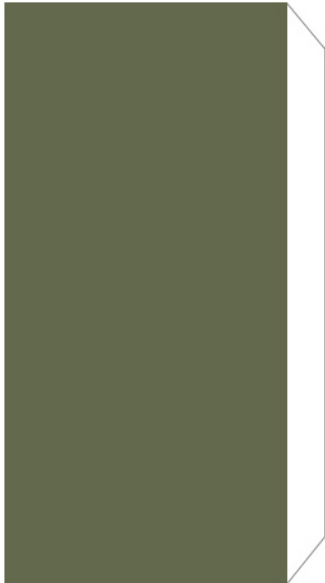
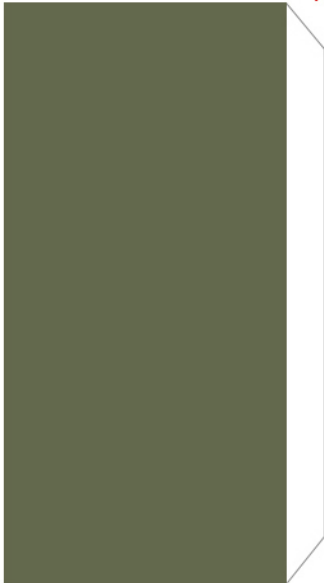
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16



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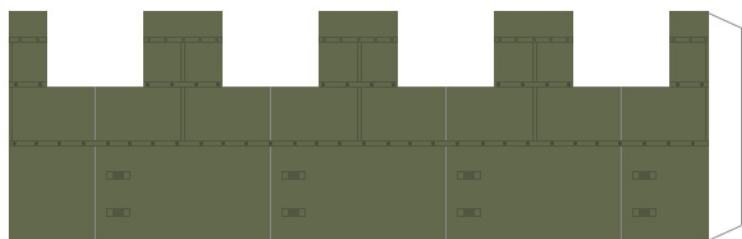


17



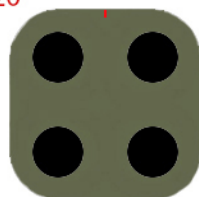
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19



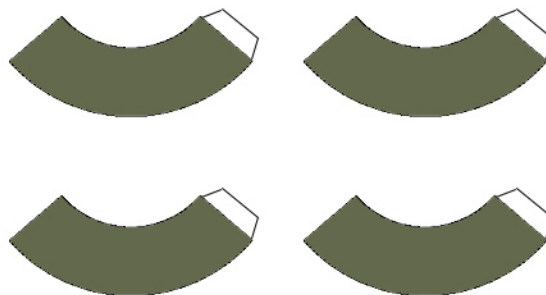
Spacer, roll into a ring

20



Glue to cardstock
for strength

21



Color back black

22

