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Minotaur I

The **Minotaur I**, or just **Minotaur** is an American expendable launch system derived from the Minuteman II missile.[1] It is used to launch small satellites for the US Government, and is a member of the Minotaur family of rockets produced by Orbital Sciences Corporation (now Northrop Grumman).[2]

Vehicle

The Minotaur I is the follow-on to the Orbital Scien
(later re-named the "Minotaur-C"[3]) launch vehicle,
the original Taurus's booster stage with a second st
Minuteman missile.[4]

Minotaur I rockets consist of the M55A1 first stage
second stage of a decommissioned Minuteman mis
Orion 50XL and Orion 38, from the Pegasus rocket,
third and fourth stages. A HAPS (Hydrazine Auxiliary
System) upper stage can also be flown if greater p
needed, or the rocket needs to be able to manoeuvr
multiple payloads.[5] It can place up to 580 kilograms (
payload into a 185-kilometer (115 mi) low Earth or
degrees of inclination.[1]

The Minotaur I is 69 feet tall and 5 feet wide.[6]

Initially Minotaur I launches are conducted from Sp
Complex 8 at the Vandenberg Air Force Base. Startin
launch of TacSat-2 in December 2006, launches have also been conducted from Pad 0B at the Mid-Atlantic Regional Spaceport on Wallops Island.[5]

Launch history

There have been twelve launches of the Minotaur I, all successful.

Minotaur I

Orbital Sciences Corporation was an American company specializing in the design, manufacture, and launch of small- and medium- class space and launch vehicle systems for commercial, military and other government customers. In 2014, Orbital merged with Alliant Techsystems to create a new company called Orbital ATK, Inc., which in turn was purchased by Northrop Grumman in 2018. The remnants of the former Orbital Sciences Corporation became a subsidiary of Northrop Grumman, known as Northrop Grumman Space Systems.

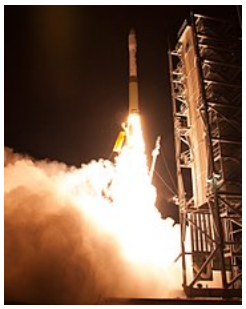
Size	
Height	19.21 metres (63.0 ft)
Diameter	1.67 metres (5 ft 6 in)
Mass	36,200 kilograms (79,800 lb)
Stages	4 or 5
Capacity	
Payload to LEO	
Mass	580 kilograms (1,280 lb)
Payload to SSO	

Mass	331 kilograms (730 lb)
Launch history	
Status	Active
Launch sites	Vandenberg SLC-8 MARS LP-0B
Total launches	12
Success(es)	12
First flight	27 January 2000
Last flight	15 June 2021
First stage – M55A1	
Powered by	1 Solid
Maximum thrust	935 kilonewtons (210,000 lb_f)
Propellant	Solid
Second stage – SR19	
Powered by	1 Solid
Maximum thrust	268 kilonewtons (60,000 lb_f)
Propellant	Solid
Third stage – Orion 50XL	
Powered by	1 Solid
Maximum thrust	118.2 kilonewtons (26,600 lb_f)
Burn time	74 seconds
Propellant	Solid
Fourth stage – Orion 38	
Powered by	1 Solid
Maximum thrust	34.8 kilonewtons (7,800 lb_f)
Burn time	68 seconds
Propellant	Solid

Minotaur I launch history

Flight	Date (UTC)	Payload	Launch pad	Trajectory	Result
1	January 27, 2000 03:03:06	JAWSat (P98-1) (FalconSat1 / ASUSat1 / OCSE / OPAL)	Vandenberg SLC-8	LEO	Success[7]

Flight	Date (UTC)	Payload	Launch pad	Trajectory	Result
2	July 19, 2000 20:09:00	MightySat II.1 (Sindri, P99-1) / MEMS 2A / MEMS 2B	Vandenberg SLC-8	LEO	Success[8]
3	April 11, 2005 13:35:00	XSS-11	 Vandenberg SLC-8	LEO	Success[9]
4	September 23, 2005 02:24:00	Streak (STP-R1)	 Vandenberg SLC-8	LEO	Success[10]
5	April 15, 2006 01:40:00	COSMIC (FORMOSAT-3)	Vandenberg SLC-8	LEO	Success[11]
6	December 16, 2006 12:00	TacSat-2 / GeneSat-1	 MARS LP-0B	LEO	Success[12]
7	April 24, 2007 06:48	NFIRE	 MARS LP-0B	LEO	Success[13]

Flight	Date (UTC)	Payload	Launch pad	Trajectory	Result
8	May 19, 2009 23:55	TacSat-3	 MARS LP-0B	LEO	Success[14]
9	February 6, 2011 12:26	USA-225 (NROL-66)	 Vandenberg SLC-8	LEO	Success[15]
10	June 30, 2011 03:09	ORS-1	 MARS LP-0B	LEO	Success[16]
11	November 20, 2013 01:15	ORS-3,[17] STPSat-3 and 28 CubeSat satellites[18]	 MARS LP-0B	LEO	Success[19]
12	June 15, 2021 13:35	NROL-111	MARS LP-0B	LEO	Success[20]

See also

- Comparison of orbital launchers families

- Comparison of orbital launch systems

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