



**Federal Aviation  
Administration**

## **Office of Commercial Space Transportation**

# **Financial Responsibility Requirements as Determined by the Maximum Probable Loss (MPL) Process**

**As of**

**April 28, 2015**

## ACTIVE LAUNCH LICENSES

Vehicle Company	Year	Launch Site	U.S. Government Property (\$M)	Third Party (\$M)
Antares Orbital Sciences Corp	2013	WFF	Pre-flight: \$1	Pre-flight: \$9
			Flight: \$44	Flight: \$34
Atlas V 401 Lockheed Martin	2007	CCAFS	Pre-flight: \$7	Pre-flight: \$6
			Flight: \$21	Flight: \$45
Atlas V 411 Lockheed Martin	2006	CCAFS	Pre-flight: \$7	Pre-flight: \$6
			Flight: \$100	Flight: 112.5
Atlas V 421 Lockheed Martin	2006	CCAFS	Pre-flight: \$7	Pre-flight: \$6
			Flight: \$100	Flight: \$193.5
Atlas V 431 Lockheed Martin	2006	CCAFS	Pre-flight: \$7	Pre-flight: \$6
			Flight: \$100	Flight: \$261
Atlas V 521 Lockheed Martin	2006	CCAFS	Pre-flight: \$7	Pre-flight: \$6
			Flight: \$100	Flight: \$193.5
Atlas V 401 Lockheed Martin	2011	VAFB	Pre-flight: \$2	Pre-flight: \$9
			Flight: \$21	Flight: \$365
Delta IV M or M+ Boeing Launch Services	2006	CCAFS	Pre-flight: \$21.5	Pre-flight: \$3
			Flight: \$43	Flight: \$261
Dragon Pad Abort Space Exploration Technologies	2014	CCAFB	Pre-flight: \$1	Pre-flight: \$12
			Flight: \$10	Flight: \$3
Falcon 9 Space Exploration Technologies	2014	CCAFS	Pre-flight: \$13	Pre-flight: 12
			Flight: \$100	Flight: \$45
Falcon 9 Space Exploration Technologies	2013	VAFB	Pre-flight: \$1	Pre-flight: \$9
			Flight: \$17	Flight: \$90
Pegasus Orbital Sciences	1997	CCAFS	Flight: \$17	Flight: \$90
			Flight: \$1	Flight: \$37.5

Pegasus Orbital Sciences	1997	WFF	Pre-flight: \$1 Flight: \$1	Pre-flight: \$10 Flight: \$43.5
STIG B Armadillo Aerospace	2012	Spaceport America	Pre-flight: \$0 Flight: \$0	Pre-flight: \$3 Flight: \$3.3
Pegasus Orbital Sciences	2008	KMR	Pre-flight: NA Flight: \$1	Pre-flight: NA Flight: \$57
STIG B Armadillo Aerospace	2012	Spaceport America	Pre-flight: \$0 Flight: \$0	Pre-flight: \$3 Flight: \$3.3
Zenith – 3SL Sea Launch	2011	Pacific Ocean	Pre-flight: NA Flight: \$Zero	Pre-flight: NA Flight: \$10

### ACTIVE REENTRY LICENSES

Dragon (Reentry Vehicle) Space Exploration Technologies	2011	Pacific Reentry	Reentry \$33
ORION (Reentry Vehicle) Lockheed Martin	2014	Pacific Reentry	Reentry \$18.75

### ACTIVE PERMITS

Vehicle Company	Year	Launch Site	U.S. Government Property (\$M)	Third Party (\$M)
Falcon 9R Space Exploration Technologies	2014	McGregor Texas	Pre-flight: \$0 Flight: \$0	Pre-flight: \$0 Flight: \$3
SpaceShipTwo Scaled Composites	2013	Mojave, California	Pre-flight: \$0 Flight: \$0	Pre-flight: \$0 Flight: \$9
Grasshopper Space Exploration Technologies	2012	McGregor Texas	Pre-flight: \$0 Flight: \$0	Pre-flight: \$0 Flight: \$3

## EXPIRED LICENSES

### Orbital Launches--Launch Operator

Vehicle Company	Year	Launch Site	U.S. Government Property (\$M)	Third Party (\$M)
Atlas I Lockheed Martin	1989	CCAFS	Pre-flight: \$60 Flight: \$75	Pre-flight: \$30 Flight: \$164
Atlas II/IIA Lockheed Martin	2000	CCAFS	Pre-flight: \$44 Flight: \$53	Pre-flight: \$45 Flight: \$113
Atlas IIAS Lockheed Martin	2000	CCAFS	Pre-flight: \$55 Flight: \$78	Pre-flight: \$45 Flight: \$135
Atlas IIIA & IIIB Lockheed Martin	2000	CCAFS	Pre-flight: \$44 Flight: \$53	Pre-flight: \$30 Flight: \$149
Delta II Boeing Launch Services	2005	VAFB	Pre-flight: \$68.6 Flight: \$79.6	Pre-flight: \$10 Flight: \$48.8
Delta II Boeing Launch Services	2006	CCAFS	Pre-flight: \$51 Flight: \$85	Pre-flight: \$24 Flight: \$76.5
Delta IV Heavy Boeing Launch Services	2013	CCAFS	Pre-flight: \$25 Flight: \$50	Pre-flight: \$6 Flight: \$56
Athena-1 Lockheed Martin	1998	VAFB	Pre-flight: \$10 Flight: \$27	Pre-flight: \$10 Flight: \$40
Athena-2 Lockheed Martin	1998	VAFB	Pre-flight: \$20 Flight: \$10	Pre-flight: \$10 Flight: \$109

## EXPIRED LICENSES

### Orbital Launches--Launch Specific

Vehicle Company	Year	Launch Site	U.S. Government Property (\$M)	Third Party (\$M)
Conestoga EER Systems	1994	WFF	\$73.5	\$13
Conestoga EER Systems	1995	WFF	\$88	\$13
Athena-1 Lockheed Martin	1996	VAFB	\$27	\$117
Athena-1 Lockheed Martin	1997	SFA	\$32	\$21
Athena-2 Lockheed Martin	1997	SFA	\$81.2	\$36
Pegasus Orbital Sciences	1992	CCAFS	\$15	\$15
Pegasus XL Orbital Sciences	1997	Spain	\$Zero	\$48
Scout LTV	1990	WFF	\$21.6	\$10
Scout LTV	1990	VAFB	\$1.6	\$10
Titan Lockheed Martin	1989	CCAFS	\$80	\$215
Falcon 1 Space Exploration Technologies	2005	Pacific RTS	Pre-flight: \$1	Pre-flight: \$6
			Flight: \$ 1	Flight: \$9

## EXPIRED LICENSES

### Sub-Orbital Launches--Launch Specific

Vehicle Company	Year	Launch Site	U.S. Government Property (\$M)	Third Party (\$M)
Black Brant IX Conatec	1988	WSMR	\$1	\$10
Prospector Orbital Sciences	1990	CCAFS	\$1	\$12.5
SMLV AMROC	1989	VAFB	\$1	\$12
Starfire SSI	1989	WSMR	\$1	\$10
Starfire EER Systems	1992	WSMR	\$2.5	\$10
Starfire Black Brant Class EER Systems	1994	WSMR	\$3	\$10
Talos Castor I Orbital Sciences	1991	KTF	\$0.3	\$10
SASSY Flea Society for Amateur Scientists	2000	VAFB	\$Zero	\$3
SpaceShipOne	2004	Mojave	Pre-flight: \$Zero	Pre-flight: \$Zero
Scaled Composites			Flight: \$Zero	Flight: \$3.1
Tachyon Interorbital Systems	2000	Western Range	\$Zero	\$0.250
Terrier Orion	2001	WTR	Pre-flight: \$Zero	Pre-flight: \$Zero
Astrotech			Flight: \$0.140	Flight: \$4.5

### Sub-Orbital Launches--Launch Operator

Vehicle Company	Year	Launch Site	U.S. Government Property (\$M)	Third Party (\$M)
Aries	1991	WSMR	Pre-flight: \$1	Pre-flight: \$10
Orbital Sciences			Flight: \$1	Flight: \$10

**EXPIRED LICENSES**

**REENTRY LICENSES**

ORION (Reentry Vehicle) Lockheed Martin	2014	Pacific Reentry		Reentry	\$18.75
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## NOTES

For all tables, the date shown in the Year column is the date of the MPL study. The dollar values shown for U.S. Government property and Third-party losses are as assigned in the applicable license orders. Those values are periodically and routinely reassessed. During such a reassessment, if the MPL values are confirmed to remain valid, the report's date is not changed. If the values are revised and new license orders issued, the date of the report will also be revised.

Past practice for launch specific licenses was to not discriminate between pre-flight and flight phases for the purposes of establishing financial responsibility requirements based on the MPL. Thus, assigned dollar values for U.S. Government and Third-party losses were the higher of the values determined for each phase – pre-flight and flight. This will no longer be the case for future launch specific licenses in that MPL values will be assigned for both phases of the two loss categories. In addition, because the FAA continues to refine its MPL process, past determinations may not be a good guide to future determinations.

## ACRONYMS

AMROC	American Rocket Corporation
CCAFS	Cape Canaveral Air Force Station, Florida
KMR	Kwajalein Missile Range, Pacific Ocean
RTS	Formerly, Kwajalein Missile Range, Pacific Ocean
KTF	Kauai Test Facility, Hawaii
LTV	Ling Temco Vought
SFA	Spaceport Florida
SMLV	Single Module Launch Vehicle
SSI	Space Services, Incorporated
VAFB	Vandenberg Air Force Base, California
WFF	Wallops Flight Facility, Virginia
WSMR	White Sands Missile Range, New Mexico
WTR	Woomera Test Range, Australia