



**Federal Aviation
Administration**

Office of Commercial Space Transportation

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

as of

January 9, 2012

MPL Values

For all tables, the date shown in the **Year of Analysis** column is the date of the maximum probable loss (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 not to differentiate 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.

ACRONYMS

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
VAFB	Vandenberg Air Force Base, California
WFF	Wallops Flight Facility, Virginia
WSMR	White Sands Missile Range, New Mexico
WTR	Woomera Test Range, Australia

ACTIVE LICENSES

Orbital Launches – Launch Operator Licenses

Company	Vehicle	Launch Site	US Government Property (\$M)		Third Party (\$M)		Year of Analysis
			<u>Pre-Flight</u>	<u>Flight</u>	<u>Pre-Flight</u>	<u>Flight</u>	
Lockheed Martin	Atlas V	VAFB	\$ 2.3	\$ 21	\$ 9	\$ 36	2011
Orbital Sciences Corp.	Antares	WFF	\$ 1	\$ 44	\$ 9	\$ 13.5	2011
Orbital Sciences Corp.	Pegasus	RTS	NA	\$ 1	NA	\$ 57	2008
Lockheed Martin	Atlas V 401	CCAFS	\$ 7	\$ 21	\$ 6	\$ 45	2006
Lockheed Martin	Atlas V 521	CCAFS	\$ 7	\$ 100	\$ 6	\$ 193.5	2006
Lockheed Martin	Atlas V 431	CCAFS	\$ 7	\$ 100	\$ 6	\$ 261	2006
Lockheed Martin	Atlas V 421	CCAFS	\$ 7	\$ 100	\$ 6	\$193.5	2006
Lockheed Martin	Atlas V 411	CCAFS	\$ 7	\$ 100	\$ 6	\$ 112.5	2006
Boeing Launch Services	Delta II	CCAFS	\$ 51	\$ 85	\$ 24	\$ 76.5	2006
Boeing Launch Services	Delta IVM or M+	CCAFS	\$ 25	\$ 50	\$ 6	\$ 261	2006
Boeing Launch Services	Delta II	VAFB	\$ 68.6	\$ 79.6	\$ 10	\$ 48.8	2005
Energia Logistics	Zenit-3SL	Pacific Ocean	\$ 1	\$ 44	\$ 9	\$ 13.5	2000

ACTIVE LICENSES

Orbital Launches – Launch Operator Licenses

Company	Vehicle	Launch Site	US Government Property (\$M)		Third Party (\$M)		Year of Analysis
			<u>Pre-Flight</u>	<u>Flight</u>	<u>Pre-Flight</u>	<u>Flight</u>	
Orbital Sciences Corp.	Pegasus	VAFB	\$ 27	\$ 1	\$ 10	\$ 37	1998
Orbital Sciences Corp.	Pegasus	CCAFS	\$ 1	\$ 1	\$ 10	\$ 37.5	1997
Orbital Sciences Corp.	Pegasus	WFF	\$ 1	\$ 1	\$ 10	\$ 40	1996

Reentry – Specific

Space Exploration Technologies	Dragon	Pacific Ocean	NA	\$ 0	NA	\$ 33	2011
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INACTIVE OR EXPIRED LICENSES

Orbital Launches – Launch Operator Licenses

Company	Vehicle	Launch Site	US Government Property (\$M)		Third Party (\$M)		Year of Analysis
			<u>Pre-Flight</u>	<u>Flight</u>	<u>Pre-Flight</u>	<u>Flight</u>	
Lockheed Martin	Atlas IIAS	CCAFS	\$ 55	\$ 78	\$ 45	\$135	2000
Lockheed Martin	Atlas IIIA/IIIB	CCAFS	\$ 44	\$ 53	\$ 30	\$149	2000
Lockheed Martin	Atlas II/IIA	CCAFS	\$ 44	\$ 53	\$ 45	\$113	2000
McDonnell Douglas	Delta III	CCAFS	\$ 29	\$ 56	\$ 24	\$126	2000
Lockheed Martin	Athena 1	VAFB	\$ 10	\$ 27	\$ 10	\$ 40	1998
Lockheed Martin	Athena 2	VAFB	\$ 20	\$ 10	\$ 10	\$109	1998
Lockheed Martin	Atlas I	CCAFS	\$ 60	\$ 75	\$ 30	\$164	1989

INACTIVE OR EXPIRED LICENSES

Orbital Launches – Launch Specific Licenses

Company	Vehicle	Launch Site	US Government Property (\$M)		Third Party (\$M)		Year of Analysis
			Pre-Flight	Flight	Pre-Flight	Flight	
Space Exploration Technologies	Falcon 9	CCAFS	\$ 13	\$100	\$12	\$ 36	2010
Space Exploration Technologies	Falcon 1	RTS	\$ 1	\$ 1	\$ 6	\$ 9	2005
Orbital Sciences Corp.	Pegasus XL	Spain	NA	\$ 0	NA	\$ 48	1997
Lockheed Martin	Athena 1	SFA	NA	\$ 32	NA	\$ 21	1997
Lockheed Martin	Athena 2	SFA	NA	\$ 81.2	NA	\$ 36	1997
Lockheed Martin	Athena 1	VAFB	NA	\$ 27	NA	\$117	1996
EER Systems	Conestoga	WFF	NA	\$ 88	NA	\$ 13	1995
EER Systems	Conestoga	WFF	NA	\$ 73.5	NA	\$ 13	1994
McDonnell Douglas	Delta 7920-10	VAFB	NA	\$ 48.8	NA	\$ 41	1993
Orbital Sciences Corp.	Pegasus	CCAFS	NA	\$ 15	NA	\$ 15	1992
LTV	Scout	WFF	NA	\$ 21.6	NA	\$ 10	1990
LTV	Scout	VAFB	NA	\$ 1.6	NA	\$ 10	1990
Lockheed Martin	Titan	CCAFS	NA	\$ 80	NA	\$215	1989

INACTIVE OR EXPIRED LICENSES

Sub-Orbital Launches – Launch Specific Licenses

Company	Vehicle	Launch Site	US Government Property (\$M)		Third Party (\$M)		Year of Analysis
			Pre-Flight	Flight	Pre-Flight	Flight	
Scaled Composites	SpaceShipOne	Mojave	\$0	\$0	\$ 0	\$ 3.1	2004
Astrotech	Terrier Orion	WTR	\$0	\$0.140	\$ 0	\$ 4.5	2001
Interorbital Systems	Tachyon	Pacific Ocean	NA	\$0	NA	\$ 0.250	2000
Society for Amateur Scientists	SASSY Flea	VAFB	NA	\$0	NA	\$ 3	2000
EER Systems	Starfire (Black Brant Class)	WSMR	NA	\$3	NA	\$10	1994
EER Systems	Starfire	WSMR	NA	\$2.5	NA	\$10	1992
Orbital Sciences Corp.	Talos Castor 1	KTF	NA	\$0.3	NA	\$10	1991
Orbital Sciences Corp.	Prospector	CCAFS	NA	\$1	NA	\$12.5	1990
Space Services, Inc.	Starfire	WSMR	NA	\$1	NA	\$10	1989
American Rocket Corp.	SMLV	VAFB	NA	\$1	NA	\$12	1989
Conatec	Black Brant IX	WSMR	NA	\$1	NA	\$10	1988

Sub-Orbital Launches – Launch Operator Licenses

Orbital Sciences Corp.	Aries	WSMR	\$1	\$1	\$10	\$10	1991
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