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# Commercial Space Transportation License

License Number: LLO 04-069 (Rev 1)

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## ORBITAL SCIENCES CORPORATION

is authorized, subject to the provisions of 49 USC Subtitle IX, ch. 701, and the orders, rules, and regulations issued under it, to conduct launches.

General. Orbital Sciences Corporation is authorized to conduct flights of Pegasus launch vehicles from the Ronald Reagan Ballistic Missile Test Site (RTS) at Kwajalein Atoll, Marshall Islands, as specified in license orders issued by the Office.

This license is granted subject to the terms, conditions, and limitations set forth in licensing orders A, B, C, and D, and any subsequent orders issued by the Associate Administrator for Commercial Space Transportation.

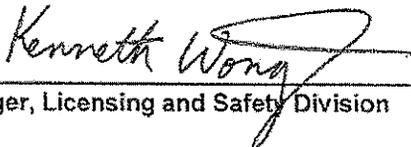
The licensee shall at all times conduct its operations in accordance with the regulations prescribed by the Associate Administrator for Commercial Space Transportation for the activities authorized by this license.



US Department  
of Transportation  
Federal Aviation  
Administration

800 Independence Ave., S.W.  
Washington, D.C. 20591

Issued On: July 14, 2004  
Effective On: July 23, 2004  
Rev 1 Issued On: March 19, 2008  
Effective On: March 19, 2008

  
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Manager, Licensing and Safety Division

OFFICE OF  
COMMERCIAL SPACE TRANSPORTATION  
LICENSE ORDER REGARDING

**LAUNCHES**

AUTHORIZED BY LICENSE NO. LLO 04-069  
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (OSC) under 49 U.S.C. Subtitle IX, chapter 701, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 04-069 issued on July 14, 2004, by the Office of Commercial Space Transportation (Office), authorizing OSC to conduct space launches; and prescribes as conditions to License No. LLO 04-069 certain requirements applicable to those launches.
3. Definitions: For purposes of License No. LLO 04-069 and any orders issued by the Office pertaining to activities covered by License No. LLO 04-069:
  - (a) "Launch" shall mean flight.
  - (b) "Flight" shall mean the flight of Pegasus launch vehicles and payloads to orbital destinations, on Pegasus flight azimuths, as specified in License Order No. LLO 04-069B (Rev 1) issued concurrently by the Office, commencing upon take-off of the L-1011 carrier aircraft from RTS for aircraft flight to the designated release area for purposes of releasing a Pegasus launch vehicle. For the Pegasus launch vehicle, a nominal flight is concluded upon safing of Pegasus launch vehicle stages or components that reach earth orbit following separation of the payload. For the L-1011 carrier aircraft, a nominal flight is concluded upon the release of the Pegasus launch vehicle. In the event of an aborted attempt to release the Pegasus launch vehicle following the take-

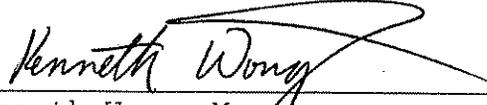
License Order No. LLO 04-069A (Rev 2)

off of the L-1011, a flight attempt is completed when the L-1011 aircraft lands at RTS or an emergency divert facility with the Pegasus still attached.

- (c) For purposes of License No. LLO 04-069, "take-off" of the L-1011 carrier aircraft is deemed to commence upon roll forward of the carrier aircraft immediately following removal of the Pegasus safe and arm pins.
4. License Term: The term of License No. LLO 04-069 authorizing OSC to conduct commercial space launches is five (5) years from July 23, 2009.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

By:

  
Kenneth Wong, Manager  
Licensing and Safety Division

Issued: July 6, 2009

Effective: July 23, 2009

**Revision History:**

Original License Order Issued - July 14, 2004

Revision 1 - Issued February 26, 2008

- 1) In paragraph 2, replaced "amends" with "modifies" and "concurrently" with "on July 14, 2004."
- 2) Removed "and (ii) pre-flight ground operations, as defined in this section" from paragraph 3(a) and paragraph 3(c), and renumber paragraph 3(d) is 3(c).
- 3) Eliminate paragraphs 4 through 12.
- 4) Renumber paragraph 13 as paragraph 4 and replace "the effective date of this license" with "July 23, 2004."
- 5) Removed "commercial space" in all instances preceding "launch" or flight.
- 6) Replaced "shall be deemed" with "is" for the sake of plain English.

Revision 2 - Issued July 6, 2009

- 1) Replaced "Associate Administrator for" with "Office of" prior to all the name Commercial Space Transportation
- 2) Redesignated License Order No. LLO 04-069A (Rev 1) to "(Rev 2)"
- 3) In paragraph 4, replaced "2004" with "2009"

ASSOCIATE ADMINISTRATOR  
FOR COMMERCIAL SPACE TRANSPORTATION  
LICENSE ORDER REGARDING

FLIGHT

AUTHORIZED BY LICENSE NO. LLO 04-069  
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (OSC) under 49 U.S.C. Subtitle IX, chapter 701, and 14 C.F.R. Ch. III.
2. Purpose: This Order amends License No. LLO 04-069 issued on July 14, 2004, by the Associate Administrator for Commercial Space Transportation (Office), authorizing OSC to conduct launches; and prescribes as conditions to License No. LLO 04-069 certain requirements applicable to the authorization to conduct flights.
3. Authorization: OSC is authorized to conduct flights:
  - (a) From RTS, Kwajalein Atoll, Marshall Islands;
  - (b) On Pegasus flight azimuths from 80 to 165 degrees, inclusive;
  - (c) Using Standard Pegasus, Standard Pegasus with Hydrazine Auxiliary Propulsion System (HAPS), Pegasus XL and Pegasus XL with HAPS launch vehicles, in combination with the Federal Aviation Administration certificated L-1011 aircraft for aircraft flight to the designated release area for purposes of releasing the Pegasus launch vehicle;
  - (d) Transporting (i) U.S. Government payloads to any orbit, and (ii) communications, remote sensing and scientific research, and Celestis payloads designed to operate in low earth orbit (specifically, apogees less than 3,000 nautical miles and perigees between 100 and 500 nautical miles); and

- (e) According to the launch vehicle, launch vehicle systems, and equipment designs and the safety management program including organization, personnel, functions and procedures represented or referenced in the OSC application as of the date of this Order, and any modifications to the license application approved by the Office, in writing.

ASSOCIATE ADMINISTRATOR FOR COMMERCIAL SPACE TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong  
Kenneth Wong, Manager  
Licensing and Safety Division

Issued: March 19, 2007

Effective: March 19, 2007

**Revision History:**

Original License Order Issued - July 14, 2004

Revision 1 - Issued March 19, 2008

- 1) In paragraph 2, replaced "amends" with "modifies" and "concurrently" with "on July 14, 2004."
- 2) From paragraph 3 (a), removed "For the Pegasus launch vehicle, a nominal commercial space flight shall be deemed concluded upon safing of Pegasus launch vehicle stages or components that reach earth orbit following separation of the payload. For the L-1011 carrier aircraft, a nominal commercial space flight shall be deemed concluded upon the release of the Pegasus launch vehicle. In the event of an aborted attempt to release the Pegasus launch vehicle following the take-off of the L-1011, a commercial space flight attempt will be deemed completed when the L-1011 aircraft lands at RTS or an emergency divert facility with the Pegasus still attached." This text is redundant with that in paragraph 3(b) of License Order No. LLO 04-069A.
- 3) Corrected the second (c) under paragraph 3 to (d).
- 4) Eliminate paragraphs 4 through 8.
- 5) Removed "commercial space" in all instances preceding "launch" or "flight."

License Order No. LLO 04-069B (Rev 1)

- 6) Replaced "shall be deemed" with "is" for the sake of plain English.
- 7) Reorder (a), (b), and (c) under paragraph 3.

ASSOCIATE ADMINISTRATOR  
FOR COMMERCIAL SPACE TRANSPORTATION  
LICENSE ORDER REGARDING

**PRE-FLIGHT GROUND OPERATIONS**

AUTHORIZED BY LICENSE NO. LLO 04-069  
ISSUED TO

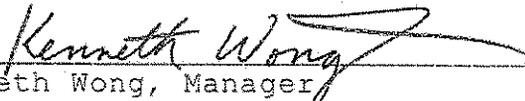
ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (OSC) under 49 U.S.C. Subtitle IX, chapter 701, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 04-069 issued on July 14, 2004, by the Associate Administrator for Commercial Space Transportation (Office), by deleting License Order No. LLO 04-069C.

ASSOCIATE ADMINISTRATOR FOR COMMERCIAL SPACE TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

By:

  
Kenneth Wong, Manager  
Licensing and Safety Division

Issued: March 19, 2008

Effective: March 19, 2008

ASSOCIATE ADMINISTRATOR  
FOR COMMERCIAL SPACE TRANSPORTATION  
LICENSE ORDER REGARDING

**FINANCIAL RESPONSIBILITY REQUIREMENTS**

AUTHORIZED BY LICENSE No. LLO 04-069  
Issued to

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (OSC) under 49 U.S.C. Subtitle IX, chapter 701, and 14 C.F.R. Part 440.
2. Purpose: This Order modifies License No. LLO 04-069 (the License) issued on July 14, 2004, by the Associate Administrator for Commercial Space Transportation (Office), by prescribing financial responsibility requirements for licensed launch activities in accordance with 14 C.F.R. Part 440.
3. Liability Insurance: OSC shall maintain a policy or policies of liability insurance (or otherwise demonstrate financial responsibility) in the amount of Fifty Seven Million Dollars (\$57,000,000) for covered claims resulting from a flight, commencing upon take-off of the L-1011 carrier aircraft from RTS in accordance with 14 C.F.R. § 440.9(b).
4. Government Property Insurance: OSC shall maintain a policy or policies of insurance (or otherwise demonstrate financial responsibility) in the amount of One Million Dollars (\$1,000,000) for covered property claims resulting from a flight, commencing upon take-off of the L-1011 carrier aircraft from RTS in accordance with 14 C.F.R. § 440.9(d).

Covered property includes all property owned, leased, or occupied by, or within the care, custody, or control of, the United States and its agencies, and its contractors and

subcontractors involved in licensed launch activities, at  
RTS.

ASSOCIATE ADMINISTRATOR FOR COMMERCIAL SPACE TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong  
Kenneth Wong, Manager  
Licensing and Safety Division

Issued: March 19, 2008

Effective: March 19, 2008

**Revision History:**

Original License Order Issued - July 14, 2004

Revision 1 - Issued March 19, 2008

- 1) For the sake of consistency, replace "Under" with "AUTHORIZED BY" in the title.
- 2) In paragraph 2, replaced "amends" with "modifies" and "concurrently" with "on July 14, 2004."
- 3) Eliminate paragraphs 3, 4, 5, and 8 through 12.
- 4) Replace paragraph 6 with "Liability Insurance: OSC shall maintain a policy or policies of liability insurance (or otherwise demonstrate financial responsibility) in the amount of Fifty Seven Million Dollars (\$57,000,000) for covered claims resulting from a flight, commencing upon take-off of the L-1011 carrier aircraft from RTS in accordance with 14 C.F.R. § 440.9(b)," and renumber as paragraph 3.
- 5) Replace paragraph 7 with "Government Property Insurance: OSC shall maintain a policy or policies of insurance (or otherwise demonstrate financial responsibility) in the amount of One Million Dollars (\$1,000,000) for covered property claims resulting from a flight, commencing upon take-off of the L-1011 carrier aircraft from RTS in accordance with 14 C.F.R § 440.9(d).

Covered property includes all property owned, leased, or occupied by, or within the care, custody, or control of, the United States and its agencies, and its contractors and subcontractors involved in licensed launch activities, at RTS," and renumber as paragraph 4.

- 5) Removed "commercial space" in all instances preceding "launch" or flight.