Commercial Space Transportation License

License Number: LLO 01-058 (Rev 2)

ORBITAL SCIENCES CORPORATION

is authorized, subject to the provisions of 51 USC Subtitle V, Ch. 509, and the orders, rules, and regulations issued under it, to conduct launches.

General. Orbital Sciences Corporation is authorized to conduct: (i) flights of Pegasus launch vehicles from Wallops Flight Facility (WFF), Wallops Island, Virginia; and (ii) pre-flight ground operations at WFF associated with the conduct of flights that require a Federal Aviation Administration license.

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 Office of Commercial Space Transportation.

The licensee shall at all times conduct its operations in accordance with the regulations prescribed by the Office of 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

Original Issued: March 16, 2001

Rev 2 Issued: March 10, 2016
Rev 2 Effective: March 18, 2016

Kenneth Wong

Manager, Licensing and Evaluation Division

Revision History:

Original license - Issued March 16, 2001

Revision 1 - Issued March 11, 2011

1) Due to transfer of code, redesignated Authority to read: "51 USC, Subtitle V, Ch. 509"

2) Replaced "Associate Administrator for" with "Office of" prior to all the name Commercial Space Transportation.

3) Removed "on flight azimuths and transporting classes of payloads to orbital destinations" as the words are unnecessary. These conditions are specified in the License Order No. LLO 01-058B.

4) Removed "commercial space" preceding "launches" in first paragraph and "flights" in the second paragraph.

5) Redesignated License No. LLO 01-058 to LLO 01-058 (Rev 1).

Revision 2 - Issued March 10, 2016

1) Redesignated License No. LLO 01-058 (Rev1) to LLO 01-058 (Rev 2).

2) Changed "Rev 1 Issued On: March 11 2011" to "Rev 2 Issued: March 10, 2016".

3) Changed "Effective On: March 18, 2011" to "Rev 2 Effective: March 18 2016".

4) Changed Division title of signee from "Manager, Licensing and Safety Division" to "Manager, Licensing and Evaluation Division".

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

LAUNCHES

AUTHORIZED BY LICENSE NO. LLO 01-058
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (Orbital) under 51 U.S.C. Subtitle V, Chapter 509, and 14 C.F.R. Ch. III.

2. Purpose: This Order modifies License No. LLO 01-058 originally issued on March 16, 2001, by the Federal Aviation Administration's Office of Commercial Space Transportation (Office), authorizing Orbital to conduct launches; and prescribes as conditions to License No. LLO 01-058 certain requirements applicable to those launches.

3. Definitions: For purposes of License No. LLO 01-058 and any orders issued by the Office pertaining to activities covered by License No. LLO 01-058:

   (a) "Launch" means (i) flight and (ii) pre-flight ground operations, as defined in this section.

   (b) "Flight" means flight of Pegasus launch vehicle utilizing the L-1011 carrier aircraft to orbital destinations, on Pegasus flight azimuths as specified in License Order No. LLO 01-058B issued concurrently by the Office. Flight commences upon take-off of the L-1011 carrier aircraft from WFF for carrier aircraft flight to designated release areas for the purpose of releasing a Pegasus launch vehicle. Flight ends upon safing of the Pegasus launch vehicle stages or components that reach earth orbit following separation of the payload from the Pegasus launch vehicle or upon wheels stopping after landing of the

L-1011 carrier aircraft at WFF, whichever occurs later.

(c) "Pre-flight ground operations" mean Orbital's operations at WFF associated with the conduct of any flights requiring an FAA license, beginning with the arrival of the launch vehicle at WFF.

(d) For purposes of License No. LLO 01-058, "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 01-058 authorizing Orbital to conduct launches is five (5) years from March 18, 2016.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Rev 2 Issued: March 10, 2016
Rev 2 Effective: March 18, 2016

Revision History:

Original License Order Issued - March 16, 2001

Revision 1 - Issued March 11, 2011

1) Due to transfer of code, redesignated Authority to read: "51 U.S.C. Subtitle V, Ch. 509"

2) Replaced "Associate Administrator for" with "Office of" prior to all the name Commercial Space Transportation

3) In paragraph 2, replaced "amends" with "modifies" and "concurrently" with "on March 16, 2001."

4) Eliminated paragraphs 4 through 12.

5) Renumbered paragraph 13 as paragraph 4 and replaced "this license" with "the renewal of the license (March 18, 2011)." This incorporates the renewal for an additional five year period beyond that originally introduced in License Order No. LLO 01-058E (now

obsolete).

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

7) Replaced "shall be deemed" and "will be deemed" with "is" for the sake of plain English.

8) Redesignated License Order No. LLO 01-058A with "(Rev 1)" following.

Revision 2 - Issued March 10, 2016

1) Redesignated License Order No. LLO 01-058A (Rev 1) with LLO 01-058A (Rev 2).

2) Replaced "OSC" with "Orbital".

3) In third paragraph, clarified that flight means flight of Pegasus launch vehicle utilizing the L-1011 carrier aircraft. Revised when flight ends by defining it as "Flight ends upon safing of the Pegasus launch vehicle stages or components that reach orbit following separation of the payload from the Pegasus launch vehicle or upon wheels stopping after landing of the L-1011 carrier aircraft at WFF, whichever occurs later."

4) In fourth paragraph, changed license term to five (5) years from March 18, 2016.

5) Changed "Issued: March 11, 2011" to "Rev 2 Issued: March 10, 2016".

6) Changed "Effective: March 18, 2011" to "Rev 2 Effective: March 18, 2016".

7) Changed Division title of signee from Manager, Licensing and Safety Division, to "Manager, Licensing and Evaluation Division".

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FLIGHT

AUTHORIZED BY LICENSE NO. LLO 01-058
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (Orbital) under 51 U.S.C. Subtitle V, Chapter 509, and 14 C.F.R. Ch. III.

2. Purpose: This Order modifies License No. LLO 01-058 originally issued on March 16, 2001, by the Federal Aviation Administration's Office of Commercial Space Transportation (Office), authorizing Orbital to conduct launches; and prescribes as conditions to License No. LLO 01-058 certain requirements applicable to the authorization to conduct flights.

3. Authorization: Orbital is authorized to conduct flights:

   (a) Using Standard Pegasus, Standard Pegasus with Hydrazine Auxiliary Propulsion System (HAPS), Pegasus XL and Pegasus XL with HAPS launch vehicles, in combination with the L-1011 aircraft that must hold a valid FAA airworthiness certificate and must operate in accordance with the operating limitations of that certificate and the applicable sections of 14 C.F.R. part 91;

   (b) From WFF, Wallops Island, Virginia;

   (c) On Pegasus flight azimuths from 53 to 127 degrees, inclusive;

   (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 Orbital application as of the date of this Order, and any modifications to the license application approved by the Office, in writing.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Rev 2 Issued: March 10, 2016
Rev 2 Effective: March 18, 2016

Revision History:

Original License Order Issued - March 16, 2001

Revision 1 - Issued March 11, 2011

1) Due to transfer of code, redesignated Authority to read: "51 U.S.C. Subtitle V, Ch. 509"

2) Replaced "Associate Administrator for" with "Office of" prior to all the name Commercial Space Transportation

3) In paragraph 2, replaced "amends" with "modifies" and "issued concurrently" with "originally issued on March 16, 2001."

4) 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 WFF 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 01-058A.

5) Corrected the second (c) under paragraph 3 to (d).

6) Eliminated paragraphs 4 through 8.

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

8) Replaced "shall be deemed" with "is" for the sake of plain English.

9) Reordered (a), (b), and (c) under paragraph 3.

10) Redesignated License Order No. LLO 01-058B with "(Rev 1)" following.

Revision 2 - Issued March 10, 2016

1) Redesignated License Order No. LLO 01-058B with "(Rev 2)" following.

2) Replaced "OSC" with "Orbital".

3) In subparagraph 3(a), replaced "Federal Aviation Administration certified L-1011 aircraft…" with " L-1011 aircraft that must hold a valid FAA airworthiness certificate and must operate in accordance with the operating limitations of that certificate and the applicable sections of 14 C.F.R. part 91."

4) Changed "Issued: March 11, 2011" to "Rev 2 Issued: March 10, 2016".

5) Changed "Effective: March 18 2011" to "Rev 2 Effective: March 18, 2016".

6) Changed Division title of signee from Manager, Licensing and Safety Division, to "Manager, Licensing and Evaluation Division".

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

PRE-FLIGHT GROUND OPERATIONS

AUTHORIZED BY LICENSE NO. LLO 01-058
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (Orbital) under 51 U.S.C. Subtitle V, Chapter 509, and 14 C.F.R. Ch. III.

2. Purpose: This Order modifies License No. LLO 01-058 originally issued on March 16, 2001, by the Federal Aviation Administration's Office of Commercial Space Transportation (Office), authorizing Orbital to conduct launches for which an FAA license is required, and prescribes as conditions to License No. LLO 01-058 certain additional requirements applicable to the authorization to conduct pre-flight ground operations.

3. Authorization: Orbital is authorized to conduct pre-flight ground operations at WFF associated with the conduct of any flights for which an FAA license is required, beginning with the arrival of the Orbital L-1011 with Pegasus launch vehicle attached at WFF.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Rev 2 Issued: March 10, 2016
Rev 2 Effective: March 18, 2016

Revision History:

Original License Order Issued - March 16, 2001

Revision 1 - Issued March 11, 2011

1) Due to transfer of code, redesignated Authority to read: "51 U.S.C. Subtitle V, Ch. 509"

2) Replaced "Associate Administrator for" with "Office of" prior to all the name Commercial Space Transportation

3) In paragraph 2, replaced "amends" with "modifies" and "issued concurrently" with "originally issued on March 16, 2001;" and deleted the word "any."

4) Eliminated paragraphs 4 and 5.

5) Removed "commercial space" in all instances preceding "launches" or "flights."

6) Redesignated License Order No. LLO 01-058C with "(Rev 1)" following.

Revision 2 - Issued March 10, 2016

1) Redesignated License Order No. LLO 01-058C with "(Rev 2)" following.

2) Replaced "OSC" with "Orbital".

3) Changed "Issued: March 11 2011" to "Rev 2 Issued: March 10, 2016".

4) Changed "Effective: March 18 2011" to "Rev 2 Effective: March 18, 2016".

5) Changed Division title of signee from Manager, Licensing and Safety Division, to "Manager, Licensing and Evaluation Division".

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FINANCIAL RESPONSIBILITY REQUIREMENTS

AUTHORIZED BY LICENSE NO. LLO 01-058
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation (Orbital) under 51 U.S.C. Subtitle V, Chapter 509, and 14 C.F.R. Part 440.

2. Purpose: This Order modifies License No. LLO 01-058 (the License) originally issued on March 16, 2001, by the Federal Aviation Administration's Office of 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: Orbital shall maintain a policy or policies of liability insurance (or otherwise demonstrate financial responsibility) in accordance with 14 C.F.R. § 440.9(b) in the following amounts:

   (a) Liability insurance in the amount of Forty Three Million, Five Hundred Thousand Dollars ($43,500,000) for covered claims resulting from a flight, commencing upon take-off of the L-1011 carrier aircraft from WFF, Wallops Island, VA; and

   (b) Liability insurance in the amount of Ten Million Dollars ($10,000,000) for covered claims resulting from pre-flight ground operations performed at WFF.

4. Government Property Insurance: Orbital shall maintain a policy or policies of insurance (or otherwise demonstrate financial responsibility) in accordance with 14 C.F.R § 440.9(d) in the following amounts:

(a) Insurance 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 WFF; and

(b) Insurance in the amount of One Million Dollars ($1,000,000) for covered property claims resulting from pre-flight ground operations performed at WFF.

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 WFF.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Rev 2 Issued: March 10, 2016
Rev 2 Effective: March 18, 2016

Revision History:

Original License Order Issued - March 16, 2001

Revision 1 - Issued March 11, 2011

1) Due to transfer of code, redesignated Authority to read: "51 U.S.C. Subtitle V, Ch. 509"
2) Replaced "Associate Administrator for" with "Office of" prior to all the name Commercial Space Transportation
3) For the sake of consistency, replaced "Under" with "AUTHORIZED BY" in the title.
4) In paragraph 2, replaced "amends" with "modifies" and "issued concurrently" with "originally issued on March 16, 2001."
5) Eliminated paragraphs 3, 4, 5, and 8 through 12.
6) Renumbered paragraphs 6 and 7 as paragraphs 3 and 4, respectively.
7) Removed "commercial space" in all instances preceding "launch" or flight.
8) Redesignated License Order No. LLO 01-058D with "(Rev 1)" following.

Revision 2 - Issued March 10, 2016

1) Redesignated License Order No. LLO 01-058D with "(Rev 2)" following.

2) Replaced "OSC" with "Orbital".

3) Changed "Issued: March 11, 2011" to "Rev 2 Issued: March 10, 2016".

5) Changed "Effective: March 18, 2011" to "Rev 2 Issued: March 18, 2016".

6) Changed Division title of signee from Manager, Licensing and Safety Division, to "Manager, Licensing and Evaluation Division".