Commercial Space Transportation License

License Number: LLO 00-051 (Rev 1)

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) Pre-flight ground operations on Minotaur-C launch vehicles at Vandenberg Air Force Base (VAFB) associated with the flights, as identified in paragraph (ii) of this license, and

(ii) Flights of Minotaur-C launch vehicles from LC-576E at VAFB, and transporting classes of payloads to orbital destinations on flight azimuths as specified in license orders issued by the Federal Aviation Administration, Office of Commercial Space Transportation.

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

Issued On: April 22, 2015
Effective On: April 27, 2015

Kenneth Wong

Manager, Licensing and Evaluation Division

Revision History

Original License - Issued April 27, 2000

Revision 1 - Issued April 22, 2015

1) Editorial changes including name change from Taurus to Minotaur-C and recodification of statute from 49 USC Subtitle IX, ch. 701 to 51 USC Subtitle V, ch. 509.

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

LAUNCH

AUTHORIZED BY LICENSE NO. LLO 00-051
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation, referred to as 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 00-051 (the license) originally issued on April 27, 2000, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing Orbital to conduct launches of Minotaur-C launch vehicles; and prescribes as conditions to License No. LLO 00-051 certain requirements applicable to the launches.

3. Definitions: For purposes of License No. LLO 00-051 and any orders issued by the FAA pertaining to activities covered by License No. LLO 00-051:

   (a) "Launch" shall mean flight and pre-flight ground operations, as defined in this section.

   (b) "Flight" shall mean the flight of a Minotaur-C launch vehicle commencing with ignition of the first stage from Vandenberg Air Force Base (VAFB) on flight azimuths and transporting classes of payloads to orbital destinations as specified in License Order LLO 00-051B. A nominal flight is concluded upon Orbital's last exercise of control over the Minotaur-C launch vehicle, including the safing of the Minotaur-C launch vehicle stages or components that reach Earth orbit, following separation of the payloads.

   (c) "Pre-flight ground operations" shall mean Orbital's pre-flight preparation of the Minotaur-C launch vehicle at VAFB, beginning with the arrival of the Minotaur-C launch vehicle at VAFB.

4. License Term: The term of License No. LLO 00-051 authorizing Orbital to conduct launches is five (5) years (April 26, 2020) from the effective date of this license order.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong

Kenneth Wong, Manager
Licensing and Evaluation Division

Issued On: April 22, 2015
Effective On: April 27, 2015

Revision History

Original License Order - Issued April 27, 2000

Revision 1 - Revision and Renewal, issued April 14, 2010

1) Redesignate License Order No. LLO 00-051A with "(Rev 1)" following
2) Replace "Associate Administrator for" with "Office of" prior to all the name Commercial Space Transportation
3) In paragraph 2, replace "amends" with "modifies", "concurrently" with "on April 27, 2000, and renewed on April 20, 2005," and "each launch" with "those launches."
4) Replace "AST" with "the Office" in all instances.
5) In paragraph 3(a), replace "Launch," with ' "Launch activities" and "launches.",' and after(i), pluralize "flight."
6) In paragraph 3(b), replace "of a Taurus launch vehicle" with "commencing from a Taurus first stage ignition," after "LLO 00-051B" add "(Rev 1)," and remove the sentence "Flight commences upon first-stage engine ignition of a Taurus launch vehicle."
7) Replace "shall be deemed" with "is" for the sake of plain English
8) In paragraph 3(c), replace "involved in the preparation of a Taurus launch vehicle for flight" with "at VAFB associated with the conduct of any launches."
9) Eliminate paragraphs 4 through 12 that restated regulations, and renumber paragraph 13 as paragraph 4.
10) In the new paragraph 4, replace "this license" with "the renewal of the license (April 26, 2010)." This incorporates the renewal for an additional five year period beyond that originally introduced in License Order No. LLO 00-051E (now obsolete).

Revision 2 - Revision and Renewal, issued April 22, 2015

1) Editorial changes including recodification of statute from 49 USC Subtitle IX, ch. 701 to 51 USC Subtitle V, ch. 509, name change from Taurus to Minotaur-C, and removal of some provisions of the license orders that reiterated statutory or regulatory requirements.

2) Renewal of the License to April 26, 2020.

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FLIGHT

AUTHORIZED BY LICENSE NO. LLO 00-051
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation, referred to as 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 00-051 (the license) originally issued on April 27, 2000, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing Orbital to conduct launches of Minotaur-C launch vehicles; and prescribes as conditions to License No. LLO 00-051 certain requirements applicable to the authorization to conduct flights.

3. Authorization: Orbital is authorized to conduct flights:

   (a) Using Minotaur-C launch vehicles;

   (b) From Vandenberg Air Force Base (VAFB), California;

   (c) On initial flight azimuths from 198 to 235 degrees;

   (d) Transporting (i) U.S. Government payloads to any orbit, and (ii) communications, remote sensing, Celestis, and scientific research payloads to low earth orbit at apogees of less than 25,000 nautical miles and at perigees between 100 and 1000 nautical miles; and

   (e) According to the launch vehicle, launch vehicle systems, and safety management program represented in the Orbital application as of the date of this order, and any amendments to the license application approved by the FAA, in writing.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Issued On: April 22, 2015
Effective On: April 27, 2015

Revision History:

Original License Order - Issued April 27, 2000

Revision 1 - Issued September 12, 2003

1) Change paragraph 3(c) from "On initial flight azimuths from 205 to 235 degrees, inclusive" to "On initial flight azimuths from 198 to 235 degrees, inclusive"

Revision 2 - Issued April 22, 2015

1) Editorial changes including recodification of statute from 49 USC Subtitle IX, ch. 701 to 51 USC Subtitle V, ch. 501, name change from Taurus to Minotaur-C, and removal of some provisions of the license orders that reiterated statutory or regulatory requirements.

2) Change paragraph 3(d) from "perigees between 100 and 500 nautical miles" to "perigees between 100 and 1000 nautical miles."

License Order No. LLO 00-051C (Rev 1)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

PRE-FLIGHT GROUND OPERATIONS

AUTHORIZED BY LICENSE NO. LLO 00-051
ISSUED TO

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation , referred to as 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 00-051 (the license) originally issued on April 27, 2000, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing Orbital to conduct launches of Minotaur-C launch vehicles; and prescribes as conditions to License No. LLO 00-051 certain requirements applicable to the authorization to conduct pre-flight ground operations.

3. Authorization: Orbital is authorized to conduct pre-flight ground operations at Vandenberg Air Force Base (VAFB) associated with the launches of Minotaur-C launch vehicles.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Issued On: April 22, 2015
Effective On: April 27, 2015

Revision History

Original License Order - Issued April 27, 2000

Revision 1 - Issued April 22, 2015

1) Editorial changes including recodification of statute from 49 USC Subtitle IX, ch. 701 to 51 USC Subtitle V, ch. 509, name change from Taurus to Minotaur-C, and removal of some provisions of the license orders that reiterated statutory or regulatory requirements.

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FINANCIAL RESPONSIBILITY REQUIREMENTS

Under License No. LLO 00-051
Issued to

ORBITAL SCIENCES CORPORATION

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1. Authority: This Order is issued to Orbital Sciences Corporation, referred to as 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 00-051 (the license) originally issued on April 27, 2000, by the Federal Aviation Administration's Office of Commercial Space Transportation, by prescribing financial responsibility requirements for licensed launch activities in accordance with 14 C.F.R. part 440.

3. Definitions: For purposes of this Order, "licensed launch activities" shall mean activities authorized by the license. Other terms used in this Order are defined in accordance with 14 C.F.R. § 440.3.

4. 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 amount of:

   (a) Forty Million Dollars ($40,000,000) for covered claims resulting from flight of the Minotaur-C launch vehicle from Vandenberg Air Force Base (VAFB).

   (b) Ten Million Dollars ($10,000,000) for covered claims resulting from pre-flight ground operations performed at VAFB.

5. 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 amount of:

   (a) Two Million Three Hundred Thousand Dollars ($2,300,000) for covered claims resulting from flight of the Minotaur-C launch vehicle from VAFB.

   (b) Twenty Seven Million Two Hundred Thousand Dollars ($27,200,000) for covered claims resulting from pre-flight ground operations performed at VAFB.

6. 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 VAFB.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong

Kenneth Wong, Manager
Licensing and Evaluation Division

Issued On: April 22, 2015
Effective On: April 27, 2015

Revision History

Original License Order - Issued April 27, 2000

Revision 1 - Issued April 22, 2015

1) Editorial changes including recodification of statute from 49 USC Subtitle IX, ch. 701 to 51 USC Subtitle V, ch. 509, name change from Taurus to Minotaur-C, and removal of some provisions of the license orders that reiterated statutory or regulatory requirements.