

Commercial Space Transportation License

License Number: LLO 18-111 (Rev 1)

SPACE EXPLORATION TECHNOLOGIES

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. Space Exploration Technologies is authorized to conduct:

- (i) Flights of Falcon 9 launch vehicles from Space Launch Complex 4E (SLC-4E) at Vandenberg Air Force Base (VAFB) transporting communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space Transportation to low Earth orbit; and
- (ii) pre-flight ground operations at VAFB associated with the flights, as identified in paragraph (i) of this license, of the Falcon 9 launch vehicles.

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: October 4, 2018

Rev 1 Issued: November 15, 2018

Rev 1 Effective: November 15, 2018

A handwritten signature in blue ink that reads "Kenneth Wong".

Manager, Licensing and Evaluation Division

Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Changed paragraph (i) to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

License Order No. LLO 18-111A (Rev 1)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

LAUNCH

AUTHORIZED BY LICENSE NO. LLO 18-111
ISSUED TO

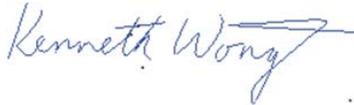
SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing SpaceX to conduct launches of Falcon 9 launch vehicles; and prescribes as conditions to License No. LLO 18-111 certain requirements applicable to the launches.
3. Definitions: For purposes of License No. LLO 18-111 and any orders issued by the FAA pertaining to activities covered by License No. LLO 18-111:
 - (a) "Flight" shall mean the flight of a Falcon 9 launch vehicle, commencing with ignition of the first stage from SLC-4E at Vandenberg Air Force Base (VAFB) and transporting communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space Transportation to low Earth orbit. Flight includes flyback of the first stage booster for landing at Landing Zone 4 at VAFB, landing on a droneship, or splashdown in the ocean as described in the application. A flight is concluded upon SpaceX's last exercise of control over the Falcon 9 vehicle, including the safing of the Falcon 9 vehicle stages or components that reach Earth orbit, following separation of the payload.
 - (b) "Pre-flight ground operations" shall mean SpaceX's pre-flight preparations of the Falcon 9 launch vehicle at VAFB, beginning with the arrival of the Falcon vehicle at VAFB.

License Order No. LLO 18-111A (Rev 1)

4. Special Reporting Requirements: In addition to all applicable reporting requirements under 14 C.F.R. Ch. III, SpaceX must identify any anomaly occurring on a prior Falcon 9 launch that could be material to public safety no later than 15 days before any flight conducted, unless the requirement of 14 C.F.R. § 417.25(a) has already been satisfied.
5. License Term: The term of License No. LLO 18-111 authorizing SpaceX to conduct launches is five (5) years from the effective date of this license order.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION



By: _____
Kenneth Wong, Manager
Licensing and Evaluation Division

Original Issued: October 4, 2018
Rev 1 Issued: November 15, 2018
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Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (3)(a) changed to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

License Order No. LLO 18-111B (Rev 1)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

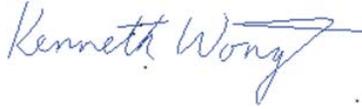
FLIGHT

AUTHORIZED BY LICENSE NO. LLO 18-111
ISSUED TO

SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing SpaceX to conduct launches of Falcon 9 launch vehicles; and prescribes as conditions to License No. LLO 18-111 certain requirements applicable to the authorization to conduct the flights of these launch vehicles.
3. Authorization: SpaceX is authorized to conduct flights of launch vehicles:
 - (a) Using a Falcon 9 launch vehicle;
 - (b) From Space Launch Complex 4E at Vandenberg Air Force Base, California;
 - (c) On a flight azimuth between 173 and 209 degrees;
 - (d) Transporting communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space to low Earth orbit; and
 - (e) According to the launch vehicle, launch vehicle systems, and safety management program represented in the SpaceX 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, Manager
Licensing and Evaluation Division

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Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (3)(d) changed to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

License Order No. LLO 18-111C (Rev 1)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

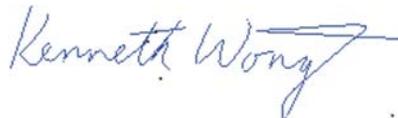
PRE-FLIGHT GROUND OPERATIONS

AUTHORIZED BY LICENSE NO. LLO 18-111
ISSUED TO

SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing SpaceX to conduct launch of Falcon 9 launch vehicles; and prescribes as conditions to License No. LLO 18-111 certain requirements applicable to the authorization to conduct pre-flight ground operations.
3. Authorization: SpaceX is authorized to conduct pre-flight ground operations at Vandenberg Air Force Base (VAFB) associated with launches of communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space Transportation to low earth orbit on Falcon 9 launch vehicles.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION



By: _____
Kenneth Wong, Manager
Licensing and Evaluation Division

Original Issued: October 4, 2018
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Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (3) changed to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

License Order No. LLO 18-111D (Rev 1)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FINANCIAL RESPONSIBILITY REQUIREMENTS

Under License No. LLO 18-111
Issued to

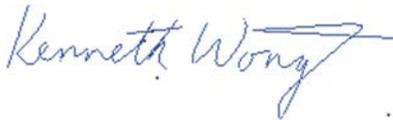
SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. Subtitle V, chapter 509, and 14 C.F.R. part 440.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, 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: SpaceX 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) Fifty-Three Million Dollars (\$53,000,000) for covered claims resulting from flight of the Falcon 9 launch vehicle from Vandenberg Air Force Base (VAFB) or Fifty Million Dollars (\$50,000,000) if the flight includes first stage return to launch site (LZ-4); and
 - (b) Nine Million Dollars (\$9,000,000) for covered claims resulting from pre-flight operations performed at VAFB.

License Order No. LLO 18-111D (Rev 1)

5. Government Property Insurance: SpaceX 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) Sixty-One Million Dollars (\$61,000,000) for covered claims resulting from flight of the Falcon 9 launch vehicle from VAFB or One Hundred Million Dollars (\$100,000,000) if the flight includes first stage return to launch site (LZ-4); and
 - (b) Two Million Dollars (\$2,000,000) for covered claims resulting from pre-flight 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



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Kenneth Wong, Manager
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Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (4)(a) added Fifty-Three Million Dollars (\$53,000,000) value for non-RTLS launches. Fifty Million Dollars (\$50,000,000) for launches with RTLS.
- 3) Paragraph (5)(a) added (a)Sixty-One Million Dollars (\$61,000,000) value for non-RTLS launches. One Hundred Million Dollars (\$100,000,000) for launches with RTLS.