

# Commercial Space Transportation License

License No. VOL 23-129 Rev. 5.2

**Space Exploration  
Technologies,  
Corp.**

is authorized, subject to the provisions of 51 U.S.C. Subtitle V, chapter 509, and the orders, rules, and regulations issued under it, to conduct launches of the Starship-Super Heavy vehicle.

This license is granted subject to the terms, conditions, and limitations set forth in licensing orders A and B, and any subsequent orders or other written stipulations, issued by the Office of Commercial Space Transportation, which are hereby incorporated by reference.

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 the license.

Original Issue Date:	April 14, 2023
VOL 23-129 Rev. 5.2 Issued:	February 26, 2025
VOL 23-129 Rev. 5.2 Effective:	February 26, 2025



US Department  
of Transportation  
**Federal Aviation  
Administration**

800 Independence Ave., SW  
Washington, D.C. 20591

A handwritten signature in cursive script, reading "Katie L. Cranor", is positioned above the printed name of the signatory.

Digitally signed by  
Katie Lynne Cranor  
Date: 2025.02.26  
20:47:34 -05'00'

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**Katie L. Cranor**  
**Manager, Safety Authorization Division**

## LICENSE AND ORDERS REVISION HISTORY

Rev No.	Date	Section	Description
0	April 14, 2023		Original Issuance
1	November 15, 2023	All Sections	Added Rev. 1 to all instances of License No. VOL 23-129.
		Order A-1	<ol style="list-style-type: none"> <li>1. Removed “concurrently” from paragraph 2.</li> <li>2. Replaced “Space Exploration Technologies, Corp.” with “the Starship-Super Heavy” in paragraph 3(b).</li> <li>3. Changed paragraph 4(b)(iv) from “first flight” to “Orbital Flight Test 2 mission.”</li> <li>4. Added paragraph 6, “Additional Measures: SpaceX must comply with the conditions in the November 15, 2023 Written Re-evaluation of the 2022 Programmatic Environmental Assessment (PEA) for the SpaceX Starship/Super Heavy Launch Vehicle Program at the Boca Chica Launch Site in Cameron County, Texas.”</li> <li>5. Original paragraphs 6, 7, 8, and 9 were renumbered to paragraphs 7, 8, 9, and 10, respectively, with the addition of new paragraph 6.</li> <li>6. Changed paragraph 9(a) from "expended first stage vehicle stages" to "expended vehicle stages."</li> </ol>
		Order B-1	<ol style="list-style-type: none"> <li>1. Removed “concurrently” from paragraph 2.</li> <li>2. Removed duplicative sentence from paragraph 2.</li> </ol>
2	March 13, 2024	All Sections	Added Rev. 2 to all instances of License No. VOL 23-129.
		Order A-1	<ol style="list-style-type: none"> <li>1. Changed paragraph 4(b)(iii) from “Pacific Ocean” to “Indian Ocean.”</li> <li>2. Added “, excluding Starship entry contingency landing locations.” to paragraph 4(b)(iii)</li> <li>3. Changed paragraph 4(b)(iv) from “Orbital Flight Test 2” to “Flight 3.”</li> <li>4. Moved paragraph 6(a) to paragraph 6(b).</li> <li>5. Added new paragraph 6(a) to “SpaceX must comply with the measures listed in the Conditions section in the April 14, 2023 <i>Written Re-evaluation of the 2022 Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the Boca Chica Launch Site in Cameron County, Texas.</i>”</li> <li>6. Added paragraph 6(c), “SpaceX must comply with the measures listed in the Conditions section of the <i>Finding of No Significant Impact and Record of Decision for the Tiered Environmental Assessment for SpaceX Starship Indian Ocean Landings</i>, issued March 12, 2024.”</li> </ol>
3	June 4, 2024	All Sections	Updated “Rev. 2” to “Rev. 3” to all instances of License No. VOL 23-129.
		Order A-1	<ol style="list-style-type: none"> <li>1. Changed paragraph 4(b)(i) from “Using the Starship-Super Heavy vehicle.” to “Using a Ship 29-Booster 11 Starship-Super Heavy vehicle configuration, unless this license is modified to remove this term.”</li> <li>2. Removed “, excluding Starship entry contingency landing locations” from paragraph 4(b)(iii).</li> </ol>

Rev No.	Date	Section	Description
			3. Changed paragraph 4(b)(iv) from “For the Flight 3 mission only, unless this license is modified to remove this term.” to “For the mission profile represented for Flight 4.”
4	October 12, 2024	All Sections	Updated “Rev.3” to “Rev. 4” to all instances of License No. VOL 23-129.
		Order A-1	<ol style="list-style-type: none"> <li>1. Changed paragraph 4(b)(i) to “Using the Starship-Super Heavy vehicle.”</li> <li>2. Added “, SpaceX Boca Chica Launch Complex,” to paragraph 4(b)(iii).</li> <li>3. Changed paragraph 4(b)(iv) from “for Flight 4.” to “in the application.”</li> <li>4. Added paragraph 6(d), “SpaceX must comply with the measures listed in the Conditions section of the October 12, 2024 <i>Written Re-evaluation of the 2022 Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the Boca Chica Launch Site in Cameron County, Texas.</i>”</li> <li>5. Changed “stages” to “components” in paragraph 9(a).</li> <li>6. Added paragraph 9(c), “SpaceX must notify the FAA Operational Safety Directorate, Commercial Space Transportation, Safety Assurance Division (ASA-300), within 15 calendar days of any changes to the representations in its license application or any document prepared or submitted by SpaceX, or its designee, on which the FAA relied to issue the vehicle operator license for Starship/Super Heavy operations at Boca Chica, TX; to support the FAA’s compliance with the National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq., the Council on Environmental Quality’s NEPA-implementing regulations at 40 CFR part 1500-1508, 14 CFR § 450.47(a), and FAA Order 1050.1F, Environmental Impacts: Policies and Procedures; and to reach determinations that the proposed SpaceX licensed activities are consistent with applicable environmental requirements and will not significantly affect the quality of the human environment.”</li> <li>7. Added paragraph 9(d), “<b>Notice required.</b> If a Federal, State, or local environmental regulator alleges in an investigative report, administrative order, or notice of violation (notices) that SpaceX has violated an environmental requirement, standard, permit, or other authorization at the facilities or operations subject to an FAA-issued vehicle operator license for Starship/Super Heavy operations at Boca Chica, TX, SpaceX must provide the FAA with copies of any such notices within (i) the same time period that SpaceX is given to respond to such allegations by the relevant authority, or (ii) 15 calendar days, whichever is shorter. SpaceX must notify the FAA in writing immediately of actual or alleged violations of applicable Federal, State, or local environmental laws, regulations, permits or other authorizations relating to the license if a launch from Boca Chica, TX is scheduled within 15 days from the date on which SpaceX receives the notice.</li> </ol> <p><b>Contents of required notice.</b> SpaceX must transmit the notice(s) to FAA and provide the following information in the required notice:</p> <ol style="list-style-type: none"> <li>i. Nature of alleged or actual violation;</li> </ol>

Rev No.	Date	Section	Description
			<ul style="list-style-type: none"> <li>ii. The date on which SpaceX became aware of the alleged or actual violation;</li> <li>iii. A summary of the actions SpaceX has taken or proposes to take to address or mitigate the violation; and</li> <li>iv. Contact information for any agency involved in the investigation or enforcement action.</li> </ul> <p>The FAA will not withhold, delay, or adversely consider license or license modification applications by SpaceX or otherwise take adverse action against SpaceX based on any notice SpaceX provides to the FAA hereunder prior to the final disposition of the underlying violation(s) of Federal State, or local environmental laws, regulations, permits, or other authorizations without first providing SpaceX with: 1) notice of the proposed adverse action; and 2) a reasonable opportunity to respond in writing.</p> <p><b>Annual Certification.</b> SpaceX must submit an annual certification, under penalty of perjury, signed by a responsible official, attesting to SpaceX's compliance with all applicable environmental laws, regulations, permits, or other authorizations related to FAA-licensed activities at Boca Chica, Texas."</p> <ul style="list-style-type: none"> <li>8. Added paragraph 9(e), "SpaceX is required to send the FAA copies of all monitoring data within 45 days of sampling the use of its deluge system."</li> <li>9. Added paragraph 9(f), "SpaceX will provide the FAA a copy of the TCEQ agreed order after it is approved and signed by TCEQ; TPDES permit No. WQ0005462000, when it is issued; and the Final CAFO for Docket No. CWA-06-2024-1768 when it is signed by EPA."</li> <li>10. Added paragraph 10, "Environmental Requirements:"</li> <li>11. Added paragraph 10(a), "SpaceX must conduct its licensed activities in accordance with the representations made in its license application and must comply with all applicable Federal, Tribal, State, and local environmental laws, regulations, and standards in carrying out its license activities. SpaceX has a continuing duty to obtain and maintain current all applicable environmental permits, licenses, authorizations, and approvals for activities under this license."</li> <li>12. Added paragraph 10(b), "SpaceX must continue to comply with or carry out, as appropriate, the conditions, limitations, mitigation measures, and monitoring plans set forth in any and all documents prepared by the FAA pursuant to the National Environmental Policy Act, appended to this license, and relied upon to reach a determination that the proposed licensed activities are consistent with applicable environmental requirements and will not significantly affect the quality of the human environment."</li> <li>13. Added paragraph 11, "Population Exposure Analysis Methodology Limitation:"</li> <li>14. Added paragraph 11(a), "SpaceX must modify its compliance to 14 CFR 450.123(c) no later than October 4, 2025, to include a process for updating the local population data at least annually.</li> </ul>

Rev No.	Date	Section	Description
			15. Added paragraph 11(b), "SpaceX must confirm that all population centers that contribute greater than 1E-6 estimated casualties within the day of launch 1E-11 probability of casualty contour are contained by the 1E-11 probability of casualty contour used to justify the extent of the high-fidelity population model, to ensure that all statistically significant local populations are of sufficient fidelity in accordance with 14 CFR 450.115(b)."
5.0	December 17, 2024	All Sections	Updated "Rev. 4" to "Rev. 5" to all instances of License No. VOL 23-129.
		Order A-1	<ol style="list-style-type: none"> <li>Added paragraph 12: "Highly Reliable Flight Safety System Tailoring:</li> <li>Added paragraph 12(s), "SpaceX must receive FAA signature on RCC-324-11 tailoring change request, TR24-001-STARSHIP, prior to initiation of Flight 7."</li> <li>Changed previous paragraph 12 to paragraph 13.</li> </ol>
5.1	January 10, 2025	All Sections	Updated "Rev. 5" to "Rev. 5.1" to all instances of License No. VOL 23-129.
		Order A-1	<ol style="list-style-type: none"> <li>Removed paragraph 12 "Highly Reliable Flight Safety System Tailoring" in its entirety.</li> <li>Changed previous paragraph 13 to paragraph 12.</li> </ol>
5.2	February 26, 2025	All Sections	Updated "Rev. 5.1" to "Rev. 5.2" to all instances of License No. VOL 23-129.
		Order A-1	<ol style="list-style-type: none"> <li>In paragraph 3(a) replaced, "at Boca Chica, Texas, beginning at the start of Autonomous Flight Termination System ordnance installation for the Starship upper stage vehicle or Super Heavy booster vehicle, whichever occurs first. " to "from the SpaceX Boca Chica Launch Complex at Boca Chica, Texas, beginning at the start completion of the launch GO/NO-GO Poll prior to propellant loading as described in eProcs 1.000, which subsequently initiates propellant loading of the Starship-Super Heavy vehicle."</li> <li>Split paragraph 3(b) to create paragraph 3(b)(i) and replaced "A flight" to "Suborbital "Flight""</li> <li>Added paragraph 3(b)(ii), "Orbital "Flight" ends after deployment of all payloads, upon completion of the Space Exploration Technologies, Corp. Starship-Super Heavy's first steady-state orbit if there is no payload deployment, after vehicle component impact or landing on Earth, after activities necessary to return the vehicle or component to a safe condition on the ground after impact or landing, or after activities necessary to return the site to a safe condition, whichever occurs latest."</li> <li>Added paragraph 3(c), ""Reentry" shall commence with the activities conducted in Earth orbit or outer space to determine reentry readiness and that are critical to ensuring public health and safety and the safety of property during reentry flight, marked by the initiation of Starship's last health check on-orbit prior initiating reentry deorbit burn. A reentry ends after activities necessary to return the reentry</li> </ol>

Rev No.	Date	Section	Description
			vehicle, or vehicle component, to a safe condition on the ground after impact or landing.”

**Office of Commercial  
Space Transportation  
License Order A-1  
Regarding**

**Launch**

AUTHORIZED BY LICENSE NO. VOL 23-129 Rev. 5.2  
ISSUED TO:  
**Space Exploration Technologies, Corp.**

License No. VOL 23-129 Rev. 5.2 Order A-1 establishes the orders regarding the launch of Space Exploration Technologies, Corp.'s Starship-Super Heavy vehicle from SpaceX Boca Chica Launch Complex, Boca Chica, Texas.

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1. **Authority:** This Order is issued to Space Exploration Technologies, Corp. (SpaceX) under 51 U.S.C. Subtitle V, chapter 509, and 14 CFR chapter III.
  2. **Purpose:** This Order modifies License No. VOL 23-129 Rev. 5.2 issued by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing Space Exploration Technologies, Corp. to conduct the launch of its Starship-Super Heavy vehicle as identified in the license application; and prescribes as conditions to License No. VOL 23-129 Rev. 5.2 certain requirements applicable to launch.
  3. **Definitions:** For purposes of License No. VOL 23-129 Rev. 5.2 and any orders issued by the FAA pertaining to activities covered by License No. VOL 23-129 Rev. 5.2:
    - a. "Pre-flight ground operations" shall mean Space Exploration Technologies, Corp.'s pre-flight preparations of the Starship-Super Heavy vehicle from the SpaceX Boca Chica Launch Complex at Boca Chica, Texas, beginning at the completion of the launch GO/NO-GO Poll prior to propellant loading as described in eProcs 1.000, which subsequently initiates propellant loading of the Starship-Super Heavy vehicle.
    - b. "Flight" shall commence with the ignition of the first stage with the intention of liftoff of a Space Exploration Technologies, Corp. Starship-Super Heavy vehicle from SpaceX Boca Chica Launch Complex, Boca Chica, Texas.
      - i. Suborbital "flight" ends upon the Starship-Super Heavy Space Exploration Technologies, Corp. vehicle or vehicle component impact or landing on Earth, after activities necessary to return the vehicle or vehicle component to a safe condition on the ground after impact or landing, or after activities necessary to return the site to a safe condition, whichever occurs latest.
      - ii. Orbital "flight" ends after deployment of all payloads, upon completion of the Space Exploration Technologies, Corp. Starship-Super Heavy's first steady-state orbit if there is no payload deployment, after vehicle component impact or landing on Earth, after activities necessary to return the vehicle or component to a safe condition on the ground after impact or landing, or after activities necessary to return the site to a safe condition, whichever occurs latest.
    - c. "Reentry" shall commence with the activities conducted in Earth orbit or outer space to determine reentry readiness and that are critical to ensuring public health and safety and the safety of property during reentry flight, marked by the initiation of Starship's last health check on-orbit prior initiating reentry deorbit burn. A reentry ends after activities necessary to return

the reentry vehicle, or vehicle component, to a safe condition on the ground after impact or landing.

4. **Authorization:** In accordance with the representations in the Space Exploration Technologies, Corp. application as of the date of this license, and any amendments to the license application or waivers approved by the FAA, in writing, Space Exploration Technologies, Corp. is authorized to conduct:
  - a. Pre-flight ground operations:
    - i. Using the Starship-Super Heavy vehicle.
    - ii. At SpaceX Boca Chica Launch Complex, Boca Chica, Texas.
  - b. Flights:
    - i. Using the Starship-Super Heavy vehicle.
    - ii. From SpaceX Boca Chica Launch Complex, Boca Chica, Texas.
    - iii. To Gulf of Mexico, SpaceX Boca Chica Launch Complex, and Indian Ocean locations specified in its application.
    - iv. For the mission profile represented in the application.
5. **Environmental Mitigations:** SpaceX must comply with the measures listed in the Conditions and Mitigation section of the *Mitigated Finding of No Significant Impact and Record of Decision for the SpaceX Starship/Super Heavy Launch Vehicle Program at the SpaceX Boca Chica Launch Site in Cameron County, Texas*, issued June 13, 2022.
6. **Additional Measures:**
  - a. SpaceX must comply with the measures listed in the Conditions section in the April 14, 2023 *Written Re-evaluation of the 2022 Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the Boca Chica Launch Site in Cameron County, Texas*.
  - b. SpaceX must comply with the measures listed in the Conditions section in the November 15, 2023 *Written Re-evaluation of the 2022 Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the Boca Chica Launch Site in Cameron County, Texas*.
  - c. SpaceX must comply with the measures listed in the Conditions section of the *Finding of No Significant Impact and Record of Decision for the Tiered Environmental Assessment for SpaceX Starship Indian Ocean Landings*, issued March 12, 2024.
  - d. SpaceX must comply with the measures listed in the Conditions section of the October 12, 2024 *Written Re-evaluation of the 2022 Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the Boca Chica Launch Site in Cameron County, Texas*.
7. **Compliance Monitoring:** An FAA Safety Inspector must be present at SpaceX's Boca Chica Launch Complex for flight operations.
8. **Verification of Hazard Area Publication:** SpaceX must confirm, no later than 24 hours prior to flight, that maritime warnings have been issued.
9. **Special Reporting Requirements:**
  - a. SpaceX must provide FAA with the location and fate of the expended vehicle components within 30 days of each launch using an approved plan that is submitted to the FAA at least 7 days prior to launch.
  - b. SpaceX must identify and report any anomaly during any pre-flight ground operations of the vehicle that could be material to public health and safety and the safety of property within 90 days.



- c. SpaceX must notify the FAA Operational Safety Directorate, Commercial Space Transportation, Safety Assurance Division (ASA-300), within 15 calendar days of any changes to the representations in its license application or any document prepared or submitted by SpaceX, or its designee, on which the FAA relied to issue the vehicle operator license for Starship/Super Heavy operations at Boca Chica, TX; to support the FAA's compliance with the National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq., the Council on Environmental Quality's NEPA-implementing regulations at 40 CFR part 1500-1508, 14 CFR § 450.47(a), and FAA Order 1050.1F, Environmental Impacts: Policies and Procedures; and to reach determinations that the proposed SpaceX licensed activities are consistent with applicable environmental requirements and will not significantly affect the quality of the human environment.
- d. **Notice required.** If a Federal, State, or local environmental regulator alleges in an investigative report, administrative order, or notice of violation (notices) that SpaceX has violated an environmental requirement, standard, permit, or other authorization at the facilities or operations subject to an FAA-issued vehicle operator license for Starship/Super Heavy operations at Boca Chica, TX, SpaceX must provide the FAA with copies of any such notices within (i) the same time period that SpaceX is given to respond to such allegations by the relevant authority, or (ii) 15 calendar days, whichever is shorter. SpaceX must notify the FAA in writing immediately of actual or alleged violations of applicable Federal, State, or local environmental laws, regulations, permits or other authorizations relating to the license if a launch from Boca Chica, TX is scheduled within 15 days from the date on which SpaceX receives the notice.

**Contents of required notice.** SpaceX must transmit the notice(s) to FAA and provide the following information in the required notice:

- i. Nature of alleged or actual violation;
- ii. The date on which SpaceX became aware of the alleged or actual violation;
- iii. A summary of the actions SpaceX has taken or proposes to take to address or mitigate the violation; and
- iv. Contact information for any agency involved in the investigation or enforcement action.

The FAA will not withhold, delay, or adversely consider license or license modification applications by SpaceX or otherwise take adverse action against SpaceX based on any notice SpaceX provides to the FAA hereunder prior to the final disposition of the underlying violation(s) of Federal State, or local environmental laws, regulations, permits, or other authorizations without first providing SpaceX with: 1) notice of the proposed adverse action; and 2) a reasonable opportunity to respond in writing.

**Annual Certification.** SpaceX must submit an annual certification, under penalty of perjury, signed by a responsible official, attesting to SpaceX's compliance with all applicable environmental laws, regulations, permits, or other authorizations related to FAA-licensed activities at Boca Chica, Texas.

- e. SpaceX is required to send the FAA copies of all monitoring data within 45 days of sampling the use of its deluge system.
- f. SpaceX will provide the FAA a copy of the TCEQ agreed order after it is approved and signed by TCEQ; TPDES permit No. WQ0005462000, when it is issued; and the Final CAFO for Docket No. CWA-06-2024-1768 when it is signed by EPA.

#### 10. **Environmental Requirements:**

- a. SpaceX must conduct its licensed activities in accordance with the representations made in its license application and must comply with all applicable Federal, Tribal, State, and local

environmental laws, regulations, and standards in carrying out its license activities. SpaceX has a continuing duty to obtain and maintain current all applicable environmental permits, licenses, authorizations, and approvals for activities under this license.

- b. SpaceX must continue to comply with or carry out, as appropriate, the conditions, limitations, mitigation measures, and monitoring plans set forth in any and all documents prepared by the FAA pursuant to the National Environmental Policy Act, appended to this license, and relied upon to reach a determination that the proposed licensed activities are consistent with applicable environmental requirements and will not significantly affect the quality of the human environment.

**11. Population Exposure Analysis Methodology Limitation:**

- a. SpaceX must modify its compliance to 14 CFR 450.123(c) no later than October 4, 2025, to include a process for updating the local population data at least annually.
- b. SpaceX must confirm that all population centers that contribute greater than 1E-6 estimated casualties within the day of launch 1E-11 probability of casualty contour are contained by the 1E-11 probability of casualty contour used to justify the extent of the high-fidelity population model, to ensure that all statistically significant local populations are of sufficient fidelity in accordance with 14 CFR 450.115(b).

**12. License Term:** License No. VOL 23-129 Rev. 5.2 terminates five (5) years from April 14, 2023.

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**OFFICE OF COMMERCIAL SPACE TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

**Office of Commercial  
Space Transportation  
License Order B-1  
Regarding**

**Financial Responsibility  
Requirements**

AUTHORIZED BY LICENSE NO. VOL 23-129 Rev. 5.2  
ISSUED TO:  
**Space Exploration Technologies, Corp.**

License No. VOL 23-129 Rev. 5.2 Order B-1 establishes the orders regarding the financial responsibility requirements of Space Exploration Technologies, Corp.'s Starship-Super Heavy vehicle launch from SpaceX Boca Chica Launch Complex, Boca Chica, Texas.

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1. **Authority:** This Order is issued to Space Exploration Technologies, Corp. (SpaceX) under 51 U.S.C. Subtitle V, chapter 509, and 14 CFR part 440.
  2. **Purpose:** This Order modifies License No. VOL 23-129 Rev. 5.2 issued by the Federal Aviation Administration's Office of Commercial Space Transportation, by prescribing financial responsibility requirements for licensed launch activities in accordance with 14 CFR 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 CFR § 440.3.
  4. **Liability Insurance:** Space Exploration Technologies, Corp. shall maintain a policy or policies of liability insurance in accordance with 14 CFR § 440.9(b) in the amount of:
    - a. Forty-Eight Million Dollars (\$48,000,000) for covered claims resulting from pre-flight ground operations performed from SpaceX Boca Chica Launch Complex, Boca Chica, Texas; and
    - b. Five Hundred Million Dollars (\$500,000,000) for covered claims resulting from the flight of the Starship-Super Heavy launch vehicle from SpaceX Boca Chica Launch Complex, Boca Chica, Texas.
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**OFFICE OF COMMERCIAL SPACE TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**