

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

N JO 7210.916

Effective Date:
December 26, 2019

Cancellation Date:
July 16, 2020

SUBJ: Commercial Space Operations Letters of Agreements (LOA)

1. Purpose of this Notice. This notice provides additional guidance to FAA JO 7210.3BB, Facility Operation and Administration, Chapter 4, Correspondence, Conferences, Records, and Reports.

2. Audience. This notice applies to the following Air Traffic Organization (ATO) service units: Air Traffic Services, Mission Support, and System Operations; and all associated air traffic control facilities.

3. Where can I Find This Notice? This notice is available on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices/ and the air traffic publications website at http://www.faa.gov/air_traffic/publications.

4. Explanation of Policy Change. This notice merges commercial space LOA guidance with similar LOA guidance under FAA Order JO 7210.3. The changes establish the ATO Service Center Operations Support Groups (OSGs) as the facilitator of all commercial space LOAs as well as identifies each office in which the OSG will coordinate. This notice also institutes commercial space LOA requirements not previously contained in FAA Order JO 7210.3 and provides LOA templates for each type of commercial space LOA.

5. Procedures/Action. Amend FAA Order JO 7210.3BB by changing paragraph 4-3-3 and inserting a new paragraph 4-3-6 and new Appendix 6 to read as follows:

4-3-3. DEVELOPING AN LOA

Air traffic managers must take the following action when developing an LOA: (See examples FIG 4-3-1 and FIG 4-3-2. For commercial space example LOAs, see Appendix 6.)

Appendix 6. Commercial Space LOA Templates

See attachment: Space Vehicle Launch-Reentry APPX 6 Template

See attachment: Launch and Reentry Site LOA APPX 6 Template

No further changes to paragraph

4-3-6. COMMERCIAL SPACE LOA

LOAs exist between ATC facilities and commercial space launch/reentry site, launch, and/or reentry operations proponents. FAA Order JO 7400.2, Procedures for Handling Airspace Matters contains

responsibilities and procedures for Commercial Space operations. The following lists the roles and responsibilities of organizations and individuals involved in the commercial space LOA process:

- a. The respective ATO Service Center OSG will serve as facilitator of the LOA development.
- b. ATO Service Center OSG will coordinate directly with ATC facilities, ATCSCC, the Office of Commercial Space Transportation (AST), the Office of Airports, and other offices having responsibilities in accordance with the operation.
- c. Each LOA must include, but is not limited to:
 - 1. Names and contact information for all parties involved.
 - 2. For launch/reentry operation LOAs: Description of operation to include vehicle type and characteristics; anticipated frequency of operations; and requested airspace, altitude, vehicle positioning data transmittal, and Aircraft Hazard Area (AHA) information.
 - 3. For launch/reentry site LOAs: Brief description of the launch/reentry site, types of anticipated operations, and anticipated frequency of proposed operations.
 - 4. Operating procedures to include communications, real-time coordination, NOTAM content issuance, contingency, and emergency.

Renumber paragraphs 4-3-6 thru 4-3-8 as 4-3-7 thru 4-3-9

No further changes to paragraph

7. Distribution. This notice is distributed to the following ATO service units: Terminal, En Route and Oceanic, Technical Operations, and System Operations Services; ATO Safety; Mission Support Services; the Air Traffic Safety Oversight Service (AOV); the William J. Hughes Technical Center; the Mike Monroney Aeronautical Center; National Air Traffic Controllers Association (NATCA); Professional Airway Systems Specialists (PASS); National Association of Government Employees: (NAGE) and to interested aviation public.

8. Background. The Area Forecast for the CONUS has been retired. The Aviation Surface Forecast and the Aviation Cloud Forecast are static graphical forecast images and are now supplied by the Aviation Weather Center (AWC) via NOAAPORT and static URLs for en route forecast awareness.



Maurice Hoffman
Director, Policy, AJV-P
Air Traffic Organization

11.22.19

Date Signed

[Name(s) of affected Air Traffic Control Facilities (lead facility listed first)], Air Traffic Control System Command Center Space Operations, [Operator]

Letter of Agreement

Effective:

Subject: Coordination of [Operator] Launch/Reentry Operations from [name and location of Launch and (if applicable) Reentry site]

1. Purpose:

State the purpose of the Letters of Agreement (LOA), type of operation (launch, launch with reentry), and location of operation (name and location of launch and (if applicable) Reentry site). If LOA is for a one-time operation, state that.

Sample text:

This Letters of Agreement (LOA) provides procedures for the integration and appropriate coordination of [licensed/permitted] [*Vehicle Type*: horizontal/vertical] [launch/launch with reentry/hover-test] operations into the National Airspace System (NAS) from [name and location of launch and (if applicable) Reentry site].

2. Cancellation:

Include any previous LOA canceled by this one [Subject and Effective Date of LOA being cancelled].
State agreement to review LOA annually.

Sample text:

This LOA will remain in effect until cancelled by any signatory entity and will be reviewed annually throughout the life of the [license/permit] or when modifications are made to the [license/permit].

3. Scope:

List the pertinent ATC facilities, Operator, and any additional stakeholders, including Air Traffic Control System Command Center (ATCSCC) Space Operations, Federal Ranges, and military facilities as applicable. State distribution of the LOA. The distribution should include, at a minimum, all signatories and the Office of Commercial Space Transportation (AST).

Sample Text:

This LOA is pertinent to [ATC facilities], [additional stakeholders], and [Operator]. It is to be distributed to all signatories and stakeholders].

4. Responsibilities:

State the responsibilities of the Operator, lead ATC facility, and as needed, any other stakeholders and/or affected facilities.

- a. Operator must fulfill requirements provided in the Sample Text for this section.
- b. Lead ATC facility must fulfill requirements provided in the Sample Text for this section and
 1. Fill out the Points of Contact Table (Attachment B).
 2. Fill out the Actions Timetable (Attachment C)
- c. *(As needed)* Other stakeholders and affected facilities must:
 1. Ensure appropriate personnel are aware of the provisions of this agreement.

Sample text:

- a. [Operator] must:
 1. Ensure all Operator [and their designees] personnel operating within the scope of this agreement are knowledgeable of, understand, and comply with the provisions of this agreement.
 2. Establish, make available, and be prepared to execute approved contingency plan(s).
 - a) Unless an established contingency plan has been approved by all necessary parties, [Operator] must coordinate requirements and get approval from [lead ATC facility] for contingency plan(s) at least [XX] calendar days prior to each operation.
 3. Follow the procedures in Section 5 and the Action Timetable (Attachment C) with regards to communications and notifications.
 4. Notify the parties in the Points of Contact Table (Attachment B) immediately if scheduled operations are cancelled.
 5. *(As needed)* Develop separate agreements with foreign Air Navigation Service Providers when airspace coordination outside of the U.S. Flight Information Region is needed for the operation.
- b. [Lead ATC facility] must:
 1. Ensure all personnel responsible for providing air traffic service within the scope of this agreement are knowledgeable of, understand, and comply with the provisions of this agreement. This includes notification to other affected facilities.
 2. Ensure appropriate [lead ATC facility] personnel are aware of and prepared to execute approved contingency plan(s).
 3. Communicate with necessary facilities and ascertain their readiness to execute approved contingency plan(s).
 4. Except when real time notifications of actual start of activity and end of activity times are provided to the facility via ATCSCC coordination, take appropriate actions to restrict airspace use during the effective times of the aircraft hazard area(s)
 5. Take additional measures for public safety deemed necessary by 14 CFR Parts 400-460.
- c. *(As needed)* [Other stakeholders and affected facilities] must:
 1. Ensure appropriate personnel are aware of the provisions of this agreement.

2. Ensure appropriate personnel are aware of and prepared to execute approved contingency plan(s).
- d. Deviations from responsibilities and/or procedures established in this LOA must be coordinated prior to each operation, and responsibilities must be clearly defined in each case.

5. Procedures:

Specify timeline and details for activities to take place prior to, during, and upon completion of operation.

Specify frequency of proposed operations and any limitations when considering dates and times of operations. Include any restrictions on days of week and/or times of day operations that may or may not occur. Restrictions may include times when military operations require use of certain airspace.

Specify procedure(s) for handling anomalies and emergencies. Information conveyed should include the location of event (latitude and longitude, represented as degree-minute-second), vehicle state, projected time the hazard will no longer be present, and any other pertinent details.

Sample text:

- a. [Operator] must:
 1. Provide a Launch/Reentry Forecast Package to the parties specified in the Points of Contact Table (Attachment B), except CARF, at least once every [XX] months. These forecasts will include a best estimate of all anticipated launches for the upcoming [XX] months.
 2. Provide [lead ATC facility] a pre-planning package a minimum of [XX] calendar days prior to the planned operation. At a minimum, the package should include:
 - a) The launch/reentry window.
 - b) The best estimate of the geographic definition of the hazard area(s) (latitude and longitude, represented as degree-minute-second) for the primary date and any back-up date(s).
 - c) *(As needed)* Any support aircraft's type and call sign.
 3. *(As needed)* Submit Altitude Reservation (ALTRV) request(s) to CARF (and email a copy of the request to the [lead ATC facility]) a minimum of [XX] days prior to the planned operation.
 4. Verify the issuance of the appropriate NOTAMs.
 5. No less than [XX] minutes in advance of a planned operation, notification will be given by [Operator] to [lead ATC facility] of intent for the [launch/hover-test] to take place.
 6. During the operation, a [Operator] representative must participate on an FAA Hotline teleconference with [lead ATC facility] and ATCSCC Space Operations (see Actions Timetable, Attachment C, for phone number). Communication on the FAA Hotline teleconference must be established no less than [XX] minutes prior to planned operation.

- a) The [Operator] representative must be able to provide real-time verbal indications of the status of the operation, its progress along the launch/reentry trajectory, and occurrence of significant events.
 - b) Participation by representative(s) from [other stakeholders and affected facilities] is advised.
7. Notify [lead ATC facility] upon completion of the operation.
 8. *(As needed)* Contact CARF and request that the appropriate ALTRVs be cancelled.
 9. In the event of an anomaly, a [Operator] representative must immediately notify [lead ATC facility], via FAA Hotline teleconference, of the occurrence of the anomaly. Information communicated should include, at a minimum:
 - a) The last known state of the vehicle.
 - b) The location of the off-nominal event (latitude and longitude, represented as degree-minute-second).
 - c) The predicted location(s) impacted (latitude and longitude, represented as degree-minute-second) (when known).
 - d) Projected time the hazard(s) will no longer be present (when known).
 - e) Other information that will provide estimated positions of hazards.
 10. In the event of an emergency, [Operator] must immediately contact [lead ATC facility], via FAA Hotline teleconference and email all the parties listed in the Points of Contact Table (Attachment B). Information conveyed should include, at a minimum:
 - a) The last known state of the vehicle.
 - b) The location of the event (latitude and longitude, represented as degree-minute-second).
 - c) The predicted location(s) impacted (latitude and longitude, represented as degree-minute-second) (when known).
 - d) Projected time the hazard(s) will no longer be present (when known).
 - e) Other information that will provide estimated positions of hazards.
- b. [Lead ATC facility]:
1. Upon notification of a completed operation, [lead ATC facility] must cancel appropriate airspace restrictions and/or NOTAMs.
 2. In the event when [lead ATC facility] becomes aware of a condition that would make the launch/reentry unsafe, [lead ATC facility] must immediately contact, via FAA Hotline, [Operator] and all other parties listed in the Points of Contact Table (Attachment B).

6. Attachments

- a. Signatures
- b. Points of Contact Table
- c. Actions Timetable
- d. Graphics/Maps
 - o Launch/Reentry Site Description/Map
 - o Aircraft Hazard Area Description/Map
 - o Temporary Flight Restriction Description/Map

- o Air Traffic Control Assigned Airspace Description/Map
- e. Commercial Launch/Reentry Site LOA

Attachment A: Signatures

[Lead ATC Facility]

[Operator]

[ATCSCC Space Operations]

[as appropriate, other stakeholders, including Federal Ranges and military facilities]

Attachment B: Points of Contact Table

The following table should be completed by the [lead ATC facility] and the information should be verified prior to every operation.

Office	Phone #	Email	Responsibility
[Operator]			
[Lead ATC Facility] Supervisor in Charge			
[Lead ATC Facility] Traffic Management Unit			
ATCSCC Space Operations			
Central Altitude Reservation Function (CARF)			
National Traffic Management Office (NTMO)			

Attachment C: Actions Timetable

The following table should be completed by [lead ATC facility]. In coordination with the [lead ATC facility], [Operator] must ensure that the following actions are completed at the defined intervals.

Time	Event	Remarks	Date Completed
T – [XX] months Suggestion: T – 6 months	Submit Launch/reentry Forecast Package	Operator should provide best estimate of all known launch/reentry dates for upcoming six months.	
T – [XX] calendar days Suggestion: T – 30 – 60 calendar days	Coordinate launch/reentry corridor/hazard area(s)	Operator should coordinate with ATCSCC Space Operations and as appropriate, other affected facilities.	

Time	Event	Remarks	Date Completed
<p>T – [XX] calendar days Suggestion: T – 10 calendar days</p>	<p>Submit Pre-Planning Package</p>	<p>Operator should provide a description of the Aircraft Hazard Area(s), along with date(s) and time(s) for launch/reentry.</p>	
<p>T – [XX] calendar days Suggestion: T – 5 - 14 calendar days</p>	<p>File an Altitude Reservation (ALTRV) request with CARF (as needed)</p>	<p>Operator is responsible for coordinating all necessary ALTRV requests. Requests should be submitted via email to _____@FAA.gov. A copy of the request should also be emailed to [lead ATC facility]. Contact:</p>	
<p>T – [XX] hours</p>	<p>Verify issuance of appropriate airspace notices (NOTAMs and TFRs)</p>	<p>Operator should contact [lead ATC facility] for issuance of TFR(s) and NOTAM(s) (as needed). Per 14 CFR § 91.143, TFRs need to be issued at least ___ hours in advance of the scheduled operation.</p>	
<p>T – [XX] hours and repeat again at T – [XX] hours Suggestion: T – 24 hours and 3 hours</p>	<p>Provide operational status report</p>	<p>Operator contacts [lead ATC facility] via [telephone/email] and provides operational status report, which includes confirmation of intent and specifics of operation.</p>	
<p>T – [XX] minutes Suggestion: T – 60 - 30 minutes</p>	<p>Establish Hotline connection</p>	<p>[FAA Hotline telephone #] The operation will be delayed or terminated if the Operator does not establish communications via FAA Hotline teleconference. Operator must have a representative on the FAA Hotline teleconference until the operation is complete.</p>	

Time	Event	Remarks	Date Completed
<p>T – [XX] minutes Suggestion: T – 30 minutes</p>	<p>Provide operational status report</p>	<p>Operator provides operational status report. This report includes confirmation that the operation will take place as scheduled.</p> <p>As necessary, Operator should continue to communicate any significant operational changes.</p>	
<p>T – [XX] minutes and repeat at T – [XX] minutes Suggestion: T – 10 minutes and T – 5 minutes</p>	<p>Receive final clearance or confirmation of continued approved mission status</p>	<p>Operator must receive clearance or confirmation of continued approved mission status from [lead ATC facility] to proceed with operation.</p>	
<p>During operation</p>	<p>Maintain real-time communication via FAA Hotline teleconference</p>	<p>Operator must provide real-time verbal indications on the status of the vehicle.</p>	
<p>Post-operation or mission cancellation</p>	<p>Notify ATC and CARF (if applicable) of completion or cancellation of operation</p>	<p>ATC must be notified when operation is complete. TFR(s), ALTRV(s), and any other necessary notices should be cancelled as soon as practicable.</p>	
	<p>Schedule post-operation debrief</p>	<p>A debrief should occur ideally within __ hours, but no later than __ hours of the completion of the operation. A debrief should be conducted even if no off-nominal activity occurred.</p>	

Instructions for Letter of Agreement Template: Launch and Reentry Site

Letter of Agreement

Effective:

Subject: Operations at [Name and location of Launch and Reentry Site]

1. Purpose:

State the purpose of the Letters of Agreement (LOA), type(s) of anticipated operation (*if launch:* [horizontal/vertical]) [launch/reentry], frequency of proposed operation(s) (if known), and name and location of Launch and Reentry Site.

Sample text:

This LOA establishes a framework for the coordination and planning of procedures for [licensed/permitted] (*if launch:* [horizontal/vertical]) [launch/reentry] operations into the National Airspace System from [name and location of Launch and Reentry Site].

2. Cancellation:

Include any previous LOA canceled by this one [Subject and Effective Date of LOA being cancelled]. State agreement to review LOA annually.

Sample text:

This LOA will remain in effect until cancelled by any signatory entity and will be reviewed annually throughout the life of the license or when modifications are made to the license.

3. Scope:

List the affected ATC facilities; Launch/Reentry Site Operator; and any additional stakeholders, including Air Traffic Control System Command Center (ATCSCC) Space Operations, Federal Ranges, and military facilities, as applicable.

State that this LOA does not guarantee the approval of operations from the Launch and Reentry Site. Once a Vehicle Operator has been identified and its operations approved, responsibilities and procedures will be outlined in a separate letter of agreement with each Vehicle Operator.

State that this LOA does not confer any proprietary, property, or exclusive right in the use of airspace or outer space referenced in Code of Federal Regulation (CFR) 420.41.

State distribution of the LOA. The distribution should include, at a minimum, all signatories.

Sample text:

This LOA is pertinent to [ATC facilities and stakeholders; including Air Traffic Control System Command Center (ATCSCC) Space Operations] and [Launch/Reentry Site Operator]. It does not guarantee the approval of operations from the Launch/Reentry Site. Once a Vehicle Operator has been identified and its operations approved, responsibilities and procedures will be outlined in a separate LOA with each Vehicle Operator.

This LOA does not confer any proprietary, property, or exclusive right in the use of airspace or outer space referenced in Code of Federal Regulation (CFR) 420.41.

This LOA is to be distributed to the signatories, additional stakeholders, and the Office of Commercial Space Transportation (AST).

[Name(s) of affected Air Traffic Control Facilities (lead facility listed first)], Air Traffic Control System Command Center Space Operations, [Launch and Reentry Site Operator]

4. Responsibilities:

State the responsibilities of the Site Operator, lead ATC Facility, and as needed, any other stakeholders and/or affected facilities. All parties named within this letter of agreement will work collaboratively to develop the following:

- a. Procedures for notification and scheduling of operations, to include procedures for the issuance of Notices to Airmen, Altitude Reservations and Special Activity Airspace access.
- b. Plans for communication between the operator and the FAA as necessary, before, during, and after a scheduled operation.
- c. Plans and procedures for cancellations, contingencies, and emergencies.
- d. Plans and procedures for any other measures deemed necessary by the FAA to ensure public health and safety.

Sample text:

- a. [Launch/Reentry Site Operator] is responsible for the management, operation, and maintenance of the Launch/Reentry Site. This includes the coordination with users of its facility and the responsibility for ensuring all necessary information regarding operations is provided to the appropriate ATC facilities.
- b. The FAA is responsible for the safe, orderly, and expeditious flow of known air traffic under its control. It is also responsible for the dissemination of pertinent information to the aviation community.
- c. All parties named in this LOA will work collaboratively to develop procedures and other such measures deemed necessary to protect public health and safety.

5. Attachments

- a. Signatures
- b. Points of Contact Table
- c. Graphics/Maps
 - o Physical Site Description/Map
 - o Airspace Description/Map(s)

[Name(s) of affected Air Traffic Control Facilities (lead facility listed first)], Air Traffic Control System Command Center Space Operations, [Launch and Reentry Site Operator]

Attachment A: Signatures

[Lead ATC Facility]

[Launch/Reentry Site Operator]

[ATCSCC Space Operations]

[As appropriate, other stakeholders, including Federal Ranges and military facilities.]

[Name(s) of affected Air Traffic Control Facilities (lead facility listed first)], Air Traffic Control System Command Center Space Operations, [Launch and Reentry Site Operator]

Attachment B: Points of Contact Table

The following table should be completed by the [lead ATC facility] and the information should be verified prior to every operation.

Office	Phone #	Email	Responsibility
[Primary ATC Facility] Airspace and Procedures Office			
[Primary ATC Facility] Traffic Management Unit			
ATCSCC Space Operations			
[Launch and Reentry Site Operator]			