

**MEMORANDUM OF UNDERSTANDING
BETWEEN
AIR FORCE SPACE COMMAND
AND
FEDERAL AVIATION ADMINISTRATION
OFFICE OF THE ASSOCIATE ADMINISTRATOR FOR
COMMERCIAL SPACE TRANSPORTATION
FOR
RESOLVING REQUESTS FOR
RELIEF FROM COMMON LAUNCH SAFETY
REQUIREMENTS**



I. PURPOSE

This Memorandum of Understanding (MOU) explains the roles and responsibilities of Air Force Space Command (AFSPC) and the Federal Aviation Administration (FAA) Office of the Associate Administrator for Commercial Space Transportation in resolving requests from launch operators for relief from AFSPC and FAA common launch safety requirements.

II. SCOPE

This MOU applies to the implementation of AFSPC and FAA common launch safety requirements for Government and FAA-licensed launches. This MOU contains provisions for timely and efficient coordination between the two agencies as they exercise their roles and responsibilities for overseeing safety of commercial space launch and reentry, without altering or otherwise modifying the roles and responsibilities delineated by statute or national policy applicable to the FAA or AFSPC.

III. AUTHORITY

This MOU is consistent with the Memorandum of Agreement (MOA) Between the Department of the Air Force and the Federal Aviation Administration on Safety for Space Transportation and Range Activities, January 16, 2001. Section VI, Paragraph C of the MOA directs the Air Force and the FAA to work together to achieve common launch safety requirements and to “develop, maintain, and implement a process for communication with respect to interpretations of the common safety requirements as they apply to government and FAA-licensed launches.” The MOA directs that this process be utilized in connection with “requests from any launch operator for a waiver, deviation, or meets intent certification,” or, in other words, for relief from any common launch safety requirement. For FAA-licensed launches from AFSPC ranges, the MOA directs that the Air Force and FAA coordinate to resolve any relief issues related to the common launch safety requirements.

IV. OBJECTIVES

This MOU is intended to:

A. Provide a framework for AFSPC and FAA implementation of the agreements made in the January 2001 MOA regarding coordination on issues involving relief from AFSPC and FAA common launch safety requirements.

B. Minimize the regulatory burden on the U.S. commercial space sector by clearly delineating federal agency requirements and responsibilities with regard to interagency coordination on issues involving relief from the common launch safety requirements to preclude unnecessary overlap and duplication.

C. Define an interagency process for coordination on tailoring of the common launch safety requirements during the development of a launch vehicle.

D. Define an interagency process for resolving requests for relief from common launch safety requirements that:

i. Builds upon and enhances current AFSPC and FAA processes for resolving relief issues.

ii. Provides for sharing of data to avoid duplication of effort and allows for joint resolution of issues while ensuring both agencies' requirements and concerns are addressed.

iii. For FAA-licensed launches from AFSPC ranges, provides for interagency coordination on routine requests for relief prior to day of launch and time critical requests for relief on the day of launch.

iv. For FAA-licensed launches from non-AFSPC ranges and government launches, provides for sharing of data on relief issues related to AFSPC and FAA common launch safety requirements.

V. DEFINITIONS

A. Equivalent level of safety means an approximately equal level of safety. An equivalent level of safety may involve a change to the level of expected risk that is not statistically or mathematically significant as determined by qualitative or quantitative risk analysis. Equivalent level of safety determinations made by AFSPC ranges have been referred to as "meets intent certifications."

B. Common launch safety requirements means requirements that are shared by the FAA and AFSPC and that protect the public from hazards associated with space launch. These

requirements will be codified in FAA regulations, Code of Federal Regulations 14 C.F.R. Ch. III, through FAA rulemaking. At AFSPC ranges, the common launch safety requirements will be implemented in AFSPC range safety documents.

C. Launch operator means a person or entity who conducts or proposes to conduct the launch of a launch vehicle. AFSPC often refers to a launch operator as one of its range users.

D. Tailoring means the process used at AFSPC ranges beginning at program introduction where AFSPC (range safety organizations) and a range user (launch operator) review each range safety requirement and jointly document whether or not the requirement is applicable to the range user and if it is applicable, whether or not the range user will meet the requirement as written or achieve an equivalent level of safety through an acceptable alternative. The FAA and a launch operator undergo a similar process through licensing for launches from non-federal launch sites.

E. Waiver means a decision that allows a launch operator to continue with a launch, including launch processing, even though the launch operator does not satisfy a specific safety requirement and is not able to demonstrate an equivalent level of safety. A waiver applies where a failure to satisfy a safety requirement involves a statistically or mathematically significant increase in expected risk as determined through quantitative or qualitative risk analysis, and the activity may or may not exceed the public risk criteria.

VI. GENERAL

The Air Force and FAA established Common Standards Working Group (CSWG) is responsible for developing and ensuring the consistency of the common launch safety requirements that will be contained in FAA regulations and AFSPC range safety requirements. The AFSPC range safety documents will include the common launch safety requirements; however, they will also address a broader range of issues. Once the AFSPC and FAA common launch safety requirements are final, the AFSPC ranges, in day-to-day practice, will only need to work from AFSPC range safety documents. The FAA baseline safety assessments of each AFSPC range will cross-reference the common launch safety requirements between the FAA regulations and AFSPC requirements. The complexity of launch vehicle systems and operations causes situations where strict compliance with specific requirements may be difficult or impossible. In these situations, a launch operator may seek relief from a requirement. The FAA and AFSPC may approve relief from a common launch safety requirement by finding an equivalent level of

safety or granting a waiver based on criteria in AFSPC range safety documents and 14 CFR Ch. III and following the coordination process outlined in this MOU. The CSWG will periodically review the implementation of this MOU as required and mutually agreed to and propose any future updates to enhance AFSPC and FAA coordination on relief issues. At a minimum, this MOU will be reviewed every four years, in conjunction with review of the January 2001 MOA.

VII. FAA-LICENSED LAUNCHES FROM AFSPC RANGES

A. AFSPC will continue to act as the primary interface with the launch operator for requests for relief from safety requirements. The Launch Wing Commander, who is the Launch Decision Authority, determines whether a launch attempt may proceed. Neither agency may overrule the other's denial of a request for relief from a common launch safety requirement.

B. The FAA and AFSPC will jointly stress to the launch operator that the launch operator's first course of action when seeking relief from a common launch safety requirement is to develop an alternative that provides an equivalent level of safety. AFSPC and FAA staff will work jointly with the launch operator's staff as early as possible to identify the best technical approach.

C. The FAA and AFSPC will notify each other of all requests for relief. Notification of requests may be accomplished by telephone, fax, or e-mail to a designated representative.

D. Both agencies will share copies of all formal documentation used by a launch operator to request relief and any supporting documents. Proprietary data will be properly protected.

E. For a request for relief for a scheduled launch, the FAA and AFSPC will first estimate whether there is sufficient time before the launch to resolve the request. The agencies will immediately inform the launch operator if AFSPC or the FAA believes that there may not be sufficient time to resolve the issue before the launch.

F. The FAA will identify any licensing activity that may be required with respect to a request for relief, such as changes to a license application that may be in process or preparation of a license modification for an existing license.

G. The FAA and AFSPC will jointly review each request with the requesting launch operator. This review may be accomplished via teleconferences, e-mail correspondence, or face-to-face meetings.

H. Both agencies will notify each other of all review activities. A review activity will not proceed in the absence of one agency without the consent of that agency. The agencies will have an initial government-only face-to-face meeting or telephone conference on a relief issue early in the process to determine whether there are any areas of conflict and to resolve a conflict, if one exists.

I. For each review activity, both agencies will share copies of any launch operator presentation materials and the results of the review activity.

J. After the final clear to launch poll (FCLP) the AFSPC Launch Decision Authority or designee will determine, using his or her best judgment, whether the common launch safety requirements remain satisfied. The AFSPC Launch Decision Authority or designee may allow a launch to proceed in the event of a noncompliance with an AFSPC or a launch operator requirement only if he or she determines, using his or her best judgment, that the noncompliance does not violate a common launch safety requirement.

K. The FAA and AFSPC will share copies of all documents used by either agency to resolve a request for relief from a common launch safety requirement. The documentation process will incorporate the following:

- i. The FAA will complete an attachment (see Attachment A) that both agencies will include as part of their approval documents. The attachment will:
 - a) Identify each affected common launch safety requirement and provide references to the applicable AFSPC and FAA safety requirements documents;
 - b) Identify the extent of interagency coordination in reviewing the request for relief and identify the AFSPC, FAA, and launch operator points of contact;
 - c) State the FAA's position on the resolution of the request for relief and any related issues including all technical justification for the FAA's position;
 - d) State the extent and applicability of any relief that has been approved for FAA-licensed launches (such as, one time, limited, or permanent); and
 - e) Identify any follow-on FAA licensing activities for future launches.
- ii. For any resolution made less than 24 hours prior to a launch attempt or launch, the FAA and AFSPC will jointly document the resolution in the form of a post-launch attempt or post launch report. The report will identify all range and launch vehicle systems involved and the day of launch conditions that led to the request for relief as well as all technical justification for the resolution.

VIII. FAA-LICENSED LAUNCHES FROM NON-AFSPC RANGES AND GOVERNMENT LAUNCHES

A. Government launches of dual use launch vehicles. For government launches of launch vehicles used for both government and FAA-licensed launches, AFSPC will invite the FAA to participate in AFSPC's review of requests for relief from common launch safety requirements. The FAA recognizes that it does not have jurisdiction over government launches, which may take place from federal or non-federal launch sites. AFSPC recognizes that an FAA-licensed launch site operator may only operate within the scope of its license for any launch from that site. The two agencies will coordinate for informational purposes in accordance with the following:

i. AFSPC, the FAA, and the launch operator will identify any issues that may have an effect on FAA-licensed launches. In accordance with the January 2001 MOA, the two agencies will communicate with respect to interpretations of the common launch safety requirements and will share, to the greatest extent possible, launch vehicle and launch support equipment safety and performance data common to licensed and non-licensed launches for the purposes of maintaining an accurate baseline concerning a dual use system's compliance with the common launch safety requirements.

ii. AFSPC will provide the FAA copies of the AFSPC resolution documentation for relief from a common launch safety requirement. The FAA will provide AFSPC and the launch operator a completed copy of attachment A of this MOU depending on the level of involvement of the FAA in the review process and whether any issues are identified that would have an effect on any potential FAA-licensed launch.

B. Government-only launch vehicles. For launch vehicles and launch support equipment used only for government launches from AFSPC ranges, the FAA will be invited to participate in reviewing requests for relief from common launch safety requirements at the discretion of AFSPC. For government launches from FAA licensed launch sites, the FAA may participate upon the FAA's request.

C. FAA-licensed launches from Non-AFSPC Ranges. The FAA will invite AFSPC to participate in the FAA's review of requests for relief from common launch safety requirements

for a launch from a non-federal launch site where the proposed action might impact Department of Defense missions. The two agencies will coordinate in accordance with the following:

i. AFSPC and the FAA will share with each other their respective interpretations of the common requirements and will share launch vehicle and launch support equipment safety and performance data common to licensed and non-licensed launches for the purposes of maintaining an accurate baseline concerning launch vehicle safety and performance.

ii. The FAA will provide AFSPC copies of the resolution documentation for relief from the common launch safety requirements. The documentation will carry attachment A of this MOU.

IX. TAILORING

A. AFSPC (range safety organizations) and the FAA will jointly participate in all tailoring of the common launch safety requirements for launch vehicles used for licensed launches from federal ranges.

B. AFSPC and the FAA will coordinate on the review of any request for equivalent level of safety for a common launch safety requirement that is part of tailoring or otherwise according to section VII of this MOU.

C. AFSPC and the FAA will ensure that each equivalent level of safety determination granted as part of tailoring is documented according to section VII of this MOU or in equivalent documentation specific to the tailoring process. The documentation will include technical justification for approval and will become part of AFSPC's record for the associated launch vehicle program and part of the FAA licensing record.

Lance Lord, General, USAF
Commander
Air Force Space Command

Patricia Grace Smith
Associate Administrator
for Commercial Space Transportation

RELIEF FROM AFSPC/FAA COMMON LAUNCH SAFETY REQUIREMENT	
Subject:	Date:
Summary:	
AFSPC Requirement Reference(s):	FAA Requirement Reference(s):
Interagency Coordination:	
Technical Points of Contact:	
AFSPC:	FAA: Launch Operator:
FAA Position:	
Extent and applicability of any relief for FAA-licensed launch: (such as, one time, limited, or permanent):	
FAA Licensing Activity:	
Status:	
<hr/> Manager, Licensing and Safety Division FAA Office of the Associate Administrator for Commercial Space Transportation	