

FAA-99-5833-12

DEPT. OF TRANSPORTATION
DOCKETS

**COMMENTS OF
LOCKHEED MARTIN CORPORATION
to the
NOTICE OF PROPOSED RULEMAKING
on
LICENSING AND SAFETY REQUIREMENTS
FOR OPERATION OF A LAUNCH SITE**

99 SEP 22 AM 9:40

September 23, 1999

Lockheed Martin Corporation ("LMC") hereby submits the following comments in response to the Notice of Proposed Rulemaking ("NPRM") on Licensing and Safety Requirements for Operation of a Launch Site, issued on June 25, 1999, by the Federal Aviation Administration ("FAA"), Office of the Associate Administrator for Commercial Space Transportation (the "Office").

Introduction

LMC is the world's largest provider of space transportation hardware and services, and a major supplier of civil, military and commercial spacecraft providing communications, remote sensing, global positioning and scientific services and capabilities to public and private sector customers worldwide.

As you know, commercial Titan and Atlas launches provided by our heritage Martin Marietta and General Dynamics companies were among the first to be carried out pursuant to launch operator's licenses issued by the Office's predecessor, the Office of Commercial Space Transportation, pursuant to its authority under the Commercial Space Launch Act of 1984, as amended (49 U.S.C. §§ 70101-21) (the "CSLA"). Today, launch operations using LMC's commercial Atlas and Athena families of launch vehicles are conducted pursuant to licenses issued by the Office. To date, almost all of these launches have been conducted at federal launch ranges either on the West Coast at Vandenberg Air Force Base ("VAFB") or on the East Coast at Cape Canaveral Air Station ("CCAS"). In future, however, LMC intends increasingly to take advantage of facilities available at non-federal launch sites, commonly referred to as spaceports, that have been licensed by the Office.¹

For example, on January 26, 1999, we conducted the launch of an Athena I launch vehicle carrying the Republic of China's ROCSAT-1 satellite from Spaceport Florida Authority's Launch Complex-46 located at CCAS. We also have conducted launches of NASA spacecraft at Spaceport Florida. In October 2000, LMC plans to conduct the launch of an Athena II launch vehicle carrying a NASA spacecraft from the Kodiak Launch Complex on Kodiak Island, Alaska.

¹ These spaceports are the California Spaceport operated by Spaceport Systems International, L.P., Spaceport Florida operated by the Spaceport Florida Authority, the Virginia Spaceflight Center operated by the Virginia Commercial Space Flight Authority and the Kodiak Launch Complex operated by the Alaska Aerospace Development Corporation.

As an experienced licensed launch operator, a user of federal launch ranges and spaceports and, possibly, a future operator of a spaceport, LMC is particularly interested in the subject NPRM. LMC appreciates the opportunity to provide comments on this important effort by the Office to establish a transparent and predictable licensing regime for spaceport operators and, as such, further implement the CSLA.

Discussion

LMC notes that the proposed regulations set forth in the NPRM would apply to any person seeking a license to operate a launch site or to a person licensed under this part of the regulations. NPRM § 420.3. Such a license would authorize a licensee to: (a) operate a launch site in accordance with the representations contained in its license application and the terms and conditions of its license; and (b) offer its launch site to a launch operator for each launch point for the type and any class of launch vehicle identified in the license application and upon which the licensing determination is based. NPRM § 420.41(a) and (b). The proposed regulations would not, however, impose on the commercial launch services provider (*i.e.*, the launch operator) an additional licensing obligation because, whether launching from a federal launch range, a launch site located on a federal launch range or a non-federal launch site, a launch operator would be responsible for ground and flight safety under its FAA license. Because this responsibility would be heightened when launching from a commercial launch site due to the absence of federal launch range oversight, it will be incumbent upon a launch operator to demonstrate to the Office the adequacy of its ground and flight safety procedures in its application to conduct a launch at a non-federal launch site. 64 Fed. Reg. 34,317.

With this situation in mind, LMC has considered whether the proposed requirements set forth in the NPRM that may affect launch operators performing services at commercial launch sites are consistent with ground and flight safety requirements imposed on launch operators by DoD and NASA at federal launch ranges (principally EWR 127-1), and by the Office through its current practices at non-federal launch ranges. Our general comments and questions with respect to this issue are set forth below.

1. Use of EWR-127-1 at Non-Federal Launch Ranges

The proposed regulations indicate that the Office recognizes and appreciates the success that the Air Force has had in applying the standards set forth in EWR 127-1 for launch range safety at federal facilities. As you may know, the Air Force tailors the standards set forth in EWR 127-1 to each operator prior to such operator entering the federal range for the purposes of conducting launch activities. The purpose of this tailoring is to ensure that the safety standards are appropriate for the unique circumstances surrounding a particular launch campaign. In LMC's experience, the Air Force's approach in this regard has been very effective with respect to ensuring safety, without being unduly burdensome to the operator. If the Office intends to adopt EWR 127-1, LMC strongly recommends that the Office, like the Air Force, employ a case-by-case tailoring of the standards.

2. Explosive Site Plan Review

LMC notes that throughout the NPRM, the Office indicates that it does not wish to duplicate or supercede existing regulatory structures. With this in mind, the Office might consider applying the comprehensive explosives safety requirements of Department of Defense (“DOD”) Standard 6055.9 to non-federal launch sites instead of developing a new standard. We offer this suggestion because: (a) DoD Standard 6055.9 represents a well-developed and mature regime that forms the basis of what have been impressive safety records at VAFB and CCAS; and (b) implementation of this Standard at non-federal launch sites would help to ensure consistent regulation of operations involving explosives at both federal and non-federal, existing and new launch facilities.

We also note that the Office proposes to simplify existing Explosives Safety Quantity Distance (“ESQD”) requirements by eliminating all but one of the existing quantity distance categories (intra-line), and by creating a new category, which would be called a “public area.” We are concerned that the imposition of a new ESQD structure, distances and definitions would create an imbalance between practices at federal ranges and practices at non-federal launch sites and facilities covered by the proposed regulations. Therefore, in the interest of safety, logistical efficiency and fairness to licensees and users, we believe that both federal and non-federal launch facilities should have to comply with the same ESQD standards.

The NPRM states that, because of the complexity of hardening standards, the Office proposes to address hardening on a case-by-case basis. 64 Fed. Reg. 34,322. We agree with this approach and suggest that, in its review of hardening standards, the Office refer to National Fire Protection Agency (“NFPA”) 70 and NFPA 496. If the Office intends to use these documents, reference to them in the NPRM would be helpful.

Lastly, with respect to solid and liquid bi-propellants at the launch pads, the use of the Q-D calculated by the worst of the two (solid vs. liquid) is preferred as this allows greater flexibility in operations and launch vehicle design. 64 Fed. Reg. 34,333.

3. Lightning

The practice of lightning avoidance should be allowed, in fact strongly suggested, but a launch site operator should not be required to install and maintain an independent lightning protection system. We would expect launch site operators to maintain a lightning protection system because not having one could impair a launch site operator’s ability to attract customers (*i.e.* launch operators) to the launch site. In our experience, we have found NFPA 780 to be an appropriate and useful standard for a lightning protection system and, in the interest of consistency and efficiency, would recommend that it be the standard required at non-federal launch sites. 64 Fed. Reg. 34,365; 14 C.F.R. § 420.63(b).

4. ESD

This is an operations issue in which the launch site operator is not directly involved. Therefore, we agree with the Office's decision not to include rules regarding ESD in this NPRM. Any new rules on control of static electricity should reflect current procedures used by the launch operators.

5. Operational Responsibilities

A launch site operator should be required to establish and maintain at its facility a range safety/tracking system that functions at an industry-wide standard. A requirement of its launch site operator's license should be the demonstration to the Office that the system meets this industry standard. In turn, a requirement of the launch operator's license should be a demonstration to the Office that its launch vehicle interfaces with this standardized range safety/tracking system. In our opinion, this is an area in which the Office should be dedicating a great deal of attention because whether the space transportation industry will be able to achieve airport-like operations will depend in large part on the standardization and interoperability of range safety/tracking systems.

6. Accident Investigation Plan

Section 420.59 of the proposed rule would require both the launch site operator and the launch operator to have accident investigation plans. It is not clear, however, which plan would have priority if, in the event of an accident, there were conflicts between the launch site operator's plan and the launch operator's plan. Would the answer to this question depend upon the nature of or circumstances surrounding the accident? It would be helpful to have additional guidance from the Office on this point.

* * * * *

LMC appreciates the Office's attention to and consideration of its comments. We are available to answer any questions the Office may have with respect to this submission.