Administrative Changes to AFSPCI10-1208, *Spacelift Operations*

OPR: A2/3/6SR

References throughout to "HQ AFSPC/A3" are hereby changed to "HQ AFSPC A2/3/6"

References throughout to "HQ AFSPC/A3S" are hereby changed to "HQ AFSPC/A2/3/6S"

References throughout to "HQ AFSPC A3R" are hereby changed to "HQ AFSPC A2/3/6SR"

References throughout to "HQ AFSPC A3T" are hereby changed to "HQ AFSPC A2/3/6T"

References throughout to "HQ AFSPC A5" are hereby changed to "HQ AFSPC A5/8/9"

References throughout to "HQ AFSPC A7" are hereby changed to "HQ AFSPC A4/7"

References throughout to "HQ AFSPC A6" are hereby changed to "HQ AFSPC A2/3/6"

References throughout to "HQ AFSPC A8/9" are hereby changed to "HQ AFSPC FM" for Programming/Budgeting Only

References throughout to " AFSPCI 10-1202, *Crew Operations,*15 November 2008" are hereby changed to "AFSPCGM 2014-13-01, *Space Operations Crew Force Management, Training Standardization and Evaluation,* 13 July 2015"

References throughout to " AFSPCI 36-2202V1, 14AF, *Mission Ready Training Evaluation and Standardization Programs,* 1 Jan 10" are hereby changed to "AFSPCGM 2014-13-01, *Space Operations Crew Force Management, Training Standardization and Evaluation,* 13 July 2015"

References throughout to "AFSPCI 10-1213, *Spacelift Launch Strategy and Scheduling Procedures,* 10 Sep 10" are hereby changed to "AFSPCI 13-1213, *Launch Scheduling and Forecasting Procedures,* 18 September 2013"

References throughout to "AFSPCI 99-102, *ICBM Force Development Evaluation (FDE) Procedures,* 29 Dec 10" are hereby changed to "AFGSCI 99-102, *ICBM Operational Test and Evaluation (OT&E),* 2 March 2011"

31 JULY 2015

***BY ORDER OF THE COMMANDER***
***AIR FORCE SPACE COMMAND***

***AIR FORCE SPACE COMMAND***
***INSTRUCTION 10-1208***

***1 OCTOBER 2008***
*Incorporating Through Change 2,*
*29 AUGUST 2013*

***Operations***

***SPACELIFT OPERATIONS***

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements, Air Force Instruction (AFI) 10-1201, ***Space Operations***, and AFI 10-1211,***Space Launch Operations***. It establishes Air Force Space Command (AFSPC) roles and responsibilities relating to space lift operations and is applicable to: Headquarters Air Force Space Command (HQ AFSPC); Space and Missile Systems Center (SMC); Fourteenth Air Force (14 AF); 30th Space Wing (30 SW); 45th, Space Wing (45 SW); and 614th, Air and Space Operations Center (614 AOC). It also applies to all military, government service, and applicable contractor personnel, as outlined within the contract, whose duties directly relate to the management, operations, preparation, and conduct of activities required to support the space lift mission. For guidance pertaining to Intercontinental Ballistic Missiles (ICBMs), see AFSPCI 99-102, ***ICBM Force Development Evaluation (FDE) Procedures***. This instruction does not apply to the Air Force Reserve. This publication applies to the Air National Guard. Wherever this instruction is inconsistent with current contracts that support AFSPC's mission, the contract shall govern. For a glossary, list of references, and acronyms, see **Attachment 1**, ***Glossary of References and Supporting Information***.

Send comments and suggested improvements on an AF Form 847, ***Recommendation for Change of Publication***, through appropriate command channels to HQ AFSPC/A3RS, 150 Vandenberg Street, Suite 1105, Peterson AFB, CO 80914-4200. Organizations requesting document changes should ensure all units that could be affected by the change are included as informational addressees. Subordinate organizations are encouraged to supplement this instruction. Supplements will be coordinated through appropriate command channels and

approved by AFSPC/A3. Supplements will not lessen the requirements nor change the basic content or intent of this instruction. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFMAN 33-363, ***Management of Records***, and are disposed of IAW the Air Force Records Disposition Schedule located at **https://afrims.amc.af.mil**.

***SUMMARY OF CHANGES***

This interim change will implement requirements for requests for exception to the United States Government Orbital Debris Mitigation Standard Practices (USG ODMSP) for launch vehicle (LV) and space vehicle (SV) AFSPC-Procured Missions. The interim change will document specific organizational responsibilities required for exception requests to the USG ODMSP which will be forwarded for final approval by the Office of the Secretary of Defense (OSD). Additional changes are included to remove heritage requirements, Launch Response Team requirements and add a new 1st Air and Space Test Squadron (1 ASTS) responsibility. A margin bar (|) indicates newly revised material

# Chapter 1

## SPACELIFT OVERVIEW AND MISSION ASSURANCE DEFINITIONS

### 1.1. Overview:

1.1.1. United States Government space policies identify "assured access to space" as the need to guarantee the availability of critical space capabilities for executing space missions. This key concept supports and implements National Security Strategy, United States Space Transportation Policy, National Military Strategy, National Space Policy and Air Force (AF) doctrine. These policies indicate assured mission capability for critical space systems can be achieved only through assured and protected access to space.

1.1.2. US Space Transportation Policy (National Security Presidential Directive: NSPD-40) directs the Secretary of Defense, as launch agent, to maintain the capacity to evolve and support the space transportation systems, infrastructure, and support activities necessary to meet national security requirements. Department of Defense Directive (DoDD) 5101.2, ***DoD Executive Agent for Space***, designates the Secretary of the AF as the DoD executive agent for space. Department of Defense Instruction (DoDI) 3100.12, ***Space Support***, allocates responsibility for National Security Space (NSS) transportation including launch to the AF. The AF executes launch and range operations through AFSPC. Thus, AFSPC's space lift mission is to ensure successful and safe delivery of space systems to support national objectives and provide a decisive advantage to US forces worldwide.

1.1.3. Space lift is a key enabler that establishes and supports a broad range of space capabilities. Space lift includes two complementary strategies: current routine launch operations and future responsive launch operations. The US uses routine launches to populate satellite constellations on a scheduled basis and will develop responsive launch operations, or on-demand launch capabilities, to support more time-critical space support operations. Routine launches are planned in advance and executed within the Space Launch Manifest, a product of the Current Launch Schedule Review Board (CLSRB) process. Routine launch is predominantly used to deploy and sustain force enhancement constellations, but is also used to support, deploy, or advance a variety of research and development and other test missions.

### 1.2. Definitions:

1.2.1. Space lift Mission Assurance (SMA).

1.2.1.1. SMA is a command responsibility and authority, exercised through a series of processes for ensuring safe and successful space lift missions. SMA includes flight worthiness, public safety, range operations and base operating support.

1.2.2. Flight Worthiness Certification.

1.2.2.1. Flight Worthiness Certification: Certification made by a responsible launch agency to the launch wing commander, acting on behalf of the AFSPC/CC, which ensures the launch agency has confidence that launch vehicle, spacecraft, and launch agency ground system risks have been resolved, or are known and deemed acceptable. Launch Agencies arrive at a flight worthiness certification, and the subsequent

recommendation to the launch wing commander, through use of launch vehicle mission assurance (LVMA) and space vehicle mission assurance (SVMA).

1.2.2.2. LVMA is a technical and management process rigorously, continuously, and iteratively employed over the life-cycle of a launch system (mission conception to space vehicle separation) to maximize mission success. LVMA encompasses system engineering, risk management, quality assurance, and program management by an experienced, stable launch agency team. LVMA is achieved through integrated developmental processes and/or independent technical assessment and requires expenditures commensurate with the criticality of the mission and the consequences of failure.

1.2.2.3. SVMA is a technical and management process rigorously, continuously, and iteratively employed over a space vehicle until it successfully separates from a launch system in its intended orbit. SVMA encompasses system engineering, risk management, quality assurance, and program management by an experienced, stable space vehicle agency team. SVMA is achieved through integrated developmental processes and/or independent technical assessment and requires expenditures commensurate with the criticality of the mission and consequences of failure.

1.2.3. Public Safety.

1.2.3.1. Safety involving risks to the general public of the United States or foreign countries and/or their property.

1.2.4. Range Operations.

1.2.4.1. Any procedure that requires the use of range resources (instrumentation, collision avoidance, weather, etc). The execution of operations focused on efficient and coordinated employment of all range assets and processes to enable the safe and timely launch of payloads and test vehicles.

1.2.5. Base Operating Support.

1.2.5.1. Base operating support includes traditional installation support elements such as security, fire protection, disaster control, etc., required to provide, protect, and maintain facilities and supporting infrastructure.

# Chapter 2

# SPACELIFT OPERATIONS

## 2.1. Mission Assurance Responsibilities:

2.1.1. The AFSPC/CC is responsible for SMA for all launches from the Eastern Range (ER) and Western Range (WR). The AFSPC/CC delegates public safety, range operations, and base operating support elements of SMA to the 14 AF/CC, who in turn delegates them to the launch wing commanders. AFSPC/CC exercises responsibility for the flight worthiness certification element of SMA through either SMC/CC or the launch wing commander depending on the category of space lift mission, as outlined in paragraph **2.2** and **Table 2.1**.

## 2.2. Flight Worthiness Certification Responsibilities:

2.2.1. All launch agencies operating on the ER and WR will provide a flight worthiness certification acceptable to the wing commander prior to initiating DoL activities. For the purpose of flight worthiness certification, launch agencies fall under one of three categories: (1) DoD missions launching SMC-procured spacecraft on SMC-procured launch vehicles; (2) NRO missions launching NRO-procured spacecraft on SMC-procured launch vehicles; (3) All other civil, and commercial (both FAA licensed and non-FAA licensed) procured missions not addressed in the previous two categories.

2.2.2. Flight Worthiness Certification Process:

2.2.2.1. For Category 1 missions, AFSPC/CC delegates flight worthiness certification authority to the SMC/CC. The SMC/CC will certify flight worthiness for DoD missions launching SMC-procured spacecraft on SMC-procured launch vehicles. AFSPC/CC authorizes DIRLAUTH between applicable SMC systems wings and 14 AF launch wings to allow launch base support for accomplishing flight worthiness certification tasks. The wing commander will normally receive the SMC Mission Director (MD) flight worthiness certification during the commander's launch readiness review (LRR).

2.2.2.2. For Category 2 missions, DNRO (or designated representative) will certify flight worthiness for NRO missions launching NRO-procured spacecraft on SMC-procured launch vehicles. The SMC/CC will certify LV flight worthiness to DNRO as part of the DNRO's mission certification. The wing commander will normally receive the NRO's flight worthiness certification during the commander's LRR.

2.2.2.3. For Category 3 missions, launch agencies will perform flight worthiness certification processes. However, those processes will be sufficiently robust and acceptable to provide the launch wing commander a sufficient level of confidence that launch vehicle performance presents an acceptable risk to public safety and launch base infrastructure and security. The wing commander will normally receive the launch agency's flight worthiness certification during the commander's LRR.

**Table 2.1. Space lift Mission Assurance Component Responsibilities**

| | | RESPONSIBILITY FOR TYPE OF LAUNCH | | | | |
|---|---|---|---|---|---|---|
| | | **Category 1** | **Category 2** | **Category 3** | | |
| | | AF | NRO | Civil | Commercial | Non-DoD/ Other DoD |
| **ASSURANCE TASK** | **Flight Worthiness Certification** | SMC/CC | DNRO | Civil Launch Agency | Commercial Launch Agency | Launch Agency |
| | **LVMA** | SMC/CC | SMC/CC | Civil Launch Agency | Commercial Launch Agency | Launch Agency |
| | **SVMA** | SMC/CC | DNRO | Civil Launch Agency | Commercial Launch Agency | Launch Agency |
| | **Public Safety** | SW/CC | SW/CC | SW/CC | SW/CC | SW/CC |
| | **Range Operations** | SW/CC | SW/CC | SW/CC | SW/CC | SW/CC |
| | **Base Operating Support** | SW/CC | SW/CC | SW/CC | SW/CC | SW/CC |

## 2.3. General Responsibilities.

2.3.1. AFSPC operates the Launch and Test Range System (LTRS) on the Eastern Range (ER) and Western Range (WR) to meet launch agency requirements and ensure public safety and safe passage of vehicles to, through and from space. The primary responsibilities of the ER and WR are outlined in DoDI 3100.12, ***Space Support***. In addition, the ranges provide Test and Evaluation support to DoD activities IAW DoDD 3200.11, ***Major Range and Test Facility Base***. This support includes ballistic missile testing and aeronautical flight testing. Per this guidance, range facilities are sized, operated, and maintained primarily for DoD operational and test missions, but are also available to all authorized users having a valid requirement for their capabilities. Federal Aviation Administration (FAA) licensed launch and test support is conducted IAW Title 49 United States Code (USC) §70101 et. seq., Commercial Space Launch Activity (CSLA), as amended and Title 14 CFR, Chapter III, Commercial Space Transportation, Federal Aviation Administration, Department of Transportation. The AF supports FAA-licensed operations at AFSPC ranges IAW DoDD 3230.3, ***DoD Support for Commercial Space Launch Activities***. Activities not associated with FAA-licensed spacelift operations may qualify for support under Title 10 USC 2681,

***Use of Test and Evaluation Installations by Commercial Entities***, as implemented by DoDD 3200.11.

2.3.2. While non-FAA-licensed activities are conducted on the range, National and DoD policy encourage the development of FAA-licensed launch operations within the US private sector. The CSLA encourages federal agencies to support FAA-licensed launch activities with use of launch property or launch services that are in excess or otherwise not needed for government use. Cooperative involvement between 30 SW and 45 SW with FAA-licensed activities helps maintain the competitiveness of the US space industrial base in the world economy and promotes our national strength in space. AFSPC retains public safety and resource protection responsibilities for all activities on Vandenberg Air Force Base and Cape Canaveral Air Force Station. NASA is responsible for flight consequences to people (including workforce and visitors) on Kennedy Space Center (KSC) IAW 45 SW 15E-2-8, ***Memorandum of Agreement Between the 45 Space Wing, NASA's John F. Kennedy Space Center (NASA-KSC), and the Space Shuttle Program Office (NASA SPO) for Range Safety***. For FAA-licensed launches, the FAA remains statutorily responsible for public health and safety, the safety of property, and national security or foreign policy interests of the United States under the CSLA. Additionally, the FAA-licensed company conducting the launch also retains responsibility for public safety of any launch it conducts from an AF range. Regardless of the type of activity (including FAA-licensed launches), AFSPC/CC, through his/her launch wing commanders, is responsible for the launch operation.

2.3.3. Support for Civil Space lift consists of support to NASA and the NOAA as defined in US Space Transportation Policy (NSPD-40) and AF Policy (AF Policy Directive: AFPD 10-12, ***Space***). The AF will launch payloads for the DoD and other government agencies to meet mission requirements.

2.3.4. The DoL chain of command is similar in construct to a task force in that several organizations are placed under the temporary authority of the LDA, normally the SW/CC, for the purpose of executing DoL activities. Request for support from Commander, Joint Functional Component Command for Space (CDR JFCC Space) assigned forces (i.e., 2nd Space Warning Squadron, 22nd Space Operations Squadron, etc.) should be made to the CDR JFCC Space NLT 60 days prior to launch.

2.3.5. AFSPC must maintain a successful, robust, secure, and modern space lift capability to meet war fighter and other national security mission needs. All echelons within AFSPC must strive to meet this basic requirement at an affordable cost.

2.3.6. All launch and range operations employ contracted, non-DoD personnel. To ensure proper mission conduct and contractor compliance, AF personnel should understand government rights and responsibilities embodied in contracts and their provisions. A general understanding of the contract between the AF and the contractor is of particular importance for commanders and mission personnel. Individuals seeking guidance on contracts should contact the cognizant government contracting office.

2.3.7. Safety is paramount in all aspects of launch and range operations and involves following regulatory guidance as well as meeting safety requirements detailed in operations directives, instructions, manuals, plans, and procedures. All personnel must comply with applicable technical, procedural, safety, security, and resource protection requirements, instructions, and directives. These include AFSPCI 91-701, ***Launch Safety Program Policy***,

AFSPCMAN 91-711, ***Launch Safety Requirements for AFSPC Organizations***, and AFSPCMAN 91-710, ***Range Safety User Requirements***.

2.3.8. Mission success requires experience, effective training and certification programs, workforce management, and technical excellence. Organizations and personnel will comply with all applicable training, evaluation, crew force management, and civilian personnel instructions, directives, requirements, and supplements. These include AFMAN 36-2234, ***Instructional System Development***, AFH 36-2235V11, ***Information for Designers of Instructional Systems Application to Unit Training***, AFI 36-2201V3, ***Air Force Training Program on the Job Training Administration***, AFI 63-1201, ***Life Cycle Systems Engineering,*** AFSPCI 10-1202, ***Crew Operations***, and AFSPCI 36-2202, ***Mission Ready Training, Evaluation and Standardization Programs***, AFSPCI 21-202V2, ***Space Launch Maintenance Roles and Responsibilities***, and applicable Career Field Education and Training Plans (CFETP).

**2.4. Exception to National Space Policy Regarding Orbital Debris Mitigation.**

2.4.1. National Space Policy granted approval authority for violations of the United States Government (USG) Orbital Debris Mitigation Standard Practices (ODMSP) criteria to the head of the sponsoring department or agency. For AFSPC missions, this is the Secretary of Defense (SECDEF). With the understanding that there are missions already in the configuration, planning, or execution phases that will require an exception to the ODMSP, the following guidance is provided to clarify roles, responsibilities and procedures for orbital debris exception requests.

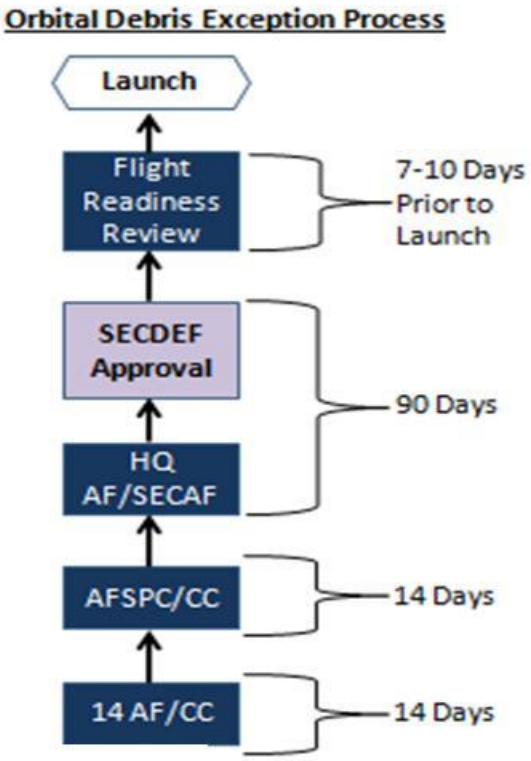
2.4.2. Exception requests are required for all AFSPC missions that do not comply with the ODMSP. For missions where AFSPC is responsible for providing the launch service to other agencies (e.g., National Reconniassance Office (NRO), U.S. Navy, Missile Defense Agency), the Air Force is responsible for the LV exception request. NRO will manage SV exceptions within their channels, NASA will manage exception requests for their missions, and AFSPC will not enforce National Space Policy compliance on non-AFSPC missions (e.g., Federal Aviation Administration-licensed commercial launches, AF Research Lab space vehicles, Defense Advanced Research Projects Agency projects, etc.).

2.4.3. Exception requests to National Space Policy for violations of USG ODMSP are separate and in addition to the Space Debris Assessment Report (SDAR) process, described in AFI 91-217, Space Safety and Mishap Prevention Program.

2.4.4. All National Space Policy orbital debris exception requests for AFSPC-procured LVs and SVs will be developed by the respective Space and Missile Systems Center (SMC) system program office as early as feasible in the acquisition process, and at a minimum will be coordinated with Center-level engineering and safety offices. Using the USG ODMSP, the program office will provide a concise overview and analysis of orbital debris standard practices the LV and/or SV will not meet, to include an explanation of why compliance cannot be achieved and a brief summary of the mitigation measured used. The SMC Commander (SMC/CC), Vice Commander (SMC/CV) or Executive Director (SMC/CD) will review and endorse each exception request. SMC will then forward the exception request to the 14th Air Force Commander (14 AF/CC) or Vice Commander (14 AF/CV) for endorsement prior to delivery to HQ AFSPC/A3SR.

2.4.5. The flow chart in Figure 2.1. depicts the exception request staffing requirements, to include the timeline required for SECDEF review and approval. HQ AFSPC/A3SR requires delivery of exception requests 114 days prior to the approved mission launch date for coordination.

**Figure 2.1. National Space Policy Orbital Debris Exception Process for AFSPC Missions.**



## Chapter 3

## HEADQUARTERS AIR FORCE SPACE COMMAND (HQ AFSPC) RESPONSIBILITIES

### 3.1. General Responsibilities:

3.1.1. AFSPC/CC has overall responsibility for SMA and delegates launch execution to the 14 AF/CC and space flight worthiness to the SMC/CC (for all AFSPC LVs and SVs).

3.1.2. Define space system requirements.

3.1.3. Organize, train and equip AFSPC space forces for spacelift and range operations.

3.1.4. Implement Federal, National, DoD and HQ USAF launch and range policy and guidance.

3.1.5. AFSPC/CC or AFSPC/CV reviews/approves all staff packages for Orbital Debris Exception Requests. Then, the staff package will be coordinated through the Under Secretary of the Air Force (USECAF) to the Office of the Secretary of Defense (OSD) for final approval.

### 3.2. Air, Space and Nuclear Operations Directorate (HQ AFSPC/A3) Responsibilities:

3.2.1. Implement Federal, National, DoD and HQ USAF policy and guidance for launch and range operations.

3.2.2. Ensure subordinate operational units are organized IAW AFI 38-101, ***Air Force Organization***. Coordinate with AFSPC/A1 to ensure AFI 38-101 is current.

3.2.3. Advocate for the necessary resources (equipment, manpower, etc.) to meet, sustain, and evolve AFSPC launch capabilities, and to provide support to other external launch customers as required by directive, regulation, and Public Law.

3.2.4. Provide direct support to AFSPC/CC on launch and range operations issues.

3.2.5. Coordinate activities with other space operations stakeholders, to include DoD agencies, MRTFB ranges, NRO, MAJCOMs, NASA, Department of Transportation (DoT), Missile Defense Agency (MDA), FAA, and FAA-licensed users.

3.2.6. Support HQ AF and AFSPC strategic planning process.

3.2.7. Act as the operations acceptance authority for all programs unless otherwise delegated in writing. See AFSPCI 10-604, ***Space Operations Weapon System Management***, for operations testing and acceptance requirements.

3.2.8. Support all AF and NRO launch mishap investigations IAW AFI 91-204, ***Safety Investigations and Reports***, AFI 51-503, ***Aerospace Accident Investigations***, and HQ AFSPC direction.

3.2.8.1. Fund and support investigation for NRO LV mishaps.

3.2.8.2. Support NRO-led investigations of payload pre-launch and payload launch-related mishaps not involving the LV.

### 3.3. Launch, Ranges and Networks Division (HQ AFSPC/A3R) Responsibilities:

3.3.1. Develop, implement, and review standardized policy and guidance to AFSPC units supporting DoD, Civil, and FAA-licensed space lift operations and provide assistance to subordinate units with compliance issues when resolution is beyond their scope and/or resources.

3.3.1.1. The A3R Division Chief is the Command Lead for AFSPC launch, range and Air Force Satellite Control Network (AFSCN) issues impacting requirements development and operations and maintenance policy and programming.

3.3.1.2. Develop all conceptual documents associated with launch and range operations IAW AFPD 10-28, ***Air Force Concept Development***, and AFSPCI 10-102, ***Air Force Space Command Concept Development***.

3.3.1.3. Develop and publish an Air Force Commercial Space Operations Support Agreement (CSOSA) with commercial users requiring AFSPC support from subordinate units. A Space Operations Support Agreement (SOSA) is required for state and civil users. Commercial, civil, and state users must execute a CSOSA/SOSA with HQ AFSPC/A3 before conducting any launch operations.

3.3.1.3.1. The initial CSOSA/SOSA is valid for a five-year period. The CSOSA/SOSA may be renewed in five-year increments.

3.3.1.4. Review published policy and guidance and provide updates, as necessary to maintain currency.

3.3.1.5. Develop inspection checklists.

3.3.1.6. Develop and publish Memoranda of Agreement between AFSPC and other organizations, as required.

3.3.1.7. Ensure minimum training requirements are identified in the Mission Director (MD) training program.

3.3.2. Participate in launch and range operations planning activities such as the AFSPC strategic planning process, CLSRB, Range Users Coordination Board (RUCB), and assist with any other long-range planning efforts, as required.

3.3.3. Participate in Staff Assistance Visits (SAVs) to launch and range units. Also support Process Action Teams (PATs) and Tiger Teams, as required.

3.3.4. Participate in Accident and Safety Investigation Boards (AIBs and SIBs), as required.

3.3.5. Participate in the Functional Availability Working Group for functional availability planning.

3.3.6. In coordination with HQ AFSPC/A5, A6, A7, A8/9, and SMC, advocate for current and future systems' operational requirements through the Planning, Programming, Budgeting and Execution cycle.

3.3.6.1. Serve as the Program Element Monitor advocating for launch and range program elements (e.g. ELV, WR, ER).

3.3.6.2. Coordinate funding advocacy with the HQ AFSPC staff.

3.3.7. Review and provide coordination on all Program Management Directive changes and updates.

3.3.8. Serve as command focal point for standardizing how simulation tools are employed within AFSPC to assess satellite constellation failure and replenishment scenarios. Using specialized software tools, conduct simulations for satellite missions IAW NSS PD 04-01, ***Satellite Functional Availability Planning***, to assess satellite constellation and replenishment scenarios. Provide assessments to satellite program leads.

3.3.9. Develop and maintain the National Launch Forecast IAW AFSPCI 10-1213, ***Space lift Launch Strategies and Scheduling Procedures***.

3.3.10. Maintain an accurate historical database of launch-related information for support to future studies and analysis. Example data include the following:

3.3.10.1. Launch record (e.g. mission, date, time, mission result, payload, customer)

3.3.10.2. Launch slips (e.g. launch date move, reason for move)

3.3.10.3. Other applicable data/information.

3.3.11. DELETED

3.3.11.1. DELETED

3.3.11.2. DELETED

3.3.11.3. DELETED

3.3.11.4. DELETED

3.3.12. As OPR for the Space lift Education and Crossover Program (SLEC-P), develop, implement, and manage SLEC-P program goals, objectives, and policies in coordination with HQ AFSPC/A1, A3T.

3.3.13. Interface with SMC, and consult/coordinate with the operational wings, on sustainment and modernization projects, and ensure new or modified systems are adequately tested.

3.3.14. Support launch and range operations during Guardian Challenge Competition planning and execution.

3.3.15. Provide AFSPC/A3 the operations acceptance authority recommendation for all programs including LTRS.

3.3.16. Serve as Point of Contact (POC) for Orbital Debris Exception Requests for AFSPC-procured LV and SV missions.

3.3.16.1. Prepare and coordinate all exception request staff packages through HQ AFSPC/A3, HQ AFSPC/A5 and HQ AFSPC/SE for AFSPC/CC or AFSPC/CV approval.

3.3.16.2. Staff package coordination will be accomplished within 14 days in accordance with Figure 2.1.

**3.4. Operations Training, Test, Exercises and Evaluation Division (HQ AFSPC/A3T) Responsibilities:**

3.4.1. Ensure training program policy and guidance is provided in AFSPCI 10-1202.

3.4.2. Review MD training program for DoD missions for compliance with applicable training directives and requirements when updates are provided by SMC.

3.4.3. Review and update Space lift Fundamentals Course and SLEC-P training objectives annually and provide linkage to Air Force's training objectives for the space lift environment and prime contractors' manufacturing and launch scheduling functions. Support HQ AFSPC/A3 SLEC-P program development, implementation, and management efforts.

3.4.4. Provide support to NRO training programs, when requested.

3.4.5. Participate in space launch and range operations planning activities such as the AFSPC strategic planning processes, and assist with any other long-range training planning efforts, as required.

3.4.6. Participate in SAVs to space launch and range units. Also support PATs and Tiger Teams, as required.

3.4.7. Advocate for launch and range system initial and recurring training capabilities.

3.4.8. Provide operations testing guidance for LTRS IAW AFI 99-103, ***Capabilities Based Test and Evaluation***, and AFSPCI 99-103, ***Capabilities Based Test and Evaluation of Space and ICBM Systems***.

**3.5. Space Safety Division (HQ AFSPC/SEC) Responsibilities:**

3.5.1. Establish and oversee the AFSPC Launch and Orbital Safety Programs.

3.5.2. Establish, evaluate, approve, publish, and update AFSPC Launch and Orbital Safety policy and requirements in AFSPCI 91-700, ***Range Safety Publications Series***, AFSPCI 91-701, AFSPCMAN 91-710 (Volumes 1-7), and AFSPCMAN 91-711. These publications include operational flight safety analysis policy, requirements, and guidance for implementation by the Mission Flight Control Officers (MFCOs).

3.5.3. Establish and issue Launch Safety mishap reporting guidance and requirements. This includes pre-launch, launch, the transition from launch to on orbit (or planned impact for sub-orbital missions), and through the end of LV and satellite life.

3.5.4. Ensure proper and timely response to launch mishaps.

3.5.5. Support Interim SIBs, SIBs, and AIBs as requested by the board presidents.

3.5.6. As the AF/FAA Common Standards Working Group (CSWG) Co-chair, provide the direct interface between AFSPC and the FAA for establishing common Launch Safety requirements as specified in the ***Memorandum of Agreement between the Department of the Air Force and the Federal Aviation Administration of Safety for Space Transportation and Range Activities***.

3.5.7. Participate in the RUCB.

3.5.8. Develop inspection checklists and support the AFSPC/IG, as required.

3.5.9. Conduct SAVs for launch, range, and orbital safety units.

3.5.10. Provide launch safety policy and guidance to ensure MFCOs properly implement safety requirements.

3.5.11. Participate in Range Commanders Council Range Safety Group activities as an Associate Member.

## Chapter 4

## SPACE AND MISSILE SYSTEMS CENTER (SMC) RESPONSIBILITIES

### 4.1. Spacelift Responsibilities:

4.1.1. Responsible to HQ AFSPC for the acquisition, readiness, sustainment, modernization, and employment of space launch and satellite systems and services.

4.1.1.1. Responsible to HQ AFSPC for the acquisition, sustainment, and modernization of range systems.

4.1.1.2. Conduct LV and SV processing operations and satellite on-orbit test and checkout activities for AF systems that are under SMC/CC authority.

4.1.2. The SMC/CC is the flight certification authority for all AFSPC LVs and SVs.

4.1.2.1. Flight certification will be accomplished at the end of the Flight Readiness Review (FRR) with certification provided to AFSPC/CC.

4.1.2.2. SMC/CC appoints, trains, and certifies an MD for every DoD launch of SMC-acquired launch systems/services.

4.1.2.2.1. SMC/CC assigns on-scene authority for AF LV and SV development, processing, integration and launch to the MD. MD responsibility transfers to the satellite operations Wing/CC upon separation of the satellite from the LV and is executed through a Wing/CC-designated Test Director. The receiving space wing supports the satellite systems wing commander from on-orbit test through turnover to operations. The operational satellite squadron commander normally has satellite control authority (authority to send commands) under the space wing commander. See AFSPCI 10-1204, ***Satellite Operations***, for on-orbit satellite operations requirements.

4.1.2.2.2. The MD will successfully complete the SMC MD training program and obtain SMC/CC certification IAW this instruction and SMC guidance.

4.1.2.2.3. The MD will monitor SV and LV processing and ensure systems meet space flight worthiness criteria.

4.1.2.2.4. The MD will ensure all LV and SV anomalies affecting flight worthiness are successfully mitigated/resolved.

4.1.2.2.5. The MD will participate in FRR, presenting it to the SMC/CC.

4.1.2.2.6. The MD will participate in the LRR process.

4.1.2.2.7. The MD will ensure a thorough Post-Flight Review is conducted for every mission after launch to assess the performance of the LV, satellite, and ground systems.

4.1.2.3. The SMC Systems Wings assign SV/LV processing operations to the 30 SW/CC and 45 SW/CC via letters of assignment, as authorized by AFSPC/CC via DIRLAUTH. Letters of assignment will be coordinated through 14 AF/CC. AFSPC/A3, AFSPC/A4 will receive copies of letters of assignment.

4.1.2.3.1. Provide appropriate assignments and resources to include funding, applicable contractor support [Systems Engineering and Technical Support, Federally Funded Research and Development Center, etc.], and infrastructure from the LV and SV Systems Wings to the Space Wing organizations performing the launch site flight worthiness certification activities.

4.1.2.3.2. Ensure SMC-managed LVs and SVs meet all system requirements and capabilities documentation according to System Performance Requirements Document, Operational Requirements Document, Initial Capabilities Document, Capabilities Development Document, Capabilities Production Document, System Interface Specification, and other applicable requirements and specification documents.

4.1.2.3.3. Define Space Flight Worthiness criteria for compliance from SV and LV Systems Wing/Group Commanders.

4.1.2.3.4. Support the Launch Readiness Review (LRR) in confirming launch readiness of the LV and satellite systems to the Launch Decision Authority (LDA). See **Attachment 3*, Launch Readiness Review Assessment*** for LRR requirements.

4.1.2.3.5. Provide Space Wing/Launch Group (SW/LCG) with appropriate information to accomplish reporting IAW AFI 10-206, ***Operational Reporting***.

4.1.2.3.6. Maintain anomaly resolution process which includes appropriate utilization of personnel.

4.1.2.3.7. Determine appropriate responses to LV or USAF-acquired satellite problems, off-nominal indications, or anomalies when flight worthiness of the integrated stack or associated aerospace ground equipment is in question. If required, lead an anomaly resolution team for the LV and USAF-acquired satellite, and prepare corrective actions in concert with other AFSPC organizations.

4.1.2.3.8. Develop, document and maintain a process for a structured training and certification program to ensure proper training/certification of key personnel supporting DoL operations. Ensure inclusion of procedures to identify any health or medical condition that could impair performance of mission duties.

4.1.2.3.8.1. See AFSPCI 10-1202 for minimum program requirements, as applicable.

4.1.2.3.9. Ensure an MD training program is established and maintained according to applicable training directives and requirements and provide HQ AFSPC/A3T, A3R a copy of the training program and updates when they occur.

4.1.3. Coordinate all launch and range implementing directives and instructions with AFSPC/A3R.

4.1.4. Ensure SMC and contractor compliance with all launch safety requirements specified in AFSPCI 91-701, AFSPCMAN 91-710, AFSPCMAN 91-711, and EWR 127-1, ***Eastern and Western Range Safety Requirements***, for all SMC-procured systems employed on AFSPC ranges.

4.1.4.1. Ensure all systems and products in the SMC-procured space and missile product line comply with launch safety requirements specified in AFSPCMAN 91-710 and AFSPCMAN 91-711.

4.1.5. **(Added)** Space Development Test Group Commander will authorize use of locally developed procedures identified by Unit Commander where no specific TO guidance is applicable.

4.1.6. All National Space Policy orbital debris exception requests for AFSPC-procured LVs and SVs will be developed by the respective Space and Missile Systems Center (SMC) system program office as early as feasible in the acquisition process, and at a minimum, will be coordinated with Center-level engineering and safety offices.

4.1.6.1. Using the USG ODMSP, the program office will provide a concise overview and analysis of the orbital debris standard practices the LV and/or SV will not meet, to include an explanation of why compliance cannot be achieved.

4.1.6.2. The SMC Commander (SMC/CC), Vice Commander (SMC/CV) or Executive Director (SMC/CD) will review and endorse each exception request. Then, SMC will forward the exception request to 14th Air Force Commander (14 AF/CC) or Vice Commander (14 AF/CV) for endorsement prior to delivery to HQ AFSPC/A3SR.

4.1.6.3. Completed Orbital Debris Exception Request shall be delivered to HQ AFSPC/A3SR 114 days prior to the approved mission launch date.

4.1.6.4. SMC will maximize use of logically grouped block exception requests.

4.1.6.5. SMC will strive to be fully compliant with orbital disposal of missions by FY2020. Only exceptions consistent with mission requirements and cost effectiveness will be submitted.

4.1.6.5.1. Direct new satellite programs to prioritize upper stage disposal in their SV design.

4.1.6.5.2. Identify LV design changes that enhance upper stage orbital disposal compliance.

**4.2. (Added) Space Development and Test Wing Responsibilities:**

4.2.1. **(Added)** Use the following approval process for all Rocket Systems Launch Program (RSLP) operations involving 30 SW resources and a similar process for all launch campaign activities not involving 30 SW resources:

4.2.1.1. **(Added)** Write local procedures based upon applicable reference technical data or inputs from subject matter experts or engineers.

4.2.1.2. **(Added)** Review and update procedures with the program office, safety personnel, range/base safety office(s) and with external subject matter experts, as applicable.

4.2.1.3. **(Added)** Incorporate changes from dry-runs, real-time redlines and recommendations from coordination.

4.2.1.4. **(Added)** Gain final procedure approval by the Launch Test Squadron/CC, with safety and SDTW engineering concurrence.

4.2.1.5. **(Added)** Gain Group Commander authorization for use of procedures identified by Unit Commander for the appropriate launch campaign.

4.2.1.6. **(Added)** Conduct review of reference technical data immediately prior to performing the procedure for relevant changes.

4.2.1.7. **(Added)** Maintain copies of as-run-procedures for historical reference for the life of the program.

## Chapter 5

## FOURTEENTH AIR FORCE (14 AF) RESPONSIBILITIES

### 5.1. Spacelift Responsibilities:

5.1.1. Responsible to HQ AFSPC for C2 and employment of AF space forces to support operational plans and missions for US combatant commanders and air component commanders.

5.1.2. Ensure execution of SMA, in partnership with SMC/launch agency, and launch execution at the launch wings IAW Higher Headquarters (HHQ) policy and directives.

5.1.3. Monitor launch and range schedules.

5.1.4. Review, implement, and supplement launch and range operational and contingency policies and requirements established by DoD, AF, and AFSPC directives and instructions.

5.1.5. Coordinate all launch and range implementing directives with AFSPC/A3R.

5.1.6. Review and approve launch and range conceptual documents as required by AFPD 10-28 and AFSPCI 10-102.

5.1.7. Validate operational requirements, conceptual documents, and situation report (SITREP) status.

5.1.8. Provide assistance to subordinate units on compliance issues when resolution is beyond their scope and/or resources.

5.1.9. Participate in SAV/Readiness Visits to launch and range units, as required, or at SW request. Participate in PATs and Tiger Teams, as required.

5.1.10. Solicit inputs from affected units and advocate for standardization initiatives for launch and range units.

5.1.11. Standardize launch and range operational procedures, where appropriate.

5.1.12. Serve as the executive agent for the CLSRB process IAW AFSPCI 10-1213.

5.1.13. Review Operational Review Board minutes for issues occurring during spacelift generation, execution, or recovery.

5.1.14. Provide resources and participate in SIBs and AIBs, as required by the SIB/AIB President.

5.1.15. Ensure compliance with launch safety risk and expected casualty criteria and reporting requirements specified in AFSPCI 91-701, EWR 127-1/AFSPCMAN 91-710, as applicable, and AFSPCMAN 91-711.

5.1.16. Establish frequency mitigation process and ensure the 30 SW and 45 SW follow proper frequency mitigation procedures, as appropriate. See frequency mitigation process in **Attachment 4**.

5.1.17. Endorse all Orbital Debris Exception Requests from SMC prior to delivery to HQ AFSPC/A3SR.

# Chapter 6

## 614TH AIR AND SPACE OPERATIONS CENTER (614 AOC) RESPONSIBILITIES

### 6.1. General Spacelift Operations Support Responsibilities:

6.1.1. Calculate conjunction assessments to avoid collisions between launch vehicles and on-orbit objects for all launches required by 14 AF. Provide conjunction assessment data to the appropriate launch and/or launch and systems wing for use in developing collision avoidance analysis.

# Chapter 7

# SPACE WING (SW) RESPONSIBILITIES

## 7.1. General Responsibilities:

7.1.1. Implement and supplement policies and requirements established by DoD, AF, and AFSPC directives and instructions and ensure effective management and quality control of all applicable policies and requirements.

7.1.2. Supervise subordinate operational activities, ensuring operational effectiveness. Provide assistance on compliance issues to subordinate units when resolution is beyond their scope and/or resources.

7.1.3. Ensure SMA and launch execution is performed IAW HHQ policy and directives.

7.1.4. Develop operational contract requirements.

7.1.5. Provide host base support to Guardian Challenge Competition.

## 7.2. Commander, Space Wing (SW/CC) Responsibilities:

7.2.1. As the LDA, is accountable for public safety, launch area safety, resource protection, and environmental protection for all personnel, systems, government facilities, and equipment throughout all phases of launch and range operations (with the exception of KSC as specified in paragraph 1.1.8).

7.2.2. As the LDA, chair and conduct a LRR prior to each launch operation. See **Attachment 3** for information on LRR attendance and discussion topics.

7.2.3. Accomplish SMC assigned mission activities at the launch base through DIRLAUTH relationship.

7.2.3.1. Assess, through the LCG, all phases of DoD space launch processing, and participate in critical launch activities to mitigate risk for mission success.

7.2.3.2. Ensure the LCG properly executes all Systems Wing/Group Commanders-assigned flight worthiness and LVMA/SVMA responsibilities.

7.2.4. Accountable to 14 AF/CC for maintaining trained and certified personnel, procedures, and government infrastructure.

7.2.5. Operate the range as part of the DoD MRTFB by providing government facilities and range services to all authorized users IAW DoDD 3200.11.

7.2.6. Ensure range readiness for launch operations and verify operations are safe to proceed.

7.2.7. Ensure all necessary operational support is provided to authorized programs and range users as defined by the Universal Documentation System (UDS).

7.2.8. Approve mission flight rules.

7.2.9. Enforce user compliance with Collision Avoidance (COLA) Special Instructions (SPINS), as necessary.

7.2.10. Provide Program Analysts to prepare and coordinate cost estimates, manage the customer Job Order Numbers, and serve as primary customer point of contact for cost and funding information and the resolution of any questioned charges.

**7.3. Wing Safety (SW/SE) Responsibilities:**

7.3.1. Chief of Safety (SE) shall report directly to SW/CC.

7.3.2. Provide an independent safety assessment to SW/CC IAW AFSPCI 91-701 and AFSPCMAN 91-711.

7.3.3. Develop and implement required programs, practices, and procedures to enable mission accomplishment consistent with established safety policy and risk acceptance criteria IAW AFSPCI 91-701 and AFSPCMAN 91-710 or EWR 127-1, as applicable.

7.3.4. Develop standardized safety requirements IAW higher headquarters instructions.

7.3.5. Enforce launch safety requirements IAW AFSPCI 91-701 and AFSPCMAN 91-710 or EWR 127-1, as applicable.

7.3.6. Advise commanders on safety requirements for all operations.

7.3.7. Inform the LDA of LV (and SV, as appropriate) safety status prior to each launch (hazards, waivers, and issues) and ensure compliance with the Memorandum of Understanding Between AFSPC and FAA/AST for Resolving Requests for Relief from Common Launch Safety Requirements.

7.3.8. Prior to each launch, at the LRR or via a separate briefing, inform the LDA of the LV systems (including launch pad ground systems, GSE, control systems, etc.) and payload safety status IAW the 91-7XX series publications. Verify launch safety requirements are met IAW EWR 127-1 or AFSPCMAN 91-710, as applicable, and AFSPCMAN 91-711. Issue safety approval for launch at the LRR. See **Attachment 3** for LRR requirements.

7.3.9. Ensure every applicable safety waiver is reviewed for validity prior to each launch or launch cycle IAW AFSPCMAN 91-710.

7.3.10. Provide subject matter experts to advise and provide recommendations to the SW/CC on safety policies, requirements, procedures, launch commit criteria, risk assessments, and launch systems to support operations and DoL activities.

7.3.11. Develop mission flight rules in accordance with DoD, AF, and AFSPC range safety requirements, instructions, and operational needs.

7.3.12. Provide analyses of flight safety criteria and establish display, tracking, and data processing parameters.

7.3.13. Ensure all launch facilities and support locations are explosively sited, as required.

7.3.14. Investigate, report, and identify corrective actions for safety deficiencies, high accident potentials, and mishaps.

7.3.15. Establish operational safety criteria and establish display, tracking, and data processing parameters.

7.3.16. Conduct risk analysis and advise commanders of in-flight impact (i.e., COLA closure times), explosive, toxic (in conjunction with CE and weather), laser, radiological, and acoustic hazards.

7.3.17. Coordinate on key unit operations and training documentation.

7.3.18. Coordinate with Range Operations Squadron (ROPS) on safety requirements, procedures and policies.

7.3.19. Monitor hazardous operations.

7.3.20. Conduct system safety assessment of range user safety documentation of hazards; identification, mitigation, and residual risk associated with processing and launch activities.

7.3.21. Review and disposition range user Range Safety requirements non-compliance requests.

7.3.21.1. Coordinate non-compliance requests with the FAA.

**7.4. Operations Group (OG) Responsibilities:**

7.4.1. General Responsibilities:

7.4.1.1. Conduct range operations.

7.4.1.2. Oversee the development of range support contracts in coordination with contracting and other support functions.

7.4.1.3. Review and approve all OG unit operations and training documentation and ensure compliance with HHQ directives and instructions.

7.4.1.4. Ensure a structured training and certification program is developed, documented and maintained for key personnel supporting DoL operations. Ensure inclusion of procedures to identify any health or medical condition that could impair performance of mission duties.

7.4.1.4.1. See AFSPCI 10-1202 for minimum program requirements, as applicable.

7.4.2. Commander, Operations Group (OG/CC) Responsibilities:

7.4.2.1. Support incremental readiness reviews identified by the launch agency, as required.

7.4.2.2. Support FRR, as required.

7.4.2.3. Participate in Wing LRR and ensure range, weather, and range safety ground system operational status is reported. Advise LDA on a decision to enter or proceed with the launch countdown. See **Attachment 3** for information on LRR and discussion items.

7.4.2.4. Participate in RUCB.

7.4.2.5. Ensure tactics, techniques, and procedures are developed.

7.4.2.6. Ensure appropriate OG squadron commanders certify as interim SIB president.

7.4.2.7. Coordinate mission support with other ranges IAW DoDD 3200.11 MRTFB.

7.4.3. Operations Group Standardization and Evaluation (OG/OGV) Responsibilities:

7.4.3.1. Develop and standardize the format, types, and procedures for all wing-developed Emergency Checklists for all key launch and range positions.

7.4.3.2. Serve as experts on all range and heritage LV operational issues to the wing and group commanders.

7.4.3.3. Serve as a wing trusted agent for exercises.

7.4.3.4. Ensure proper certification of OG personnel and evaluate CMR crewmembers.

7.4.3.5. Conduct annual Operations Standardization Team (OST) visits.

7.4.3.6. Request augmentation support from wing organizations, as needed, to fulfill above responsibilities.

7.4.3.7. Standardize operations policies and procedures and coordinate on all CMR training materials.

7.4.3.8. Interface with LCG/QA to jointly determine the inspection scope (what to inspect) and process (how to inspect) for unit inspections.

7.4.4. Operations Support Squadron (OSS) Responsibilities:

7.4.4.1. Provide OG unit operations and training support as outlined in HHQ directives.

7.4.4.2. Review new or revised directives for training impact and advise OG/CC of impact to training programs.

7.4.4.3. Ensure development and standardization of the format, types, and procedures for all OG developed training materials.

7.4.4.4. Develop and conduct the CMR instructor training program and certify instructors for CMR positions IAW AFSPCI 36-2202.

7.4.4.5. Ensure instructors are properly trained and certified IAW HHQ and wing directives.

7.4.4.6. Standardize training programs, review and approve/certify all training materials, develop policies and guidance for training issues, and ensure Instructional Systems Development (ISD) compliance.

7.4.4.7. Serve as operational experts on training issues to the OG/CC. Provide training updates to OG/CC on unit and group training programs and performance.

7.4.4.8. Interface with the LCG on training policy to ensure consistency and proficiency required of key OG positions.

7.4.4.9. Ensure airfield operations and aircraft flight safety standards are maintained.

7.4.4.10. Establish tactics, techniques and procedures and review operational procedures to maximize SW response to mission-impacting events.

7.4.4.11. Provide intelligence support to SW operations and tenant units, as required.

7.4.5. Range Operations Squadron (ROPS) Responsibilities:

7.4.5.1. Develop range operations procedures in support of all DoD, NRO, NASA, civil, and commercial operations.

7.4.5.2. Execute procedures for range failure/discrepancy/anomaly resolution. Procedures will identify discrepancy notification channels.

7.4.5.3. Provide mission support by coordinating with other ranges IAW DoDD 3200.11 MRTFB.

7.4.5.4. Manage range requirements after issuance of the Statement of Capability IAW UDS requirements.

7.4.5.5. Ensure range systems are available to meet requirements in operations directives, instructions, plans, and procedures.

7.4.5.6. Review and coordinate on countdown and operations procedures, including contractor procedures that impact range operations.

7.4.5.7. Serve as the wing single point of contact for range scheduling. Manage all aspects of range scheduling to include asset maintenance status.

7.4.5.8. Provide operational expertise in the development and coordination of mission rules by Wing Safety office.

7.4.5.9. Manage range land, air, and sea clearance issues.

7.4.5.10. Ensure launch specific frequency mitigation procedures are properly coordinated and in place prior to launch, as required. Refer to frequency mitigation process in **Attachment 4**.

7.4.5.11. Certify readiness to OG/CC.

7.4.5.12. Oversee all aspects of range training programs.

7.4.5.13. Provide fully trained and certified operations personnel for all missions.

7.4.5.14. Provide functional oversight and direction to the space wing Military Radar Unit (MRU).

7.4.5.15. Provide a Program Support Manager (PSM) for users as the primary POC for range support, including radar, telemetry, optics, command, communication, data processing/transfer/products and other support functions.

7.4.6. Weather Squadron (WS) Responsibilities:

7.4.6.1. Coordinate weather operations requirements with DoD, NRO, NASA, and commercial launch agencies.

7.4.6.2. Develop launch weather operations procedures in support of all DoD, NRO, NASA, commercial manned, or unmanned launch operations.

7.4.6.3. Provide fully trained and certified launch weather team (LWT) personnel for all launch operations.

7.4.6.4. Provide or arrange for tailored weather services and equipment to support all phases of launch operations.

7.4.6.5. Oversee all aspects of the launch weather training program.

7.4.6.6. Review and coordinate on all contractor procedures that impact launch weather operations.

7.4.7. Range Management Squadron (RMS) Responsibilities (These responsibilities will be removed from this instruction when the appropriate 21-series guidance is released.).

7.4.7.1. Evaluate contractors' performance and execution of day-to-day O&M of the range.

7.4.7.2. Provide range engineering support for Integrated Crew Exercises, Mission Dress Rehearsals (MDRs), and countdown. Determine instrumentation status, commit instrumentation for launch support, and direct resolution of instrumentation anomalies to ensure range systems are available to meet requirements in each launch Operations Directive.

7.4.7.3. Validate and prioritize range sustainment and modernization requirements. Provide requirements to HQ AFSPC for validation per AFI 63-1101, ***Modification Management***, and AFSPCI 63-104, ***Modifications to Systems and Implementation Approval Process***.

7.4.7.4. Serve as program management office for all major range contracts. Integrate contracting, financial, and technical functional areas with program management.

7.4.7.5. Provide recommendation to WG/CC on acceptance of new or modified range systems for operational use and approve shut-down of superseded operational range systems.

7.4.7.6. Provide technical management function for daily operations, maintenance, and systems engineering based sustainment of launch infrastructure, satellite processing, ordnance services, and mission critical launch communications.

7.4.7.7. Ensure configuration control of mission critical launch infrastructure and systems is maintained in compliance with AFI 63-1201.

7.4.7.8. Provide Program Management functions for the Range O&M contract vehicle to include source selection, award fee, contract modifications to meet emerging requirements, financial resources, and liaison with the functional area chiefs.

7.4.7.9. Coordinate on all contractor procedures that may impact range operations.

**7.5. Launch Group (LCG) Responsibilities:**

7.5.1. General Responsibilities:

7.5.1.1. Conduct LVMA, SVMA and risk assessment via DIRLAUTH relationship.

7.5.1.2. Execute SMC program assignments within the scope of applicable launch contracts.

7.5.1.3. Oversee safety, security, environmental compliance, and resource protection for LV, SV, and facilities that the SW/CC has been assigned flight worthiness and LVMA/SVMA responsibilities.

7.5.1.4. Provide trained LCG members.

7.5.1.5. Ensure a structured training and certification program is developed, documented and maintained for key personnel supporting DoL operations. Ensure inclusion of

procedures to identify any health or medical condition that could impair performance of mission duties.

7.5.1.5.1. See AFSPCI 10-1202 for minimum program requirements, as applicable.

7.5.1.6. Perform launch site integration for LV, SV, facility, and infrastructure operations.

7.5.1.7. Standardize LCG operations policies and procedures.

7.5.2. Commander, Launch Group (LCG/CC) Responsibilities:

7.5.2.1. Responsible and accountable to SW/CC for launch operations, resource protection of AF launch facilities, and execution of specific tasks in support of SMC Space Flight Worthiness certification as identified by the appropriate SMC Systems Group/Wing Commander, via DIRLAUTH relationship.

7.5.2.2. Support FRR, as required.

7.5.2.3. Participate in Wing LRR and report LV, SV, and facilities readiness, as applicable. Advise LDA on a decision to enter or proceed with the launch countdown. See **Attachment 3** for information on LRR and discussion items.

7.5.2.4. Appoint and certify the Air Force Launch Director (AFLD).

7.5.2.5. **(Added-30 SW Only)** Authorize use of locally developed procedures identified by Unit Commander where no specific TO guidance is applicable.

7.5.3. Space Launch Squadron (SLS) and 1st Air and Space Test Squadron (ASTS) Responsibilities:

7.5.3.1. Provide fully trained and certified operations personnel for all missions.

7.5.3.2. Perform risk assessment in support of Flight Worthiness Certification processes.

7.5.3.3. Review and coordinate on LV launch countdown procedures for all DoD and NRO space lift missions. Non-SMC missions are supported at the direction of the WG/CC on an excess capacity basis.

7.5.3.4. (1 ASTS Only) Provide processing and launch support integration functions for experimental space systems, space launch vehicles, targets and interceptors, as applicable.

7.5.3.5. **(Added)** (1 ASTS Only) Write local procedures based upon applicable reference technical data or inputs from subject matter experts or engineers.

7.5.3.6. **(Added)** (1 ASTS Only) Review and update procedures with the program office, Wing Safety office and with external subject matter experts, as applicable.

7.5.3.7. **(Added)** (1 ASTS Only) Incorporate changes from dry-runs, real-time redlines and recommendations from coordination.

7.5.3.8. **(Added)** (1 ASTS Only) Gain final procedure approval by the program office, Wing Safety office and Unit Commander.

7.5.3.9. **(Added)** (1 ASTS Only) Gain Group Commander authorization for use of procedures identified by Unit Commander for the appropriate launch campaign.

7.5.3.10. **(Added)** (1 ASTS Only) Conduct review of reference technical data immediately prior to performing the procedure for relevant changes.

7.5.3.11. **(Added)** (1 ASTS Only) Maintain copies of as-run-procedures for historical reference for the life of the program.

7.5.4. Launch Support Squadron (LCSS) Responsibilities:

7.5.4.1. Perform risk assessment for assigned SVs in support of life-cycle systems engineering and flight worthiness processes.

7.5.4.2. Perform management, oversight, maintenance, and sustainment of satellite processing facilities and LCG common-use facilities.

7.5.4.3. Review and coordinate on all SV processing and launch countdown procedures for all DoD space lift missions as provided for by the contract and assignments from the SMC program office.

7.5.4.4. Ensure training and certification/qualification programs are maintained and administered for all launch personnel.

**7.6. Mission Support Group (MSG) Responsibilities:**

7.6.1. General Responsibilities:

7.6.1.1. Perform base civil engineering to provide, protect, and maintain facilities and supporting infrastructure.

7.6.2. Mission Support Group Commander (MSG/CC) Responsibilities:

7.6.2.1. Serve as the Emergency Operations Center (EOC) Commander.

7.6.3. Civil Engineering Squadron (CES) Responsibilities:

7.6.3.1. Conduct range O&M of Real Property (RP) and Real Property Installed Equipment (RPIE) to support space lift operations except where owned and/or provided as Government Furnished Property (GFP) by a launch provider, unless support for such property is specifically made a responsibility of the Government under contract.

7.6.3.2. Provide O&M of RP and RPIE as required by lease, support agreement, or contract during pad preparation work period before launch to support space lift operations, with focus on successful launch readiness assurance. In addition, support space lift operations by providing O&M of RP and RPIE as required by lease, support agreement, or contract after launch work period, with focus on pad restoration tasks due to rocket blast damage.

7.6.3.3. Ensure Explosive Ordinance Disposal (EOD), Emergency Management, and Fire Emergency Services early participation in the launch planning process. This action will ensure these critical mitigation functions are prepared should an incident occur.

# Chapter 8

## DAY OF LAUNCH (DOL) POSITIONS, ROLES, AND RESPONSIBILITIES

### 8.1. Launch Decision Authority (LDA) Responsibilities:

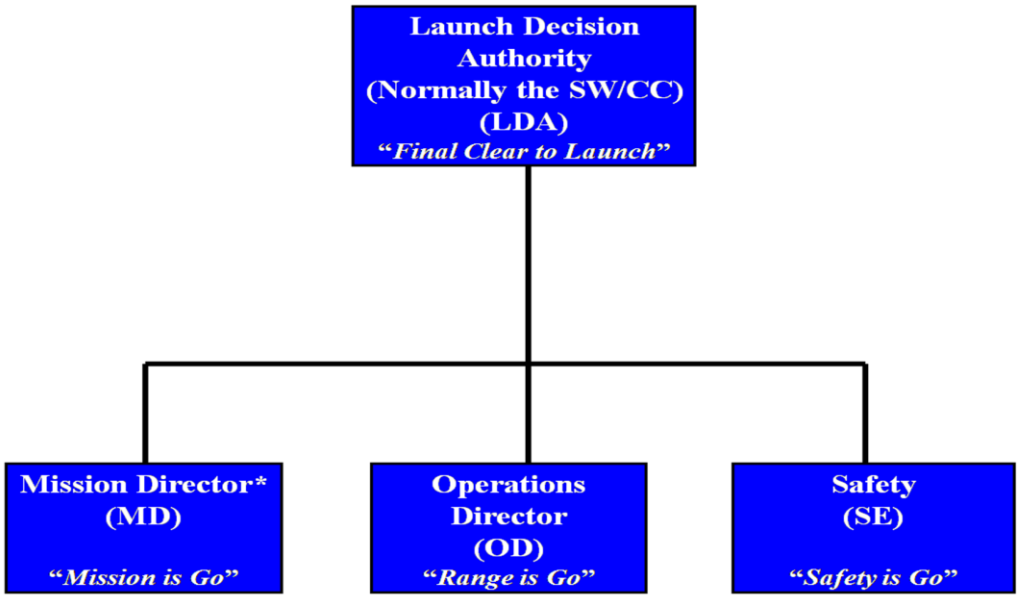
8.1.1. Normally, the SW/CC serves as the LDA, exercising launch decision authority for DoL activities, or delegates the LDA function to a trained and certified LDA; LDA may not override a "No-Go" decision of the MD.

8.1.2. For all operations, the LDA ensures the safety of the public and protection of resources.

8.1.3. The individual exercising LDA is accountable to 14 AF/CC for SMA and launch execution.

8.1.4. Assess inputs from MD, Operations Director (OD), and SE, and issue the final "clear to launch." See **Figure 8.1**.

**Figure 8.1. Day of Launch Execution**




* See paragraph 8.2.1 for MD appointment requirements.

8.1.5. Exercise waiver authority for mandatory launch safety requirements.

### 8.2. Mission Director (MD) Responsibilities:

8.2.1. MD is appointed, trained, and certified by the SMC/CC for every DoD launch of SMC-acquired space lift systems/services. The NRO appoints an MD for NRO missions. MDs for other agency launches are appointed by those agencies. For ICBM launches, refer to AFSPCI 99-102 for MD roles.

8.2.2. Passes the mission "Go/No-Go" recommendation to the LDA.

8.2.3. Ensure space flight worthiness.

8.2.4. Lead DoL LV and SV teams through countdown, launch, and satellite separation.

8.2.5. Exercise waiver authority for launch agency requirements.

**8.3. Operations Director (OD) Responsibilities:**

8.3.1. The OG/CC, or his/her designated representative who is trained and certified in the OD position, serves as OD in DoL activities.

8.3.2. Report range readiness to the LDA and ensure all range resources are capable and ready to support range operations.

8.3.3. Oversee countdown and advise LDA on range operational issues.

**8.4. Chief of Safety (SE) Responsibilities:**

8.4.1. Serve as SE, the senior safety advisor to the LDA, for DoL activities or delegate the SE function to an experienced Wing Safety professional.

8.4.2. Assess safety risks and provide safety "Go/No-Go" advisement to the LDA on DoL.

8.4.3. Develop and implement required program practices and procedures to reduce the safety risk during mission accomplishment.

8.4.4. Ensure assessment of launch/space vehicle systems, especially relating to public safety, as well as toxics/blast/debris hazards to mission-essential personnel and the general public.

8.4.5. Ensure vehicle/area is clear for launch.

8.4.6. Provide Wing interface with the Local Emergency Management representative.

8.4.7. Provide personnel for contingency response support/EOC duties.

8.4.7.1. Activities include coordinating movement of personnel inside the impact limit line during countdown, coordinating activities of firefighters, security forces, bioenvironmental, and emergency response personnel.

**8.5. Air Force Launch Director (AFLD) Responsibilities:**

8.5.1. The appropriate Squadron Commander (SQ/CC) normally serves as AFLD for LV/SV DoL activities, as applicable, or delegates the AFLD function to a trained and certified AFLD.

8.5.2. Lead the AF integrated LV/SV launch operation and advise the MD and LDA, when applicable, during the launch campaign and countdown. Provide senior-level guidance to the Air Force launch team.

8.5.3. Coordinate status and actions with Range Operations Commander (ROC).

8.5.4. Provide the LDA and MD, when applicable, with impact assessments to range countdown operations caused by LV or SV anomalies and impacts to LV or SV countdown operations caused by range anomalies.

8.5.5. DELETED

8.5.6. DELETED

**8.6. Launch Vehicle System Lead (LV Lead) Responsibilities:**

8.6.1. Provide the LV "Go/No-Go" recommendation to the MD.

8.6.2. LV Lead has fleet-wide responsibility for the LV program.

**8.7. Satellite Vehicle System Lead (SV Lead) Responsibilities:**

8.7.1. Provide the SV "Go/No-Go" recommendation to the MD.

8.7.2. SV Lead is normally the SV Program Director who has lifecycle responsibility for the SV program.

**8.8.** DELETED

8.8.1. DELETED

8.8.2. DELETED

8.8.3. DELETED

8.8.4. DELETED

8.8.5. DELETED

8.8.6. DELETED

8.8.7. DELETED

**8.9. (1 ASTS Only) Air Force Launch Controller (AFLC) Responsibilities:**

8.9.1. Provide LV and SV status to AFLD, as required.

8.9.2. Coordinate status and actions with Range Control Officer (RCO).

8.9.3. Calculate new T-0 countdown pickups with SV and LV contractor, as required, and pass recommendation to AFLD for ROC and MD concurrence.

**8.10. Range Operations Commander (ROC) Responsibilities:**

8.10.1. Overall lead for range support to the launch campaign process including coordinating pre-launch and launch events, and post-launch review briefs.

8.10.2. Responsible for launch-specific mission plans for range support.

8.10.3. Serve as overall range operations lead during range space lift and ballistic missile test countdown operations.

8.10.4. Determine range readiness based on range support and flight control status. Coordinate range anomaly resolution actions and assess operational impacts.

8.10.5. Ensure the proper DoL frequency mitigation procedures are implemented, as required.

8.10.6. Determine and pass instrumentation outage information and subsequent range status ("Go/No-Go") to the LDA and OD.

8.10.7. Coordinate status and actions with the AFLD/launch agency.

8.10.8. (30 SW Only) Primary DoL interface providing range status and readiness. Provide launch agency with final "range clear to launch" as authorized by the LDA.

8.10.9. (30 SW Only) Hold count for safety or launch agency requirements, when required.

**8.11. Range Control Officer (RCO) Responsibilities:**

8.11.1. Direct range instrumentation configuration actions, control range timing equipment and countdown clocks, and conduct liftoff tests.

8.11.2. Ensure range instrumentation and network assets are configured per applicable operations directives.

8.11.3. Coordinate range anomaly actions between the launch agency, the range team, and contractor personnel. Determine range status.

8.11.4. Hold count for safety or launch agency requirements, when required.

8.11.5. Execute frequency mitigation procedures, as required.

8.11.6. (45 SW Only) Primary DoL interface providing range status and readiness. Provide launch agency with final "range clear to launch" as authorized by the LDA.

8.11.7. (30 SW Only) Coordinate status and actions with 1 ASTS AFLC.

**8.12. Senior Mission Flight Control Officer (SMFCO) Responsibilities:**

8.12.1. Provide final decision for in-flight actions. The SMFCO will assess MFCO in-flight termination recommendations unless certain time-critical circumstances do not permit the MFCO and SMFCO to coordinate their actions.

8.12.1.1. The SMFCO communicates directly with the LDA in the plus-count.

8.12.2. Execute mission flight rules consistent with Range Safety requirements and operational needs.

8.12.3. Hold count for range safety outages, when possible, or user mandatory assets/requirements, when required.

**8.13. Mission Flight Control Officer (MFCO) Responsibilities:**

8.13.1. Execute mission flight rules generated by Wing Safety, which are consistent with range safety requirements.

8.13.2. Provide final Flight Control "Go/No-Go" for launch recommendation to the ROC in compliance with mission rules and safety requirements.

8.13.3. Determine if the flight of a LV should be allowed to continue or be terminated based on actual flight data and SW/CC approved mission rules.

8.13.3.1. The MFCO communicates directly with the LDA in the plus-count.

8.13.3.2. The MFCO executes LV termination (if possible) after approval from the SMFCO.

8.13.4. May upgrade required assets to mandatory, unless specified differently in the mission rules.

8.13.5. Hold count for range safety outages, when possible, or user mandatory assets/requirements, when required.

**8.14. (45 SW Only) Surveillance Control Officer (SCO) Responsibilities:**

8.14.1. Perform launch area surveillance, which encompasses air and sea areas designated as the Flight Hazard Area and the Launch Danger Zone.

8.14.2. Direct activities in the Surveillance Control room and coordinate actions between the Aerospace Control Officer (ACO) and the Sea Surveillance Officer (SSO).

8.14.3. Ensure hazard areas are clear of unauthorized aircraft, ships, boats, and people prior to giving a final "GO" call for launch.

**8.15. Aerospace Control Officer (ACO) Responsibilities:**

8.15.1. Direct mission-related aircraft operations conducted on the range during launch operations.

8.15.2. Coordinate to ensure designated airspace and other applicable areas (30 SW Only: sea space and railroad protection) are clear of unauthorized encroachments.

8.15.3. Ensure air controllers comply with applicable DoD, Air Force, and FAA rules and procedures.

8.15.4. (30 SW Only) Hold count for safety or launch agency requirements, when required.

8.15.5. (45 SW only) Report activity status and recommend “Go/No-Go” to the SCO.

**8.16. (45 SW only) Sea Surveillance Officer (SSO) Responsibilities:**

8.16.1. Operations lead for executing safety operations to protect the sea-fairing populace.

8.16.2. Coordinate the movement of vessels through surveillance control aircraft, supporting radars, and the United States Coast Guard (USCG).

8.16.3. Predict the location of vessels or aircraft at T-0 and divert targets to a safe location prior to launch.

8.16.4. Report activity status and recommend "Go/No-Go" to the SCO.

**8.17. Launch Weather Officer (LWO) Responsibilities:**

8.17.1. Ensure weather systems are available to meet launch requirements as specified in operations directives, instructions, plans, and procedures.

8.17.2. During DoL operations, serve as LWT member and act as weather single point of contact between LWT and ROC, and call a weather “hold” when weather violations exist.

8.17.3. Observe, forecast, and evaluate weather (including upper air wind profiles, severe weather advisory and warning services, etc.) with respect to safety and launch agency commit criteria, status reporting, and launch recommendations.

**8.18. Range Engineer (RGE) Responsibilities:**

8.18.1. Ensure range instrumentation is available and ready to satisfy range safety and range user requirements during launch operations.

8.18.2. Serve as the AF technical expert on range instrumentation, assessing the impacts of instrumentation failures, overseeing recovery actions, and committing restored systems to operational use.

8.18.3. Authorize emergency configuration changes to range instrumentation to meet mission requirements.

**8.19. EOC Commander Responsibilities:**

8.19.1. In the event of a catastrophic abort, lead the response team.

C. ROBERT KEHLER, General, USAF
Commander

**Attachment 1**

**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION**

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SMC MD *Training Plan, Mission Director Training Plan*

***Abbreviations and Acronyms***

**14AF**—14 Air Force

**A3**—Directorate of Air, Space, and Nuclear Operations

**ACO**—Aerospace Control Officer

**AF**—Air Force

**AFB**—Air Force Base

**AFI**—Air Force Instruction

**AFLC**—Air Force Launch Crew Commander

**AFLD**—Air Force Launch Director

**AFPD**—Air Force Policy Directive

**AFSCN**—Air Force Satellite Control Network

**AFSPC**—Air Force Space Command

**AFSPCI**—Air Force Space Command Instruction

**AFSPCMAN**—Air Force Space Command Manual

**AFSTRAT**—SP —Air Forces Strategic-Space

**AGE**—Aerospace Ground Equipment

**AIB**—Accident Investigation Board

**AOC**—Air and Space Operations Center

**ASTS**—Air and Space Test Squadron

**C2**—Command and Control

**CC**—Commander

**CCAFS**—Cape Canaveral Air Force Station

**CD**—(SMC) Executive director

**CDR**—Commander

**CES**—Civil Engineering Squadron

**CFETP**—Career Field Education and Training Plan

**CLSRB**—Current Launch Schedule Review Board

**CMR**—Combat Mission Ready

**COLA**—Collision Avoidance

**CSLA**—Commercial Space Launch Act

**CSOSA**—Commercial Space Operations Support Agreement

**CV**—Vice commander

**DIRLAUTH**—Direct Liaison Authorized

**DNRO**—Deputy, National Reconnaissance Office

**DoD**—Department of Defense

**DoDD**—Department of Defense Directive

**DoDI**—Department of Defense Instruction

**DoL**—Day of Launch

**DoT**—Department of Transportation

**EELV**—Evolved Expendable Launch Vehicle

**ELV**—Expendable Launch Vehicle

**EOC**—Emergency Operations Center

**EOD**—Explosive Ordinance Disposal

**ER**—Eastern Range

**EWR**—Eastern and Western Range

**FAA**—Federal Aviation Administration

**FAR**—Federal Acquisition Regulation

**FCM**—Flight Certification Matrix

**FDE**—Force Development Evaluation

**FD&E**—Flight Development and Evaluation

**FRR**—Flight Readiness Review

**GFP**—Government Furnished Property

**GSE**—Ground Support Equipment

**HHQ**—Higher Headquarters

**HQ**—Headquarters

**IAW**—In Accordance With

**ICBM**—Intercontinental Ballistic Missile

**ISD**—Instructional System Development

**JFCC**—Joint Functional Component Command

**JFCC**—SPACE —Joint Functional Component Command for Space

**JSpOC**—Joint Space Operations Center

**JSTO**—Joint Space Tasking Order

**KSC**—Kennedy Space Center

**LCC**—Launch Commit Criteria

**LCG**—Launch Group

**LCSS**—Launch Support Squadron

**LDA**—Launch Decision Authority

**LR**—Launch Systems directorate

**LRR**—Launch Readiness Review

**LTRS**—Launch and Test Range Systems

**LV**—Launch Vehicle

**LVMA**—Launch Vehicle Mission Assurance

**LWO**—Launch Weather Officer

**LWT**—Launch Weather Team

**MAJCOM**—Major Command

**MD**—Mission Director

**MDA**—Missile Defense Agency

**MDR**—Mission Dress Rehearsal

**MFCO**—Mission Flight Control Officer

**MRTFB**—Major Range and Test Facility Base

**MRU**—Military Radar Unit

**MS**—Mission Support

**MSG**—Mission Support Group

**NASA**—National Aeronautics and Space Administration

**NLT**—Not Later Than

**NOAA**—National Oceanic and Atmospheric Administration

**NOG**—Network Operations Group

**NRO**—National Reconnaissance Office

**NSPD**—National Security Presidential Directive

**NSS**—National Security Space

**OD**—Operations Director

**ODMSP**—Orbital Debris Mitigation Standard Practices

**OG**—Operations Group

**O&M**—Operations and Maintenance

**OPR**—Office of Primary Responsibility

**OSD**—Office of the Secretary of Defense

**OSS**—Operations Support Squadron

**OST**—Operations Standardization Team

**PAT**—Process Action Team

**PM**—Program Manager

**PSM**—Program Support Manager

**RCO**—Range Control Officer

**RGE**—Range Engineer

**RMS**—Range Management Squadron

**ROC**—Range Operations Commander

**ROPS**—Range Operations Squadron

**RP**—Real Property

**RPIE**—Real Property Installed Equipment

**RTO**—Responsible Test Organization

**RUCB**—Range User's Coordination Board

**SAV**—Staff Assistance Visit

**SCO**—Surveillance Control Officer

**SDAR**—Space Debris Assessment Report

**SE**—Wing Safety

**SECDEF**—Secretary of Defense

**SPINS**—Special Instructions

**SIB**—Safety Investigation Board

**SIS**—System Interface Specification

**SITREP**—Situational Report

**SLEC**—P —Spacelift Education and Crossover Program

**SLS**—Space Launch Squadron

**SMA**—Spacelift Mission Assurance

**SMC**—Space and Missile Systems Center

**SMFCO**—Senior Mission Flight Control Officer

**SQ**—Squadron

**SSO**—Sea Surveillance Officer

**SV**—Space Vehicle

**SVMA**—Space Vehicle Mission Assurance

**SW**—Space Wing

**SWS**—Space Warning Squadron

**UDS**—Universal Documentation System

**US**—United States

**USG**—United States Government

**USAF**—United States Air Force

**USC**—United States Code

**USCG**—United States Coast Guard

**USSTRATCOM**—United States Strategic Command

**VAFB**—Vandenberg Air Force Base

**WR**—Western Range

**WS**—Weather Squadron

***Terms***

**Acceptance**—Government acceptance of the results of a contractor-executed test procedure or task and acceptance of close-out/disposition of all anomalies or out-of-family/out-of-spec data associated with that procedure or task. AFSPC/A3 will be the operations acceptance authority for all systems unless delegated down. Prior to operations acceptance, operational testing will be accomplished IAW AFI 99-103 and AFSPCI 99-103. Acceptance takes on two forms: One is an acceptance of items/processes/procedures as required by the contract; the other is technical acceptance that the contractor's actions have adequately resolved any anomalies/non-conformances and satisfies Flight/Task Certification Matrix requirements.

**Annual**—When used as a requirement, the term "annual" refers to a 12-month interval.

**Anomaly**—An unexpected or unplanned condition that does not meet provided system performance parameters and which cannot be corrected by organizational maintenance resources in accordance with validated procedures. After analysis, an "out-of-family" condition could be declared an anomaly.

**Anomaly Resolution**—The process to resolve an anomaly. An anomaly resolution team will be formed to resolve/disposition all system anomalies. This team may consist of AFSPC, contractors, and any other personnel needed to resolve the anomaly.

**Approval**—Approval signifies AFSPC approval/acceptance/coordination IAW AFSPC instructions and Memorandum of Agreements.

**Base Operating Support**—Base operating support includes traditional installation support elements such as security, fire protection, disaster control, etc., required to provide, protect, and maintain facilities and supporting infrastructure.

**Current Launch Schedule (CLS)**—The CLS is a fiscal-year-based, 48-month projection of launches from the ER and WR, approved by the 14 AF/CC at the CLSRB. It includes the Executable Launch Schedule. The first two years of the CLS are provided via standard report from LISN. The latter two years are used for operational planning purposes.

**Current Launch Schedule Review Board (CLSRB)**—A semi-annual forum chaired by 14 AF/CC and attended by senior officers, program managers and commercial representatives from the launch community. The purpose of the CLSRB is to review resource, satellite and launch assessments, prioritize launches and approve the CLS.

**Data Review**—Government review of all data, resulting from completion of a contractor-executed test procedure or task, required for government acceptance of that test procedure or task. Data from contractor-run tests and procedures will be reviewed by SMC Systems Directorates, SLS, and/or AFQA according to the Flight Certification Matrix. This data review

is to ensure the test/procedure produced the desired results, to identify any anomaly/non-conformances, and to develop trend data.

**Direct Liaison Authorized (DIRLAUTH)**—That authority granted by a commander (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. Direct liaison authorized is a coordination relationship, not an authority through which command may be exercised.

**Direct Support**—Provide a comprehensive, structured, support process to bring workable systems to the customers. Maximize support of HQ functions to promote operational and administrative effectiveness.

**Discrepancy**—An unexpected or unplanned condition that does not meet system performance parameters but which can be corrected by organizational maintenance resources in accordance with validated procedures at the unit level.

**EELV Launch Service**—Space Launch capability provided by a contractor to place a satellite into a specified orbit. The contractor retains ownership of all flight and ground hardware, engineering analyses, processes, and readiness decisions except as provided under contract.

**Flight Hardware**—All physical elements of the spacelift systems that lift off, in contrast to those space system elements that remain on the ground.

**Flight Readiness**—Assessment of the ability of the entire launch system [LV/SV, critical facilities/infrastructure, range systems, and Aerospace Ground Equipment (AGE)] to meet the current launch schedule.

**Flight Readiness Review (FRR)**—Provides SMC/CC with hardware and software mission status for the LV, the satellite, and/or critical ground systems, as well as associated interfaces. Required for all missions where the SMC/CC is responsible for the certification of the mission, LV, satellite or critical ground system, and FRR is presented to the SMC/CC or a designated representative. The briefing takes place following SV and LV integration.

**Flight Worthiness**—Measures the degree to which a spacecraft, LV, or critical ground system, as constituted, has the capability to perform its mission with the confidence that significant risks are known and deemed acceptable. Flight worthiness certification is granted for the "system as constituted" at the FRR (for SMC) based on a best assessment that the system will perform as expected throughout its lifecycle.

**Insight**—Government surveillance/analysis of contractor activities/engineering associated with delivery of a launch service. Contractor retains all cost control (via contract) and liabilities for mission success.

**Job Order Number (JON)**—A unique number assigned to an account that a contractor and the government uses to charge program-related expenses (including labor and materials).

**Launch Mishap**—A mishap occurring during launch vehicle operations, including upper stages. This includes payloads that do not obtain the intended orbit, re-contact of the payload with the upper stage/launch vehicle, or collisions before completion of the initial drift orbit, and flight safety system failures.

**Launch Processing**—Launch site performance of engineering, test operations, processing/integration, and maintenance tasks associated with flight hardware/software, ground

support equipment (GSE), and infrastructure to prepare the integrated stack (consisting of the LV, upper stage, and satellite) for space launch.

**Launch Readiness Review (LRR)**—Assessment of both the ability to meet the mission design requirements and the current launch schedule based on the sum of flight worthiness and flight readiness.

**Launch Vehicle Mission Assurance (LVMA)**—LVMA is technical and management process rigorously, continuously, and iteratively employed over the life-cycle of a launch system (mission conception to space vehicle separation) to maximize mission success. LVMA encompasses system engineering, risk management, quality assurance, and program management by an experienced, stable launch agency team. LVMA is achieved through integrated developmental processes and/or independent technical assessment and requires expenditures commensurate with the criticality of the mission and the consequences of failure.

**Mission Assurance**—An integrated engineering-level assessment of analysis, production, verification, validation, operation, maintenance, and problem resolution processes performed over the life cycle of a program by which an operator/user determines that there is an acceptable level of risk to employment of a system or end item to deliver an intended capability in an intended environment. The objective of the assurance process is to identify and mitigate design, production, test and operational deficiencies that could impact mission success.

**Mission Failure**—For any reason the satellite does not achieve the specified final orbit in the mission specific Interface Control Document or is not able to reach an operational status.

**Major Range and Test Facility Base (MRTFB)**—The designated core set of DoD Test and Evaluation (T&E) infrastructure and associated workforce that must be preserved as a national asset to provide T&E capability to support the DoD acquisition system.

**Observation**—Direct government observation of the execution and recording (if applicable) of a test procedure or task. An "Observed" test procedure or task is one in which all steps (or certain pre-defined steps) have been completed, all anomalies have been noted (with appropriate documentation generated), and all applicable data captured while being observed by a government representative. Observed test procedures or tasks are typically those that must be accomplished correctly, cannot be easily verified by data review or post-test, and include a high risk of inducing collateral damage that could remain undetected.

**Oversight**—Government surveillance/analysis and control of contractor activities/engineering associated with delivery of a launch service. Government assumes liabilities for costs and mission success.

**Public Safety**—Safety involving risks to the general public of the United States or foreign countries and/or their property (both on and off-base); includes the safety of the people and property that are not involved in supporting a launch along with those that may be within the boundary of the launch site.

**Range Operations**—Any procedure that requires the use of range resources (instrumentation, collision avoidance, weather, etc). The execution of operations focused on efficient and coordinated employment of all range assets and processes to enable the safe and timely launch of payloads and test vehicles.

**Range Users Coordination Board (RUCB)**—An operational committee sponsored by HQ AFSPC to provide a continuing working forum between AFSPC, SMC, spacelift range users, and industry to exchange information on business, technical and operational practices related to the Eastern and Western Ranges at Patrick and Vandenberg AFBs. The RUCB is established to share ideas, plans and concerns for the Eastern and Western Ranges. It will serve as a clearing house for key industry, civil and military leaders to discuss business, technical and operational practices related to the Eastern and Western Ranges.

**Real Property (RP)**—Land, buildings, structures, utilities, improvements and appurtenances thereto. Includes equipment attached to, and made part of, buildings and structures but not movable equipment. Primarily consisting of facilities and other non-equipment support system infrastructure.

**Real Property Installed Equipment (RPIE)**—Government-owned or leased support equipment, apparatus and fixtures that are essential to the function of the real property and permanently attached to, integrated into or on government-owned or leased property.

**Resource Protection**—The protection of Air Force flight hardware, facilities, support equipment, or other property from damage due to mishaps.

**Risk Assessment**—Actions conducted for mission assurance purposes to: (1) identify and capture risk items from procedure review and process observation; (2) assign a technical risk level to each item; and (3) track each item through resolution/mitigation steps to acceptance or closure.

**Space Vehicle Mission Assurance (SVMA)**—SVMA is a technical and management process rigorously, continuously, and iteratively employed over the space vehicle life cycle, i.e. all activities associated with the development, testing and operation of space vehicles in orbit or deep space, to include spacecraft design, orbital operations, reentry, recovery and disposal elements. SVMA encompasses system engineering, risk management, quality assurance, and program management by an experienced, stable space vehicle agency team. SVMA is achieved through integrated developmental processes and/or independent technical assessment and requires expenditures commensurate with the criticality of the mission and consequences of failure.

**Spacelift**—The ability to project power by transporting people and materiel to and/or through space, to include test launches and sub-orbital missions. This includes the deployment, sustainment, and augmentation of satellite constellations by delivering space systems to the required orbit.

**Spacelift/Launch Operations**—Actions conducted by USAF/contractor personnel at the launch base to control and execute spacelift including test launches (i.e. conduct insight/oversight/assessment of launch processing/handling from receipt of hardware through launch, launch countdown, countdown simulations, integrated systems verifications, dress rehearsals, etc.).

**Spacelift Mission Assurance**—SMA is a command responsibility and authority, exercised through a series of processes for ensuring safe and successful spacelift missions. SMA includes flight worthiness, public safety, range operations and base operating support.

**Support Equipment (SE)**—All equipment (i.e., AGE, RPIE, etc.) required to make or keep a spacelift system, subsystem or item of support equipment operational in its intended environment.

**Task Force**—A temporary grouping of units, under one commander, formed for the purpose of carrying out a specific operation or mission.

**Universal Documentation System (UDS)**—The UDS provides a common language and format for stating program, mission, and test requirements and supporting documentation.

**Verify**—To review, inspect, test, check, measure, audit or otherwise confirm that products, processes, or documents conform to specified requirements. Verification may be performed after work completion, e.g., safety wiring.

**Attachment 2**

**DELETED**

## Attachment 3

## LAUNCH READINESS REVIEW ASSESSMENT

**A3.1.** The LRR is mandatory. The following personnel are required at the LRR (or their appropriate representative):

LDA (chairs the LRR)

MD

LRSW/CC for LRSW missions

SV Systems Wing/CC or Group/CC for appropriate missions

OG/CC

LCG/CC for missions supported by the LCG

SW/SE

MSG/CC

FAA Representative for FAA-licensed launches

Contractor Representative

Civil Agency Representative for civil missions

**A3.2.** At a minimum, the LRR must cover the following items (excluding the Space Shuttle):

A3.2.1. Launch Personnel. Review personnel status of key launch positions to include the certification status.

A3.2.2. Mission Description.

A3.2.3. Schedule. Identify all major milestones of all missions (excluding Space Shuttle) leading up to launch and affecting the scheduled launch.

A3.2.4. Launch Facility/Platform. Review the status and any remaining open items or major discrepancies.

A3.2.5. Launch Vehicle. Review the status and any remaining open items or major discrepancies.

A3.2.6. Upper Stage (if applicable). Review the status and any remaining open items or major discrepancies.

A3.2.7. Satellite/Payload. Review the status and any remaining open items or major discrepancies.

A3.2.8. Weather Support. Review required weather support. Present DoL forecast (and 24-hour delay forecast) to include standard weather parameters and probability of violating weather launch commit criteria (LCC) values, and as applicable; terminal area, landing site and any special weather considerations (i.e. tropical storm threats, space environmental impacts, weather equipment/communications outages, etc.)

A3.2.9. Range Support. Address range configuration and status of all supporting range assets and contingency plans or work-arounds. Identify "mandatory" and "required" range and safety instrumentation/support and waiver authority.

A3.2.10. Network Support (if applicable). Review readiness status of the Air Force Satellite Control Network (AFSCN), mission control centers and abort/recovery/contingency plans. Coordinate with 50 Space Wing's Network Operations Group (50 NOG).

A3.2.11. Launch Safety. Present the launch hazard assessment, including an overview of the risk assessments (debris, toxics, and blast overpressure), as applicable. Announce the launch mishap investigation authority. Report results of launch system safety waiver review.

A3.2.12. Contingency Response Support. Provide readiness status of EOC, its positioning, and key personnel. Include, by name, the interim SIB President and agency having mishap investigation authority. Review readiness status of the security forces and applicable waivers/deviations to security requirements.

A3.2.13. Countdown Summary. Review key milestones in the launch vehicle, satellite, and range countdowns for potential problem areas and hold points as well as any known collision avoidance launch countdown holds in the launch window.

A3.2.14. Open Action Items. Address the status of all applicable open action items (previous lessons learned, Operations Review Boards, etc.) related to the affected operation.

A3.2.15. Readiness. The MD, OD, LCG/CC, MSG/CC, SW/SE will certify readiness to proceed.

## Attachment 4

## FREQUENCY MITIGATION PROCESS

***WARNING:*** The following information will be classified **SECRET**:.

***Dates of approved mitigation or verifying that a request for mitigation has been granted for a particular launch.***

***Questions regarding this warning should be directed to AF*SPC/A3FM, DSN 692-3789/6207**

***NOTE:*** This AFSPCI is directive only to AFSPC units. However, launches from other ranges must work through the appropriate lead range to submit mitigation requests to the Joint A6.3. Space Operations Center (JSpOC) in the same manner..

STEP 1. 30/45 SW identifies any launch requiring mitigation based on their own criteria and notifies the appropriate Range Operations and Launch Squadron at least 4 weeks prior to scheduled launch date.

STEP 2. 30/45 SW Range Operations notifies JSpOC Strategy Division and Combat Plans Division of potential conflict with at least 3 weeks notice using secure email or telephone at:

**jspoc.strategy@afspc.af.smil.mil**

**jspoc.combatplans@afspc.smil.mil**

Commercial: (805) 606 9841 or DSN: 276 9841

STEP 3. JSpOC Combat Plans Division confirms with appropriate Space Warning Squadron that mitigation procedures are possible for the circumstances of that particular launch then seeks Commander Joint Functional Component Command for Space (CDR JFCC-SPACE) approval for an entry in the Joint Space Tasking Order (JSTO). The JSTO directs mitigation procedures and authorizes Direct Liaison Authorized (DIRLAUTH) between the range and the Space Warning Squadron (SWS) concerned.

STEP 4. Range Operations and SWS agree on local procedures to check for real-time verification of mitigation during the countdown and notify the Radar operator quickly when mission is complete or mitigation is no longer required.

STEP 5. If launch scrubs: Range advises the SWS, JSpOC Combat Ops, and JSpOC Combat Plans of the new launch date/time. Process repeats beginning with step 3.