ASSURED ACCESS TO SPACE

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Spacelift Operations. Spacelift operations are the ability to deliver satellites, payloads, and material into space. They are conducted to deploy, sustain, augment, or reconstitute space-based capabilities supporting US military operations and/or national security objectives. Spacelift operations begin with launch campaign generation—preparing the launch vehicle (LV), spacecraft and facilities for launch, performing the launch, and successfully completing the spacelift mission phases. Spacelift reconstitution of satellite constellations may require responsive spacelift, availability of replacement spacecraft, and properly trained personnel to launch and operate the systems. The figure on Wideband Global SATCOM Encapulsation and Mintaur 1 Launch, depicts encapsulation of a wideband global SATCOM satellite and lift-off of an Air Force Minotaur 1 space launch vehicle.

Wideband Global SATCOM Encapsulation and Minotaur 1 Launch

Both launch ranges are retained by the Air Force as a service administrative control (ADCON) function and therefore do not fall under the purview of USSTRATCOM. Air Force spacelift squadrons, squadrons with satellite mission control systems, and systems program offices coordinate and integrate their activities under the direction of Air Force Space Command (AFSPC) and 14th Air Force (AFSTRAT). These activities include preparing satellites and their mission payloads for launch, conducting launch and initial orbital positioning, and accomplishing on-orbit check-out. Once a satellite has passed the requisite trial period and is ready to conduct its mission, it is then presented by AFSPC to USSTRATCOM for assignment and use.

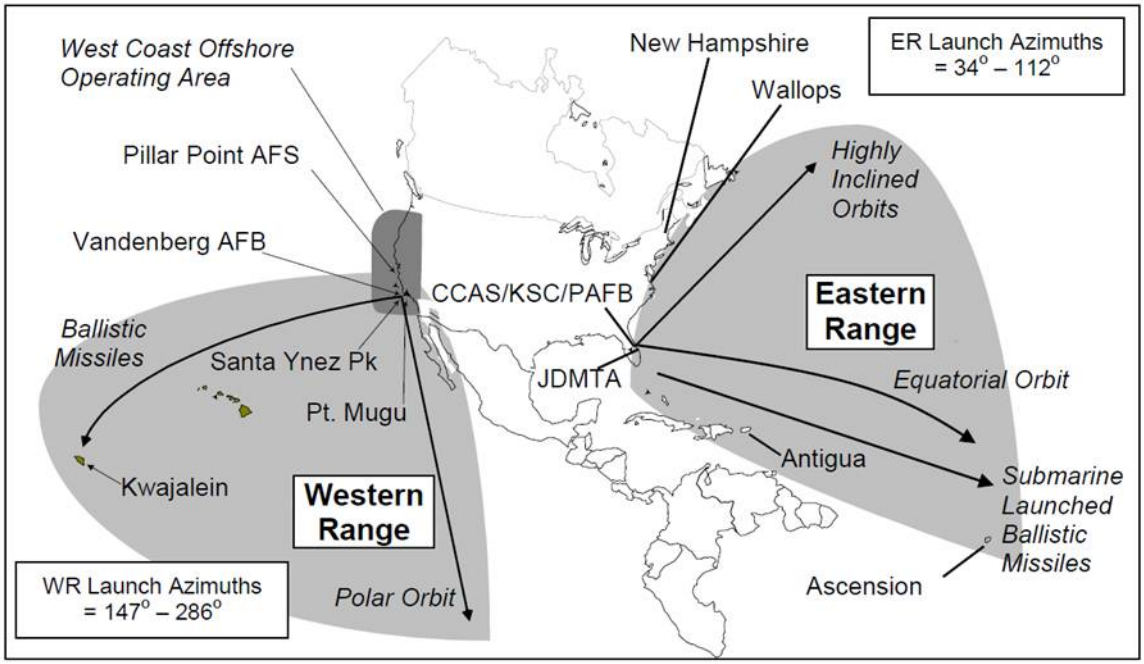
The use of commercial launch vehicles may be advantageous in certain instances to augment Department of Defense (DOD) launch capability. This aids the development of the US commercial space industry and supports the intent of the National Space Policy (NSP) to leverage alternative space capabilities. Space launches are planned well in advance (often years) and executed in accordance with the established space launch manifest (SLM). Planners must take into account long lead times involved with the SLM scheduling process.

Range Operations. Range operations are a key enabler of spacelift operations and include the capability to provide assured, responsive access to space safely and reliably. Space ranges provide operations support, launch traffic control (LTC), and scheduling services for spacelift operations, to include telemetry architectures, instrumentations sites, and flight safety systems. Launch ranges may also be responsible for planning and execution of spacecraft recovery operations.

LTC is provided via robust, responsive, flexible launch ranges and provides positive control of LVs during powered flight from lift-off to the horizon to protect the public and ensure safe passage to orbit. LTC also provides for the receipt and relay of LV mission/performance data. LTC supports the safe return of reusable launch/lift assets, such as the space shuttle follow-on and other proposed future launch systems, to designated landing sites. US Space Transportation Policy[1] states, "The federal space launch bases and ranges are vital components of the US space transportation infrastructure and are national assets upon which access to space depends for national security, civil, and commercial purposes."[2]

Air Force range operations are conducted from two launch ranges—the Eastern Range (ER) and the Western Range (WR) (see figure title **Eastern Range and Western Range**).[3] The ER supports most northern and eastern trajectory space launches with some excluded for safety restrictions. In addition to supporting DOD, National Aeronautics and Space Administration (NASA), and non-government spacelift operations, the ER supports Navy submarine launched ballistic missile (SLBM) tests as well as smaller test and evaluation operations such as the Department of Homeland Security Customs and Border Protection unmanned aerial vehicle program. The WR supports southern trajectory space launches capable of achieving polar orbits. The WR also supports intercontinental ballistic missile, Navy SLBM, and Missile Defense Agency tests.

[1] US Space Transportation Policy, 21 Dec 2004.
[2] US Space Transportation Policy, paragraph I.(6), 21 Dec 2004.
[3] AFSPC Launch and Test Range System Enabling Concept Update, 29 Sep 2009.



Eastern Range and Western Range

Routine launch capabilities are the backbone for assured access to space; however, operationally responsive space (ORS) is an emerging solution to satisfy urgent warfighter needs.[4] ORS seeks to place small class payloads into space within days-to-weeks of tasking to augment, reconstitute, or replenish critical space-based warfighting capabilities such as intelligence, surveillance, and reconnaissance (ISR) and communication. To assure delivery of space power that is operationally relevant to JFC needs, ORS will require a combination of responsive elements: spacecraft, launch vehicles, infrastructure, range support, command and control (C2), ground elements, and updated tactics, techniques, and procedures.

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[4] AFSPC Functional Concept for Space Support, 29 May 2007.