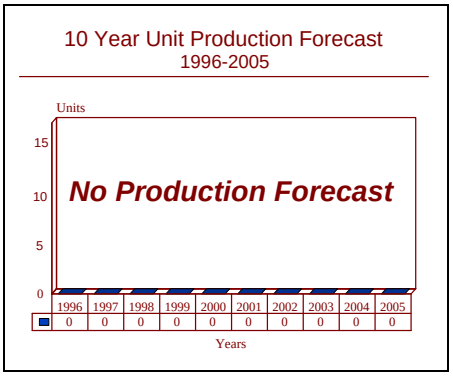
AGM-69 SRAM I - Archived 3/97

Outlook

- Production completed.
- Part of inventory could be used as ballistic missile interceptors.



Orientation

Description. Nuclear-armed strategic stand-off missile.

Sponsor. US Department of Defense through the US Air Force, under the auspices of Air Force Systems Command (AFSC), Andrews AFB, MD, USA. Executive management by USAF Aeronautical Systems Division, Dayton, OH, USA.

Contractors. Produced by Boeing Aerospace Company, Kent, WA, USA.

Major Subcontractors. Ford Aerospace Corporation, General Motors Corp, Delco Electronics Division; Lockheed Propulsion Company; Thiokol Wasatch; Singer Kearfott and Universal Match Corporation (see Appendix IV for a complete listing).

Status. Out of production, but part of the inventory could be modified for use as a ballistic-missile interceptor. In June 1990, the entire SRAM-A inventory was grounded due to concerns about the missile's safety. In 1991, the Secretary of Defense had all SRAM Is removed from the active bomber force. Although the missile itself is out of production, Boeing was awarded an $11.3 million contract in late 1980 for low-rate production of the longer-life solid-propellant rocket motor for AGM-69A missiles modified to an interim AGM-69B. AGM-69 inventories were retrofitted with the new rocket motors through early 1984.

Total Produced. Approximately 1,482 (including 20 RDT&E units) AGM-69 SRAM I missiles were produced.

Application. Air-launched for strategic suppression of anti-bomber defenses by B-1s, B-52s and FB-111s as a penetration aid.

Price Range. Modifications to AGM-69B status cost about $55,000 per unit. The original AGM-69 SRAM-A cost about $740,000 in 1975.

Technical Data

Dimensions		Metric	US
	Missile Length	425 cm	13.94 ft
	Missile Diameter	45 cm	1.47 ft
	Missile Weight	1,010 kg	2,222 lb

Performance

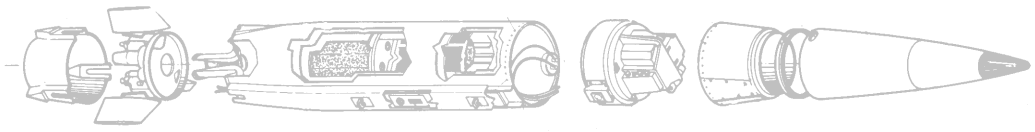
Speed	Mach 3.5	Mach 3.5
Altitude	Semi-ballistic to terrain following	
Range (Min)	60 km	32.39 nm
Range (Max)	160 km	86.39 nm

Propulsion. A solid-propellant, end-burning, restartable, two-pulse motor, designated LPC-415, developed by the now-defunct Lockheed Propulsion Company, Redlands, CA. Thiokol Wasatch, Utah, was the primary source for the rocket motor, as well as the improved SRAM-B motor. All existing AGM-69 missiles have been recycled with the new rocket motor, possessing a more chemically stable propellant and consequently a longer shelf-life (some ten years).

Control & Guidance. The Delco 2,000-word-memory computer developed by General Motors Corp, Delco Electronics Division, Milwaukee, WI, is the heart of the system. The KT-76 inertial guidance system with terrain avoidance capability is provided by Singer Kearfott, Little Falls, NJ. It is fairly certain that the entire AGM-69 inventory has been upgraded with an 8,000-word-memory computer.

Launcher Mode. Twenty missiles are deployed by the B-52G/H, 12 in three-round underwing clusters and eight on a rotary launcher in the aft bomb bay. The FB-111 can carry six AGM-69 missiles: four on swiveling underwing pylons and two internally. The AGM-69 was intended to complement cruise missiles in the latter Eighties aboard the B-1B, along with B-52 and FB-111 aircraft.

Warhead. A W-69 nuclear warhead with a 170-200 kt yield; plutonium is the fissile material. The unidynamics safe/arm fuse system is developed and produced by Universal Match Corporation, Phoenix, AZ. The decoy and penetration aids are packaged by Ford Aerospace Corporation, Newport Beach, CA.



BASIC SRAM-A

Source: US Air Force

Variants/Upgrades

The United States planned to develop two versions of the SRAM, but only one ever entered production. The SRAM-A is the US Air Force's primary short-range nuclear missile. However, the United States is considering using part of the SRAM-A inventory in conjunction with the LEAP (Lightweight Exo-Atmospheric Projectile) as a ballistic missile interceptor. For additional information, please see the pertinent entries under the Program Review section.

Program Review

Background. The AGM-69 is designed to be carried aboard strategic bombers to complement the use of gravity bombs in the destruction of ground targets. Armed with a nuclear warhead, AGM-69 is a versatile weapon with a wide application against a variety of targets. It can be fired in a ballistic trajectory to medium-range targets, or it can be employed at short range at very low altitude. The missile can also be fired at any angle in relation to the target, even at 180 degrees, and will reverse itself and aim toward the target. Essentially, the AGM-69 was designed and developed to improve aircraft routing and targeting flexibility for Strategic Air Command (SAC) bombers upon entering enemy air defense structures.

Between March 1972 and July 1975, Boeing delivered 1,500 SRAM-A missiles to SAC for use aboard B-52 and FB-111 bombers. Initially, another 450 missiles were placed on option, but this was never exercised and the program was allowed to terminate. Jigs and production equipment were then placed into storage at USAF plant #77 in Utah, where primary production occurred, until Boeing began recertification of the AGM-69 production line in mid-1976 (see separate SRAM-B development entry).

Missile Mortality & Shelf Life. The solid-propellant motor of the AGM-69 was very sensitive to any cracks which might develop, as these severely altered the design

burn time and affected the performance of the missile. The shelf life of the early propellant, produced by Lockheed Propulsion, was originally estimated at only five years. Lockheed Propulsion decided to terminate its production of all propulsion systems, and the Air Force entered into a new contract with Thiokol Chemical Corporation to develop an improved rocket motor.

The new motor development was completed as scheduled. The FY78 funding of $12.2 million was expended for this development. The FY80 funding for the AGM-69 program of $8.2 million brought the total RDT&E monies to $511.3 million. Total funding for the improved rocket motor, through FY81, was documented at $46.7 million.

Congressional testimony on the FY82 defense budget indicated that the forecast shelf life of the SRAM-A motors (originally five years) had been extended to seven and one-half years. The new propellant, hydroxyl-terminated-polybutadiene (HTPB), is used in the SRAM-B, and greatly alleviates the storage problem by extending the shelf life to ten years.

SRAM-A Grounded. Yielding to political pressures from lawmakers, Defense Secretary Dick Cheney may have taken the first step toward grounding the SRAM-A permanently by ordering the Air Force to remove the missiles from ground-alert bombers until the outcome of a new safety study was known. Directors of three US nuclear weapons laboratories called for the stand down of the missiles in early May 1990, in response to reviews started by Department of Energy director James Watkins. The reviews were initiated to increase the overall safety of the nuclear-weapon inventory. The Secretary ordered the grounding after statements were made that an explosion could accidently be triggered by the explosives used to detonate the warhead, or by the missiles' propellant.

SRAM-B Development. Through mid-1977, the Air Force had been planning to reopen the production line with a run of 2,014 improved AGM-69Bs (SRAM-Bs). This quantity was later reduced to a request for 1,224 missiles for the B-1A bomber. The Air Force received $25.3 million in FY77 funding and awarded Boeing a contract calling for a recertification program to begin in January 1977 and extending through late 1980. Boeing awarded a contract to Thiokol for the development and production of the new and improved rocket motor and propellant. The AGM-69 program also envisioned development of new software and ground support equipment. Additionally, it was to be fitted with the new W-80 nuclear warhead. However, with the initial cancellation of the B-1A bomber, production of the new SRAM-B was canceled and the program terminated.

SRAM-L. Boeing had previously presented a modified AGM-69 (SRAM-L) as a candidate for the ASALM (Advanced Strategic Air-Launched Missile) concept. This missile would have employed advanced ECM-hardened guidance, improved avionics and an improved propulsion system. The Air Force was not receptive to this proposal as it was in direct conflict with the ASALM project. Boeing has since dropped the SRAM-L.

AGM-69 Follow-On. Our previous statement that the Air Force was developing a SRAM follow-on was proven correct in late January 1984 when the then-Aeronautical Systems Division of the Air Force Systems Command announced plans to develop a new air-to-surface missile to replace the AGM-69. Originally referred to as the Advanced Air-to-Surface Missile, and now as SRAM II (see separate AGM-131A SRAM II report).

SRAM/LEAP. The US Air Force was studying the possible combination of the SRAM-A and LEAP (Lightweight Exo-Atmospheric Projectile) to produce a ballistic missile interceptor. The missile would act as a booster for the kinetic energy LEAP kill vehicle. The SRAM-A would be modified by Boeing to fly towards space after being launched from an F-15 fighter. Successful flight demonstrations were carried out in 1993, and the US Air Force was planning to perform an actual intercept test in the fourth quarter of 1994. However, disagreement over what option or options to pursue eventually resulted in forgoing the SRAM/LEAP project, at least for the time being. (For more information, please see the Boost-Phase Interceptor (BPI) entry in the Additional Worldwide Missile Programs report, Tab H).

Funding

No specific funding for the AGM-69A has been evident for the last several fiscal years.

Recent Contracts

In April 1993, Boeing Defense and Space Group, Boeing Aerospace & Electronics, Seattle, Washington, received a $74.5 million Time and Materials contract for engineering services in support of the SRAM-A and the AGM-86 ALCM. Contract work is expected to be completed by April 1997. Contract Number F34601-93-D-0107. No other contracts have been issued in the last several years.

Timetable

	1965	Request For Procurement (RFP) issued
	1966	Contractor selection made
	1969	Prototype powered test flight made
Oct	1970	Production started
Aug	1975	Production terminated
	FY76-79	New motors development and qualification
Jan	1981	Motor qualification completed
		SRAM motor modifications started
	1984	SRAM-A mod completed (new motors, etc)
Jan	1984	Follow-on to SRAM announced
	1989-90	SRAM service continues
Jun	1990	SRAM-A grounded pending safety review
	1991	President announces partial stand down of US nuclear arsenal

Worldwide Distribution

User Country(s). The **United States** is the exclusive operator of the AGM-69 missile.

Forecast Rationale

Fabrication of the final AGM-69 SRAM-A missile has since been completed. A proposal to marry the SRAM-A with a kinetic energy kill vehicle such as LEAP, so that it may fulfill the ascent-phase interceptor requirement, has been forgone, at least for the time being.

Ten-Year Outlook

No forecast has been provided, since production of this system has long since ended. No additional purchases are anticipated.

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