



341st Missile Wing History

HISTORY OF THE 341 MISSILE WING

World War II Bomb Group



The 341st Missile Wing began as the 341st Bombardment Group (Medium) in the China-Burma-India (CBI) Theater of World War II. The Group was activated at Camp Malir in Karachi, India on 15 September 1942. The unit was one of the first bomber units in the CBI; being equipped with B-25 Mitchell medium bombers, which were shipped from the United States to Karachi. The aircraft were readied for flight operations by Air Technical Service Command at Karachi Air Depot and dispatched to Chakulia Airfield, now in Bangladesh in December. The group was formed with two bomb squadrons (11th, 22d) which had been attached to the 7th Bombardment Group since May 1942, and two newly activated squadrons (490th and 491st). The 11th Bomb Squadron was already in China, having flown combat missions with China Air Task Force since 1 July 1942. Planes and crews of the 22nd had been flying recon and tactical missions over north and central Burma, also since July.

The group entered combat early in 1943 and operated chiefly against enemy transportation in central Burma until 1944. It bombed bridges, locomotives, railroad yards, and other targets to delay movement of supplies to the Japanese troops fighting in northern Burma.



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The 341st Bomb Group usually functioned as if it were two groups and for a time as three. Soon after its activation in September 1942, 341st Bomb Group Headquarters and three of its squadrons, the 22nd, 490th and 491st, were stationed and operating in India under direction of the Tenth Air Force, while the 11th squadron was stationed and operating in China under direction of the "*China Air Task Force*", which was later reorganized and reinforced to become the Fourteenth Air Force.

Fourteen months later the Group Headquarters along with 22nd and the 491st squadrons joined the 11th squadron under the command of 69th Composite Wing, Fourteenth Air Force. 341st Group HQ was Kunming and the 22nd and 491st were at Yangkai, while the 11th continued to be based at Kweilin, attached to the 68th Composite Wing. However, the 490th "*Burma Bridge Busters*" remained in India, under the command of Major-General Howard Davidson's Tenth Air Force. Still later the 11th Squadron and a detachment of the 491st operated for a time under the East China Task Force.^{[1][2]}

From several airfields in China the group engaged primarily in attacking enemy concentrations and storage areas and in conducting sea sweeps and attacks against inland shipping. They also bombed and strafed such targets as trains, harbors, and railroads in French Indochina and the Canton-Hong Kong area of China. The Group received a Distinguished Unit Citation (DUC) for developing and using a special "glip" bombing technique against enemy bridges in French Indochina. The 341st also earned three World War II Armed Forces Expeditionary Streamers: India-Burma, China Defensive, and China Offensive.

It was inactivated on 2 November 1945, the day after Group and Squadron personnel debarked at Newark, New Jersey.

Reserve Bomb Group





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On 27 December 1946, the Group was redesignated as the 341st Bombardment Group, Light, and activated in the U.S. Air Force Reserve at Westover Field (later AFB), Massachusetts. The Group conducted routine training activity there with AT-6 (Fighter) AT-11 (Bomber) advanced training aircraft until it was inactivated on 27 June 1949.

Bomb Wing

The 341st achieved wing status when it was activated as the 341 Bombardment Wing, Medium in September 1955 at Abilene AFB (later Dyess AFB), Texas as a Strategic Air Command B-47E Stratojet unit. The wing's aircraft were designed to carry nuclear weapons and to penetrate Soviet air defenses with their high operational ceiling and near-supersonic speed. The 341st flew the B-47 in training and alert missions and participated in various SAC exercises and deployments to bases in Guam, Morocco and England. During this time, the wing also controlled a KC-97 Stratotanker squadron to provide air refueling for B-47 operations.

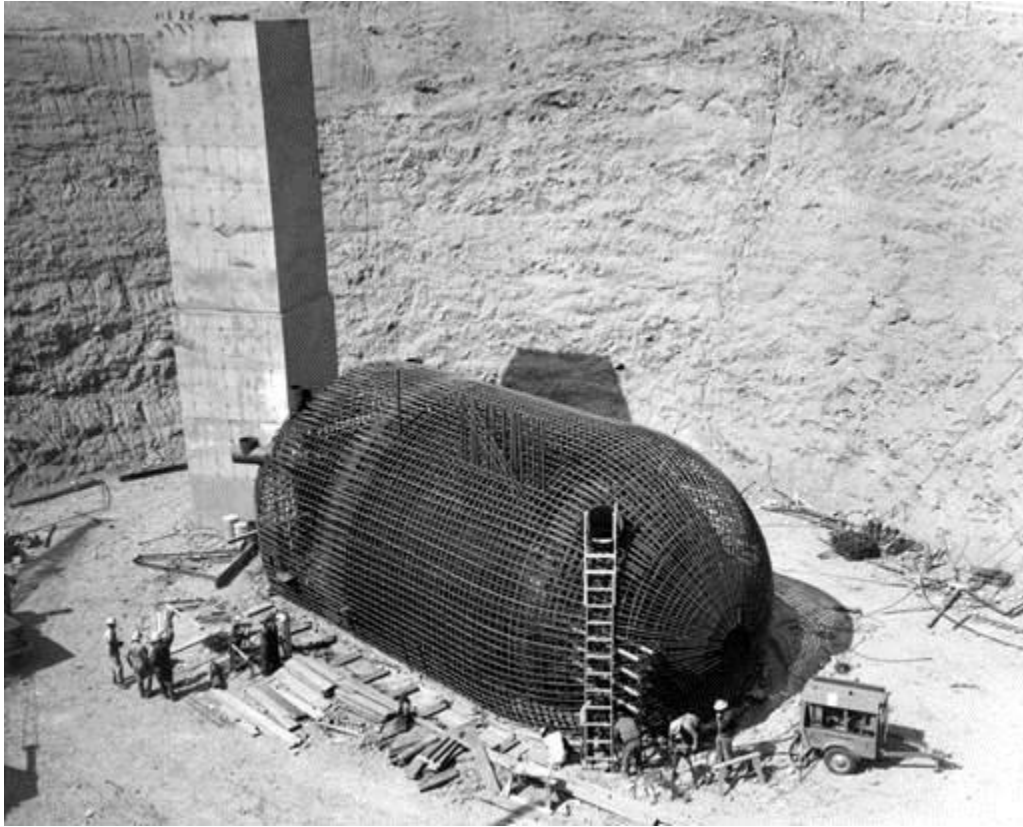


In 1958 after the loss of some aircraft in clandestine Cold War operations; it was believed that Soviet air defenses had caught up to the ability of the B-47 to successfully penetrate Soviet airspace. The Stratojet began to be phased out of the inventory and the 341 Bomb Wing began sending its aircraft to storage at Davis-Monthan AFB, Arizona in 1961. The wing was inactivated on 25 June of that year.



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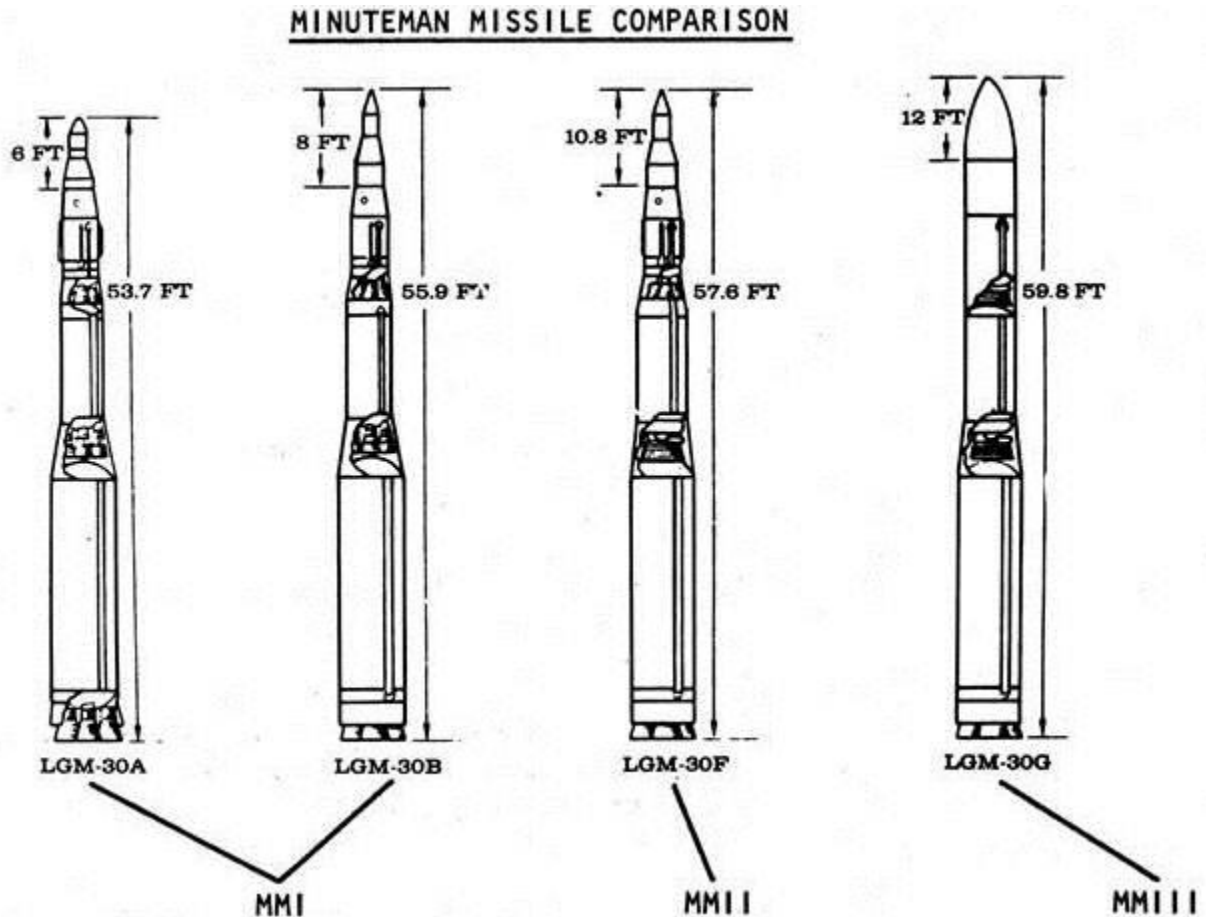
Strategic Missile Wing



The 341st Strategic Missile Wing was activated at Malmstrom AFB on 15 July 1961. Construction of the wing's first launch facility began on 16 March 1961 and the first model 'A' Minuteman ICBM operational silo (Alpha 02) was completed at Malmstrom AFB on 13 November 1961. The 10th Strategic Missile Squadron (SMS) was activated 2 August 1961 and Alpha-01, the first launch control facility, was completed in July 1962. The first LGM-30A Minuteman I ICBM arrived on base by rail 23 July 1962. Just four days after the missile's arrival, Launch Facility Alpha-09 gained the title of the first Minuteman missile site. The 12th SMS and 490th SMS activated in March and May 1962. Later that same year the missiles assigned to the nation's first Minuteman ICBM wing would play a major role in the Cuban Missile Crisis. On 27 October, the 10th SMS's launch facility Alpha-06 went on "strategic alert" after it was discovered the Soviet Union had placed nuclear missiles in Cuba. Over the next four days the wing placed five more missiles on alert, with the last missile from Alpha flight achieving alert status 10 November. The Soviets eventually removed their missiles from Cuba.



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Following the Cuban Missile Crisis, the 341st Missile Wing worked to bring its three Missile Squadrons to full operational capability. The 10th Strategic Missile Squadron (SMS) accepted its final missile on 28 February 1963. Two months later, the 12th SMS became 100 percent combat ready. On 3 July, the 490 SMS became fully operational, giving the 341st SMW responsibility for 150 silos. The last eight missiles emplaced in 490th launch facilities (LFs) were "B" models. The 490th is unique in that it is the only missile squadron to have deployed both "A" and "B" model missiles.



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In August 1964, the Air Force announced plans to build an additional 50 silos assigned to the 341st to house the more modern LGM-30F Minuteman II missiles. As construction of these new silos proceeded through 1966, the 564th Strategic Missile Squadron activated on 14 December 1965. Just over a year later America's 1,000th Minuteman missile would be in place and on alert at Malmstrom in April 1967. On 5 May 1967, the 564 SMS was declared fully operational. Malmstrom's missile field was now the largest in the United States, covering 23,500 square miles. While new Minuteman IIs deployed with the 564th, upgrading of the Minuteman I models had been ongoing with the wing starting a transition from "A" to "B" models in August 1964. By June 1969, all Minuteman Is of the 10, 12 and 490 SMSs, both "A" and "B" models, were replaced by Minuteman IIs, increasing the wing's capabilities to four missile squadrons equipped with a total of 200 Minuteman II missiles.

On 20 January 1975, teams from Ogden Air Logistics Center began replacing the Minuteman II missiles of the 564 SMS, Malmstrom AFB, Montana, with Minuteman IIIs.

In November of that year, the wing began an integrated improvement program that included a command data buffer and an improved launch control system. Throughout the 1970s and 1980s, the wing's missiles remained on alert and underwent extensive weapons systems upgrades. In 1985, the 341st SMW became the lead unit in the Minuteman Integrated Life Extension program (Rivet Mile).

On 1 September 1991 the 341st SMW was redesignated simply as the 341 Missile Wing, part of Strategic Air Command's Twentieth Air Force. As such it apparently became the only formation designated a 'Missile Wing' ever assigned to SAC. During Operations Desert Shield/Storm, the



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341st deployed security, civil engineering, services and support personnel to the Persian Gulf Area of Operations. On 28 September 1991, President Bush ordered all Minuteman IIs off alert status and the 341st Missile Wing began deactivation of those missiles. This order affected three-quarters of the 200 ICBMs assigned to the 341st SMW. In November 1991, the 12th Missile Squadron's Launch Facility J-03 became the first to have its missile removed in compliance with the order. It would be three and one half years, until the last Minuteman II in the Air Force inventory was removed from Kilo-11 on 10 August 1995. As Minuteman II missiles were removed, a new program called Rivet Add was launched, modifying the remaining Minuteman II launch facilities under the 10th and 12th Missile Squadrons to accommodate the newer Minuteman III. One hundred and twenty of the former Minuteman II silos received Minuteman III missiles from Grand Forks AFB, North Dakota, joining the 70 Minuteman III missiles already on alert status. This conversion was completed by 1998.

On 1 June 1992, the Air Force restructured its major commands, inactivating SAC and replacing it with Air Combat Command (ACC). The 341st Missile Wing was subsequently reassigned from SAC to Air Combat Command. Then in July of 1993, responsibility for the nation's ICBM force was transferred to Air Force Space Command. On 1 Oct 1997, the wing (along with the other two ICBM wings) was redesignated as the 341 Space Wing.

In 1995, the Rapid Execution and Combat Targeting, or REACT, signaled the first complete overhaul of the Minuteman III's command and control systems. In addition to REACT, In March 1995, the Base Realignment and Closure (BRAC) Commission selected the 321st Strategic Missile Wing at Grand Forks AFB, North Dakota for deactivation. The 321st Missile Group transferred the last of 120 of its Minuteman III missiles to the 341st Missile Wing, 12th Missile Squadron, on 3 June 1998. This brought the wing strength to 200 Minuteman IIIs on alert status--the first time since 1991 that it had a full complement of a single weapon system.

As a result of the 2005 Quadrennial Defense Review, the 341st Missile Wing inactivated the Minuteman III WS-133B missile system. Members of the 341st Missile Maintenance Squadron extracted the final weapon system component from the 564th Missile Squadron at launch facility Tango 41 on 28 July 2008 and the 564th Missile Squadron inactivated less than a month later on 15 August 2008.

On 1 July of 2008, the 341st was again redesignated to its current (and former) name as the 341 Missile Wing.

On 1 December 2009 the Wing was reassigned to the new Air Force Global Strike Command where it remains on duty 24 hours a day, 7 days a week, every day of the year.

Throughout recent years, the wing's Minuteman III Missiles have undergone numerous improvements and upgrades. An extensive life extension program was directed to keep the missiles safe, secure, and reliable well into the 21st Century. These major programs included: replacement of the aging guidance system, remanufacture of the solid propellant rocket motors, replacement of standby power systems, repair of launch facilities, and installation of updated, survivable communications equipment.



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To further comply with New START treaty requirements the Air Force ordered that all Minuteman III missiles undergo reconfiguration to accommodate a single reentry vehicle. On 16 June 2014, missile maintenance technicians (MMT) removed the final multiple independently targetable reentry vehicle (MIRV) from the Malmstrom missile field. The program began as a result of compliance requirements and began for the 341 MW in early 2012. The reconfiguration of the ICBM at LF O-10 to a single reentry vehicle (SRV) came as the final MIRVed ICBM in the Air Force deployed inventory. The removal ended over 40 years of deployed weapons with multiple reentry vehicles since the 741st Strategic Missile Squadron emplaced the first Minuteman III in LF H-02 at Minot AFB, North Dakota on 17 April 1970.

On 5 August 2014, the 341 MW completed Phase I of the elimination program of the fifty LFs and five MAFs formerly assigned to the inactivated 564 MS. The wing reached the milestone as contractors finished demolition of LF Tango 49 near Conrad, Montana. Phase II of the process began on 21 July with workers pouring concrete caps over the first 40 launchers completed in the 564 MS ICBM area. The 341st Missile Wing originally accepted Tango 49 as its last operational missile site in June 1965.



Demolition Tango 49

While serving in its vital role as a strategic nuclear deterrent force, the 341st SMW won numerous honors. The unit won its first Blanchard Trophy in SAC's annual Olympic Arena missile competition in 1976, and again captured this most coveted prize in 1986, 1990, and 1991. The wing also received the Strategic Air Command Commander's Missile Wing of the Year Award for 1969. After Air Force Space Command (AFSPC) assumed control of Missile operations, the wing won the corresponding AFSPC competition and the Blanchard Trophy in 1995, 1998, 1999, 2002, 2006, and 2008. The total number of ten Blanchard Trophies won is more than any other Missile Wing in the USAF. The 341st also won the 2007 Moorman award as the best overall wing of any kind in AFSPC.

The Omaha trophy awarded by the SAC (later STRATCOM) Consultation Committee "to the outstanding wing in SAC" (in various categories which changed throughout the years) was won six times by the 341st (1993, 1999, 2003, 2007, 2008, and 2009). The wing also won the Lee R. Williams Trophy as SAC's (then, AFSPC's and AFGSC's) outstanding missile wing for 1963,



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1975, 1976, 1986, 1987, 1991, 2008, and 2011. Finally, the 341st has been awarded the Air Force Outstanding Unit Award on 19 occasions, the most recent on 31 Dec 2011.

BASES ASSIGNED

Camp Malir, Karachi, India, 15 Sep 1942

Chakulia, India, 30 Dec 1942

Kurmitola, India, Jun 1943

Kunming, China, c. 7 Jan 1944

Yangkai, China, 13 Dec 1944–c. Sep 1945

Camp Kilmer, NJ, 1–2 Nov 1945

Westover Field (later, AFB), MA, 27 Dec 1946–27 Jun 1949

Abilene (later, Dyess) AFB, TX, 1 Sep 1955–25 Jun 1961

Malmstrom AFB, MT, 15 Jul 1961–Present

WEAPONS SYSTEMS

B-25, 1942–1945

A-26, 1945

AT-6, 1947–1949

AT-11, 1947–1949

B-47 and KC-97, 1956–1961

Minuteman IA, 1962–1969

Minuteman II, 1967–1995

Minuteman III, 1975–Present



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UH-1, 1993--Present

WING COMMANDERS

COL ANTHONY J. PERNA	1-Sep-55
COL FRANK P. STURDIVANT	3-Dec-55
COL CALVIN E. PEELER	31-Oct-57
COL ANTHONY J. PERNA	1-Nov-57
COL JACK W. HAYES JR.	9-Jun-59
COL RALPH T. HOLLAND	3 FEB - 25 JUN 61
NOT MANNED	1 - 14 JUL 61
COL BURTON C. ANDRUS, JR.	15-Jul-61
BRIG GEN LAWRENCE S. LIGHTNER	20-Feb-63
COL REX DOWTIN	1-Jul-64
COL THOMAS F. DOYLE	3-Jun-66
COL JOHN W. CARROLL	5-Jul-66
COL EUGENE J. CRAHEN	13-Mar-68
BRIG GEN GERALD G. FALL, JR.	27-May-70
BRIG GEN KERMIT C. KAERICHER	7-Jun-72
COL RALPH D. SCOTT	7-Jun-73
COL WILLIAM R. BROOKSHER	18-Jun-75
COL GERALD E. McILMOYLE	23-Jul-76
COL ALLEN K. RACHEL	23-Mar-78
COL JAMES A. CROUCH	25-May-79
COL DENNIS M. HEITKAMP	5-Jun-81
COL JAMES B. KNIGHT	20-Jun-83
COL ROBERT W. PARKER	3-Aug-84
COL TEDDY E. RINEBARGER	13-Dec-85
COL RICHARD O. KEEN	10-Jul-87
COL EDWARD L. BURCHFIELD	20-Sep-88



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COL WILLIAM R. SMITH	27-Aug-90
BRIG GEN THOMAS H. NEARY	15-Jan-92
COL DONALD P. PETTIT	29-Jul-93
BRIG GEN ROBERT E. LARNED	14-Jul-94
BRIG GEN TIMOTHY J. McMAHON	19-Jul-95
BRIG GEN GLENN C. WALTMAN	20-Feb-97
COL J. GREGORY PAVLOVICH	18-Nov-98
COL THOMAS F. DEPPE	9-Jun-00
COL C. DONALD ALSTON	11-Jul-02
COL EVERETT H. THOMAS	7-Jul-04
COL GEOFFREY A. FRAZIER	5 Apr-06
COL SANDRA E. FINAN	7 Jul 06
COL MICHAEL E. FORTNEY	21 May 08
COL ANTHONY J. COTTON	26 May 10
COL HERALDO B. BRUAL	22 Aug 11
COL ROBERT W. STANLEY II	8 Feb 13
Col JOHN T. WILCOX II	27 Mar 14

Updated November 2014

341 MW MISSILE FIELD CHRONOLOGY

23 Dec 1959: The Air Force Ballistic Missile Committee approved the selection of Malmstrom AFB, Montana as the first Minuteman ICBM base.

16 Mar 1961: Construction began at Malmstrom AFB, Montana, on the first model "A" Minuteman I ICBM operational facilities.

1 Jul 1961: The 341st Strategic Missile Wing was activated at Malmstrom AFB, Montana.

2 Aug 1961: The Department of the Air Force redesignated the 10th Bombardment Squadron the 10th Strategic Missile Squadron (ICBM Minuteman) and assigned it to Malmstrom AFB, Montana on 8 December 1961.



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- 1 Sep 1961: The 12th Bombardment Squadron was redesignated the 12th Strategic Missile Squadron (ICBM–Minuteman), and activated at Malmstrom AFB, Montana.
- 13 Nov 1961: The first model 'A' Minuteman ICBM operational silo was completed at Malmstrom AFB, Montana and turned over to the Air Force Site Activation Task Force.
- 15 Dec 1961: Construction of the first flight of ten Minuteman IA operational silos was completed and accepted at Malmstrom AFB, Montana.
- 18 Dec 1961: The 490th Bombardment Squadron, Medium was redesignated the 490th Strategic Missile Squadron (ICBM-Minuteman), and activated at Malmstrom AFB under Strategic Air Command.
- 23 Jul 1962: The first model "A" Minuteman I ICBM arrived at Malmstrom AFB, Montana. The first operational Minuteman was shipped by rail, in its transporter erector from Hill AFB, Utah.
- 27 Sep 1962: Construction work was completed on the last model 'A' Minuteman I ICBM operational facilities at Malmstrom AFB, Montana.
- 24 Oct 1962: Headquarters SAC accepted the first flight of ten model 'A' Minuteman I ICBMs at the 10th Strategic Missile Squadron, 341st Strategic Missile Wing at Malmstrom AFB, Montana.
- 27 Oct 1962: The first Model 'A' Minuteman I ICBMs were placed on alert at the 10th Strategic Missile Squadron, 341st Strategic Missile Wing, Malmstrom AFB, Montana.
- 11 Dec 1962: Headquarters SAC declared the first two flights of Minuteman IA ICBMs operational at Malmstrom AFB, Montana. It was the beginning of continuous alert for the Minuteman.
- 28 Feb 1963: After accepting its final Minuteman, the first Minuteman squadron, the 10th Strategic Missile Squadron, became fully operational at Malmstrom AFB, Montana. The first version of the Minuteman to be deployed was the Minuteman Ia, which achieved IOC (initial operating capability) in December 1962 (20 missiles).
- 3 Jul 1963: The third and last Minuteman I squadron at Malmstrom AFB, Montana, the 490th, achieved operational status.
- Aug 1964: The gradual replacement of Minuteman IA ICBMs with Minuteman IBs began at the 341 SMW, Malmstrom AFB, Montana.
- March 1965: Construction on the 564th SMS began. In August 1964, the Air Force announced the 341st Missile Wing would replace its



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Minuteman I missiles with Minuteman IIs. This replacement program included the creation of a fourth strategic missile squadron at Malmstrom, the 564th.

14 Dec 1965: The 564th Missile Squadron was activated at Malmstrom Air Force Base, Montana. Equipped with the then-new Minutemen II missile, the unit was declared fully operational on 3 May 1967.

26 Oct 1966: Construction was completed on Minuteman II ICBM operational launch facilities at the 564th Strategic Missile Squadron, Malmstrom AFB, Montana.

21 Apr 1967: The 1000th (and last) Minuteman silo was completed at Malmstrom AFB, Montana. HQ SAC declared the 564th Strategic Missile Squadron (Minuteman II) at Malmstrom AFB operational in May. Once the 564th SMS achieved operational status the deployment of the programmed force of 1,000 Minuteman ICBMs was completed.

*For a bit of trivia; the 341st Bombardment Wing also flew the 1,000th B-47 Stratojet in 1960.

22 Apr 1967: The 12th SMS, at Malmstrom AFB, Montana, was the first squadron to become fully operational with the new Minuteman II missiles under the weapon system upgrade. The 12th SMS was also the first squadron in the 341 SMW to undergo silo upgrade.

12 Feb 1969: The last Minuteman I 'A' model was removed from its launch facility near Malmstrom AFB, Montana. That last Minuteman IA from 490th Missile Squadron was removed as part of the Force Modernization Program to replace the Minuteman IA an Bs with 50 Minuteman II "F" models.

27 May 1969: The Force Modernization Program was completed at Malmstrom AFB when Kilo Flight was returned to the 341 SMW. During this final modification, the 490 SMS's 42 Minuteman I "A" models and 8 Minuteman I "B" models were replaced by 50 Minuteman II "F" models. The 490th had the distinction of possessing the last "A" model on strategic alert until it was removed from its LF as part of the Force Modernization Program. 500 Minuteman I's and 500 Minuteman II's on alert.

11 Jul 1975: The 550th Minuteman II became operational with the 341st Strategic Missile Wing at Malmstrom AFB, Montana. With completion of the nine-year force modernization program, the Minuteman force now consisted of 450 Minuteman II and 550 Minuteman III ICBMs.



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The 564th Strategic Missile Squadron brought their 50th Minuteman III on alert at launch facility Tango 49.

20 Jan 1975: Teams from Ogden Air Logistics Center began replacing the Minuteman II missiles of the 564 SMS, Malmstrom AFB, Montana, with Minuteman IIIs.

11 Jul 1975: Deployment of the Minuteman III was completed with the 550th weapon emplaced at Malmstrom AFB. The first operational missile was emplaced in its silo on 17 April 1970 at Minot AFB, with the first squadron becoming operational on 29 December 1970. As Minuteman III missile were deployed, the last Minuteman I missiles were removed from service.

1 April 1985: SAC began Rivet Mile (Minuteman Integrated Life Extension), a multi-faceted program to ensure the reliability and maintainability of the Minuteman force into the 21st century. Rivet MILE was designed to improve safety, maintainability and reliability of Minuteman facilities that were originally constructed in the 1960s. The Minuteman Integrated Life Extension Program began at the 341st Strategic Missile Wing, Malmstrom AFB, Montana.

27 Oct 1987: All-female Minuteman missile crews went on duty at Malmstrom AFB, Montana. Malmstrom, was the second SAC base to incorporate the gender specific crew concept.

5 Mar 1995: A Russian inspection team conducted the first START verification inspection in the United States at Malmstrom Air Force Base, Montana.

4 Oct 1995: The first Minuteman III ICBM moved from Grand Forks, AFB, North Dakota to Malmstrom AFB, Montana, under a planned three-year program to transfer Minuteman III missiles from Grand Forks AFB, North Dakota, to Malmstrom AFB, Montana.

31 Jul 1996: The Rapid Execution and Combat Targeting (REACT) equipment modification reached Final Operational Capability. It was installed in Launch Control Centers at F.E. Warren AFB, WY; Malmstrom AFB, MT; and Minot AFB, ND.

3 Jun 1998: The 321st Missile Group removed the last of its Minuteman III missiles at Grand Forks AFB, North Dakota, for transfer to the 341st Space Wing at Malmstrom AFB.

3 Aug 1999: The 341 SW, Malmstrom AFB, Montana, deployed the first NS-50 Missile Guidance Set (MGS) at Launch Facility India-09.



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Apr 2001: The first delivery of remanufactured rocket stages arrived under the Propulsion Replacement Program (PRP) at Malmstrom AFB. The 341st Space Wing installed the 'new' Minuteman III in launch facility Hotel-02 on 17 April 2001.

12 Mar 2004: The first Intercontinental Ballistic Missile Launch Control Center, at the 341 SW, Malmstrom AFB, Montana, was configured with the MMP (Minuteman MEECN Program). This was the newest communication system added to the ICBM fleet and boasted improved communication ability, equipment, and survivability.

May 2004: The Launch Facility Concrete Enhancement Program began at Malmstrom with the completion of its first site. The program installed additional concrete barrier protection for each LF reinforcing the topside structures at all three missile wings.

12 Jul 2007: The 341st Space Wing removed the first Minuteman III intercontinental ballistic missile from a launch facility near Brady, Montana, to begin missile deactivation activities at Malmstrom AFB.

Sep 2007: Contractors completed the final Malmstrom LF concrete enhancement at the 341 MW. Malmstrom was the first base to complete the project for its 150 LFs.

28 Jul 2008: Members of the 341st Missile Maintenance Squadron extracted the final weapon system component from the 564th Missile Squadron at launch facility Tango 41.

15 Aug 2008: The 564th Missile Squadron inactivated at Malmstrom AFB, Montana as the last ICBM squadron inactivated to that point.

23 Aug 2009: The 341st Maintenance Group completed deactivation of the last site belonging to the 564th Missile Squadron, inactivated in August the previous year.

1 Dec 2009: Under a major reorganization of nuclear forces under the United States Air Force, 20 AF along with 8 AF realigned under the newly formed Air Force Global Strike Command. The assignment of 20 AF under the new MAJCOM also moved the 341st Missile Wing and the other two Intercontinental Ballistic Missile (ICBM) wings under the administrative chain of command within AFGSC.

6 Apr 2011: An ICBM maintenance handling team from the 341 MMXS emplaced the final MM III solid propellant booster replaced under the Propulsion Replacement Program. After the completed unit lowered into



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Launch Facility J-09, the full force of 450 Minuteman III missiles included the original PRP booster and the subsequent upgrades.

1 Dec 2011: The 341st Munitions Squadron activated at Malmstrom AFB, assigned to the 341st Maintenance Group. Colonel David Bleisner, 341 MXG commander, presented the newly activated squadrons guidon to its first commander, Major Thomas Thorp.

13 Oct 2012: A large crowd gathered at Malmstrom AFB and Launch Facility A-06 to celebrate the 50th anniversary of Minuteman Operations. In October 1962, Strategic Air Command accepted the first flight of ten operational Minuteman IA ICBMs at Malmstrom AFB.

11 Feb 2014: Contractors began demolition of the first launcher from the inactivated 564th Missile Squadron (564 MS) at LF Romeo 23. In compliance with the New Strategic Arms Reduction Treaty, the first silo elimination began the process of permanently removing the fifty LFs and five MAFs that belonged to the 564 MS.

25 May 2014: A UH-1N crew from the 40th Helicopter Squadron flew two back-to-back rescue missions to mark their 400th and 401st saves.

5 August 2014: The 341 MW completed Phase I of the elimination program of the fifty LFs and five MAFs formerly assigned to the inactivated 564 MS. The wing reached the milestone as contractors finished demolition of LF Tango 49 near Conrad, Montana. The 341st Missile Wing originally accepted Tango 49 as its (and the Air Force's) last operational missile site in June 1965.



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NORTH AMERICAN B-25B MITCHELL (490th Bomb Squadron' B-25Cs, in formation over Burma)



DAYTON, Ohio-North American B-25B Mitchell at the National Museum of the United States Air Force (U.S. Air Force photo)

The B-25 medium bomber was one of America's most famous airplanes of World War II. It was the type used by Gen. Jimmy Doolittle for the [Tokyo Raid](#) on April 18, 1942.

Subsequently, B-25s saw duty in every combat area being flown by the Dutch, British, Chinese, Russians and Australians in addition to U.S. forces. Although the airplane was originally intended for level bombing from medium altitudes, it was used extensively in the Pacific Theater for bombing Japanese airfields and beach emplacements from treetop level, and for strafing and skip bombing enemy shipping.

Built by North American Aviation, the B-25 first flew on Aug. 19, 1940, and the U.S. Army Air Corps accepted the first five B-25s in February 1941. By the end of the war, North American Aviation had built a total of 9,816 B-25s at its California and Kansas plants.

During its long career, the B-25 experienced a number of modifications. The first major change occurred with the G model that included a 75mm cannon and two fixed .50-cal. guns in the nose. The H model was the first to add additional forward firing .50-cal. guns in cheek blisters. In the J version, the most numerous variant, the aircraft returned to its initial arrangement as a level bomber, reverting to a transparent nose that included one flexible and two fixed .50-cal. guns.

Driven by requirements in the Pacific, however, field-modified Js and finally production versions once again featured a solid nose that housed eight fixed .50-cal. guns for low-level attack. In this configuration, the J model could devastate vehicles and shipping with up to 14 forward firing heavy machine guns.

The airplane on display, actually a RB-25D (S/N 43-3374), was removed from storage at Tucson, Ariz., and rebuilt by North American Aviation at Inglewood, Calif., to the configuration of the lead B-25B flown by Lt. Col. Doolittle on the Tokyo Raid. It was then flown to the museum, arriving in April 1958.

TECHNICAL NOTES:

Armament: Six .50-cal. machine guns; 3,000 lbs. of bombs

Engine: Two [Wright R-2600s](#) of 1,700 hp each

Maximum speed: 328 mph

Cruising speed: 233 mph

Range: 2,500 miles (with auxiliary tanks)

Ceiling: 21,200 ft.

Span: 67 ft. 6 in.



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Length: 53 ft.

Height: 16 ft. 9 in.

Weight: 29,300 lbs. maximum **Cost:** \$109,670 (1943)



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BOEING B-47E (1000th B-47 Flown by 341 BW in 1960)



The B-47E was an improved version of the B model and more than 1,500 were produced by Boeing, Douglas and Lockheed. Improvements incorporated into the E model Stratojet included a more powerful version of the General Electric J47 turbojet and Rocket Assisted Take Off packs with 18 or 33 rockets that were jettisoned after use. Other features of the B-47E included 20mm cannons in the tail instead of the .50-cal. machine guns of the B model and upgraded avionics including the A-5 fire control system.

Like the B-47B production program, improvements to the general design of the E model were incorporated on the assembly line. The B-47E-II and later B-47E-IV programs incorporated stronger landing gear and improved avionics into the basic design. Eventually, all operational B-47Es were upgraded to Program IV standards.

The first flight of the B-47E was on Jan. 30, 1953, and deliveries to the 303rd Bomb Wing (Medium) began a month later. The E model remained in operational service until the mid-1960s when the last aircraft was retired; however, some aircraft continued flying at test-beds.

Type Number built/
converted Remarks

B-47E 1,591 Improved B-47B

TECHNICAL NOTES:

Armament: Two M-24 20mm cannons in tail turret plus bombs -- nuclear or 10,000 lbs. of conventional bombs (maximum bomb size was one 25,000 lb. bomb)

Engines: Six General Electric J47-GE-25 axial flow turbojet engines of 7,200 lbs. thrust each maximum power with water injection

Maximum speed: 610 mph

Cruising speed: 560 mph

Range: 3,500 miles

Service ceiling: 39,300 ft.



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Span: 116 ft. 0 in.

Length: 107 ft. 1 in.

Height: 28 ft. 0 in.

Weight: 226,000 lbs. (maximum takeoff weight)

Crew: Three (pilot, copilot/radio operator/gunner, bombardier/navigator)



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DOUGLAS B-18 BOLO (B-18 BOLO TAKE OFF BORINQUEN FIELD 1942)



The Douglas Aircraft Co. developed the B-18 to replace the Martin B-10 as the U.S. Army Air Corps' standard bomber. Based on the Douglas DC-2 commercial transport, the prototype B-18 competed with the Martin 146 (an improved B-10) and the four-engine Boeing 299, forerunner of the B-17, at the Air Corps bombing trials at Wright Field in 1935. Although many Air Corps officers judged the Boeing design superior, the Army General Staff preferred the less costly Bolo (along with 13 operational test YB-17s). The Air Corps later ordered 217 more as B-18As with the bombardier's position extended forward over the nose gunner's station.

Though equipped with inadequate defensive armament and underpowered, the Bolo remained the Air Corps' primary bomber into 1941, and the Japanese destroyed some B-18s during the surprise attacks on Dec. 7. By early 1942, improved bombers like the B-17 replaced the Bolo as first-line bombardment aircraft. Many B-18s were then used as transports, or modified as B-18Bs for anti-submarine duty.

Stationed at Wright Field from 1939 to 1942, the B-18A on display was acquired and restored by the museum in 1971. It is painted as a B-18A serving with the 38th Reconnaissance Squadron in 1939.

TECHNICAL NOTES:

Armament: Three .30-cal. guns (in nose, ventral and dorsal positions), plus 4,500 lbs. of bombs carried internally

Engines: Two Wright R-1820-53s of 1,000 hp each

Crew: Six

Maximum speed: 215 mph at 15,000 ft.

Cruising speed: 167 mph

Range: 2,100 miles

Ceiling: 23,900 ft.

Span: 89 ft. 6 in.

Length: 57 ft. 10 in.

Height: 15 ft. 2 in.

Weight: 27,000 lbs. loaded



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BEECH AT-11 KANSAN

The AT-11 was the standard U.S. Army Air Forces World War II bombing trainer; about 90 percent of the more than 45,000 USAAF bombardiers trained in AT-11s. Like the C-45 transport and the AT-7 navigation trainer, the Kansan was a military version of the Beechcraft Model 18 commercial transport. Modifications included a transparent nose, a bomb bay, internal bomb racks and provisions for flexible guns for gunnery training.

Student bombardiers normally dropped 100-pound sand-filled practice bombs. In 1943 the USAAF established a minimum proficiency standard of 22 percent hits on target for trainees. Typical combat training missions took continuous evasive action within a 10-mile radius of the target with straight and level final target approaches that lasted no longer than 60 seconds. After Sept. 30, 1943, the AT-11 usually carried a Norden Bombsight and a C-1 automatic pilot, which allowed the bombardier student to guide the aircraft during the bombing run.



Beech AT-11 in flight

The AT-11 on display is one of 1,582 ordered by the USAAF between 1941 and 1945, 36 of which were modified as AT-11A navigation trainers. It was donated to the museum by the Abrams Aerial Survey Corp., Lansing, Mich., in 1969, and is painted to represent a trainer in service during the autumn of 1943.

TECHNICAL NOTES:

Armament: Two .30-cal. machine guns when used as a gunnery trainer

Engine: Two [Pratt & Whitney R-985](#) of 450 hp each

Maximum speed: 215 mph

Cruising speed: 150 mph

Range: 745 miles

Service ceiling: 20,000 ft.

Span: 47 ft. 7 3/4 in.

Length: 34 ft. 1 7/8 in.

Height: 9 ft. 7 3/4 in.

Weight: 9,300 lbs. maximum



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BOEING LGM-30A MINUTEMAN IA



First Minuteman I Launch Cape Canaveral, Fla., February 1961. The first Minuteman became operational on 27 October 1962 at Malmstrom AFB. (U.S. Air Force photo)

The Minuteman missile concept pushed rocket technology to a new level and it vastly improved U.S. nuclear strategic deterrence. Minuteman was the first U.S. intercontinental ballistic missile (ICBM) to use solid fuel, permitting quick-response launches in case of attack. The first Minuteman missiles became operational in late 1962.

Minuteman IA missiles like the one on display were the first generation of a revolutionary new family of ICBMs. They used solid rather than liquid fuel, and so could be launched in less than a minute -- hence the "Minuteman" name, referring to colonial American farmers who could be ready to defend their homes at a moment's notice. In contrast to Minuteman, older missiles like [Atlas](#) and [Titan I](#) took up to half an hour to fuel and launch. They were also complex and costly, requiring close monitoring and constant maintenance, and their propellants could be dangerous. Moreover, they tended to be vulnerable to attack.

Minuteman's advantages combined speed, low maintenance, high reliability, high "survivability" from attack, and low cost. The U.S. Air Force had been studying solid fuels since the early 1950s, and using solid fuel was important because it meant that the missile could be stored unattended for long periods. In addition, Minuteman was small enough to be housed in very strong unmanned underground silos able to survive nuclear attack.

In 1958, guided by the Air Force Ballistic Missile Division, industry began work on the new three-stage missile. Boeing was the overall contractor, and important parts of the missile came from the firms Autonetics (guidance); Aerojet, Hercules and Thiokol (rocket stages); and Avco (re-entry vehicles). The USAF planned to deploy up to 1,600 Minutemen -- later revised to 1,000 and then 950 -- making the system a very strong nuclear deterrent.

Minuteman Basing

After a series of successful test launches, the USAF began rapidly deploying Minuteman missiles. Minuteman IA missiles like the one on display were based at Malmstrom Air Force Base, Mont., in the



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341st Strategic Missile Wing, the first of six Minuteman wings. Malmstrom's first flight of 10 missiles went on operational alert on Oct. 22, 1962. Later models would be based at Malmstrom and five other bases in western states including South Dakota, North Dakota, Wyoming and Missouri. These states had thousands of square miles of open space surrounding the bases, making them ideal for Minuteman operations.

The missile on display came to the museum in 1971. Later Minuteman models included Minuteman IB (LGM-30B), II (LGM-30F) and III (LGM-30G). Over the years, the Minuteman series received various upgrades with improved motors, guidance, re-entry vehicles, and warheads. Minuteman III, also on display in this gallery, is still in service and is projected to be a main nuclear deterrent well into the 21st century.

TECHNICAL NOTES:

Height: 53.8 ft.

Weight: 65,000 lbs.

Range: Designed for 5,000+ miles

Speed: 15,000 mph

Propulsion: Stage 1--Thiokol, 210,000 lbs. thrust; Stage 2--Aerojet, 60,000 lbs. thrust; Stage 3--Hercules, 35,000 lbs. thrust

Guidance: All inertial, Autonetics Division of Rockwell

Warhead: Nuclear, re-entry vehicle by Avco



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Minuteman II



First Minuteman II at Cape Canaveral

Even as the Minuteman I program raced forward, the Air Force began developing the new Minuteman II. The new missile was a significant improvement over its predecessor. A new second-stage motor with a single nozzle and a secondary liquid injection for thrust vector control increased the missile's range from 6,300 to 7,000 miles. The new motors also enabled the Minuteman to carry the larger W-56 warhead with a yield of 1.2 megatons. An improved guidance system made the missile more accurate, and it could store a larger number of preprogrammed targets within its internal memory. Moreover, Minuteman II also carried penetration aids to camouflage the reentry vehicle during reentry.

The Air Force awarded Boeing the Minuteman II contract in March 1962 and the Seattle-based contractor conducted the first test flight in September 1964.

The Minuteman II was a tremendous improvement over Minuteman I. Although the new ICBM was only 2 feet taller and 8,000 pounds heavier than its predecessor, a new second-stage engine extended the missile's range from 6,300 to 7,000 miles and increased the payload to enable it to carry a 1.2-megaton warhead. Minuteman II was also equipped with a new Autonetics guidance system that narrowed the circular error probable (CEP) to 1.5 miles at maximum range. The Air Force calculated that Minuteman II's greater range, larger warhead, and improved accuracy gave it eight times the "kill" capability of Minuteman I.

In May 1966 SAC placed its first Minuteman II squadron on operational alert, and by April 1967 accepted its 200th Minuteman II. At that point the Minuteman force stood at 1,000 missiles; 800 Minuteman Is and 200 Minuteman IIs. Continuing its missile modernization effort, throughout the late 1960s the Air Force replaced many of its Minuteman Is with Minuteman IIs, and by May 1969 it had 500 Minuteman Is and an equal number of Minuteman IIs on operational alert.

Minuteman II Major Features

Performance improvements realized in Minuteman II include greater range, increased throw weight, improved accuracy and reliability, multiple target selection, and greater penetration



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capability. The major new features provided by Minuteman II were:

- An improved first-stage motor to increase reliability.
- A new-technology, single, fixed nozzle with liquid injection thrust vector control (TVC) on a larger secondstage motor to increase missile range. Additional motor improvements to increase reliability.
- An improved guidance system, incorporating semiconductor integrated circuits and miniaturized discrete electronic parts. Minuteman II was the first program to make a major commitment to these new devices. Their use made possible multiple target selection, greater accuracy and reliability, a reduction in the overall size and weight of the guidance system, and an increase in the survivability of the guidance system in a nuclear environment.
- A penetration aids system to camouflage the warhead during its reentry into an enemy environment.
- A larger warhead in the reentry vehicle (RV) to increase kill probability.



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BOEING LGM-30G MINUTEMAN III (Minuteman III Display Malmstrom AFB Museum)

The Minuteman III Intercontinental Ballistic Missile (ICBM) is the United States' only current operational land-based strategic nuclear missile. It is one leg of the nuclear deterrent "triad" that also includes USAF bombers and U.S. Navy submarine-launched missiles. U.S. nuclear forces are on alert at all times, ensuring a swift response in the event of a nuclear attack.

Serving Since 1970

Minuteman III became operational in 1970, and is the most modern missile in the Minuteman family. The Minuteman series was the first in the U.S. ICBM arsenal to use solid fuel. This important feature allows the missile to be stored for long periods in its silo, requiring much less maintenance and fewer technicians than older liquid-fueled missiles like Titan and Atlas. It can also be launched almost instantly. Minuteman III was the world's first missile to carry more than one warhead, using a "Multiple Independently-targetable Re-entry Vehicle" (MIRV) system. Though Minuteman III can carry three warheads, each missile has been limited to one by international treaty since 2005.

The Minuteman system was designed in the 1950s. Minuteman I, the first of the family, became operational in 1962 during the [Cuban Missile Crisis](#). Later, the retirement of the U.S. Air Force's Minuteman II missiles in 1995 and Peacekeeper missiles in 2005 left Minuteman III as the only American land-based ICBM. Today, Minuteman III missiles are located in widely-separated, hardened underground silos at three bases -- F.E. Warren AFB, Wyo., Malmstrom AFB, Mont., and Minot AFB, N.D.

Over the years, new technology has increased Minuteman III's reliability, accuracy and ability to survive nuclear attack. Advanced guidance systems, new solid rocket fuel, and improved electrical power are the most recent updates. The Air Force has also upgraded launch facilities and installed better communications gear with new command and control consoles. These improvements enable Minuteman



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III to serve well into the 21st century.

The Missile Crew

Two officers make up a Minuteman III launch crew. These highly-trained USAF teams are on alert at all times in deeply-buried underground launch facilities. Each team controls 10 widely-dispersed missiles. Missile squadrons consist of 50 missiles. Minuteman III crews can launch missiles only on authenticated orders from the President of the United States using complex, secure codes and procedures. A modern system of high- and low-frequency satellite, radio and land lines ensures secure, reliable communication for sending and receiving orders. Airborne command and control aircraft can also launch the missiles remotely if ground command is destroyed.

Launching a Minuteman III takes about 60 seconds. When a launch crew receives a valid "emergency action message," they take specific and well-practiced steps to make sure their actions are correct. If necessary, top-secret codes are sent to the missiles to enable them to launch at predetermined targets. Next, the crewmen simultaneously turn keys that give the missile a final readiness check and open huge silo doors at ground level. Finally, electric cables automatically disconnect to free the missile, the first stage ignites, and Minuteman III is on its way.

Reaching the Target

Minuteman III is a three-stage missile that can reach targets more than 6,000 miles away. As each stage burns out, it drops away and the next stage ignites. In flight, a sophisticated guidance system keeps Minuteman III on course by slightly adjusting rocket nozzles. At the proper time -- about three minutes after launch -- small rockets slow the third stage. The post-boost vehicle (or "warhead bus") carrying the nuclear payload then maneuvers to a pre-determined release point. With precise timing, it releases the warhead or "re-entry vehicle." Helped by penetration aids that disguise it on enemy radar, the warhead follows a ballistic trajectory to its target.

TECHNICAL NOTES:

Propulsion: Three-stage solid fuel rocket motors; post-boost stage for positioning re-entry vehicle is liquid-fueled

Weight: 76,000 lbs.

Range: 6,000+ miles

Maximum speed: Approx. 15,000 mph

Armament: One, two or three MK-12 or MK-12A warheads in the megaton range



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Bell UH-1 Iroquois Huey Helicopter (40 HS 400th Save)



The UH-1 evolved from a 1955 U.S. Army competition for a new utility helicopter. The Army employed it in various roles, including that of an armed escort or attack gunship in Vietnam. The initial Army designation was HU-1, which led to the common unofficial nickname of "Huey." All U.S. armed services adopted the model as did several other countries, and it was redesignated in 1962 as the UH-1 under a triservice agreement. The USAF ordered the UH-1F Huey in the early 1960s for support duties at missile sites, and TH-1F variants for instrument and hoist training and medical evacuation.

The USAF later ordered more capable versions of the Huey. The HH-1H incorporated a longer fuselage and larger cargo area. The USAF ordered these in 1970 as local base rescue helicopters to replace the HH-43 Huskie. The first of the USAF's UH-1Ns, a twin-engine utility version capable of cruising on one engine, was obtained in 1970.

TECHNICAL NOTES:

Armament: Two 7.62mm M60 machine guns

Engine: General Electric T-58 of 1,070 shaft hp

Maximum speed: 140 mph

Cruising speed: 115 mph

Range: 330 miles

Ceiling: 24,830 ft.

Rotor diameter: 48 ft.

Overall length: 57'1" ft.

Height: 14 ft. 11 in.

Weight: 9,000 maximum