Conclusion

The Army's roles and missions in space and missile defense stem from its oldest mission: protecting American territory from foreign attack and invasion. While the means of performing the mission have changed from building and manning coastal defense forts in the 18th and 19th centuries, to building and manning antiaircraft and air defenses in the 20th and 21st centuries, the intent has remained unchanged. At the end of World War II, two new weapons, the atomic bomb and the guided missile, complicated this mission, presenting the Army with unprecedented technological challenges. These two new factors in the national defense equation led the Army to continue its investigations and experiments with missiles and space-based communications and sensor technologies to field new weapons systems.

By the mid-1950s, under the threat of Soviet nuclear attack, the Army and one of its major missile contractors concluded that ballistic missile defense was both technologically feasible and affordable. The Army's early efforts in developing guided missile technology resulted in the first successful American missile flights, earth-orbiting satellites and the first experimental communications, meteorological and reconnaissance satellites. The synergy of the Army's space and missile defense efforts was broken when the Eisenhower Administration established NASA, civilianizing space exploration and reallocating military space missions among the armed services. While retaining proponency for ballistic missile defense, the Army was stripped of its space assets and responsibilities.

Forced out of space, the Army continued to make technological progress in pursuit of ballistic missile defense, culminating in the deployment of the only BMD system in the western world. As it developed the various missile defense systems (NIKE-ZEUS, NIKE-X, SAFEGUARD, SENTRY, *et al*) the Army missile defense organizations evolved into entities that combined research and development, testing, evaluation, and acquisition functions in one place. Slowly and with great difficulty, Army missile defense organizations became functions-based organizations. While this was not the result of an overt design, it did promote collaboration and worked to eliminate duplication of effort and pointless competition for scarce resources.

As missile defense technology became more sophisticated with the advances in computers and sensors, the Army began to experiment with lasers, and particle beams as well as kinetic methods to destroy enemy satellites and guided missile warheads. President Reagan's 1982 National Space Policy, his 1983 Strategic Defense Initiative as well as the invasion of Grenada refocused the Army's attention on space and missile defense. When this renewed attention was combined with internal debates about doctrine and the publication of AirLand Battle Doctrine in 1982, the Army readied itself to reclaim its role in space and to link it to its missile defense mission.

It was not until that moment that the Army determined the ground commander's needs required it to return to space. As AirLand Battle doctrine developed, the entire conception of the battlefield expanded. The Army now concerned itself with the Deep Battle (with a need to see

and strike deeply) and with the Rear Battle (with its own needs for expanded command and control). Space-related activities offered the ground commander unique platforms for observation, positioning and communications over a greatly expanded area of concern; that of the operational level battlefield. Missile defense offered a new method of force protection against a new and growing threat.

This doctrine meshed with the Army's long-standing interest in manned space flight. Initially excluded from the military astronaut program by the requirements for experience as a jet pilot and for advanced degrees in the natural sciences, medicine or engineering, or equivalent experience, the Army's first astronaut candidate was chosen in 1978 as a Space Shuttle astronaut. As part of the Military Man in Space program the Army would perform experiments that enhanced its war fighting capabilities. As participation increased, the Army Astronaut Detachment was formed at the Johnson Space Center.

In a deliberate way, the Army began to centralize its space programs and assets and over eight years brought them together in a unified command. In 1992, the Army Strategic Defense Command became the Army Space and Strategic Defense Command; one of its missions was to provide an Army focal point for space and missile defense matters. With the formation of this command, the Army entered the concluding phase of centralizing research and development of space and missile defense assets to benefit the warfighting soldier in the field. In 1993, the Army Space Technology Research Office was transferred from the Communications-Electronics Command to the Space and Strategic Defense Command. This office managed near and possible far-term space research and development programs and provided a developer focus within the Army and with outside agencies and was renamed the Space Applications Technology Program. In 1994, the Army Space Program Office was transferred to the Space and Strategic Defense Command. This office, formed in 1973, has responsibility for the Army's share of the Tactical Exploitation of National Capabilities Program. Thus by 1994, the Army had place its space and missile defense assets in one command.

As the Army Space and Strategic Defense Command moved to centralize support of space and missile defense programs, the reorganizations in the wake of the Cold War and the Gulf War threatened to break apart the command and distribute its functions throughout the Army. In a 1996 memorandum, the Vice Chief of Staff of the Army General Ronald H. Griffith overruled the finding of the "HQDA Redesign Functional Area Assessment." The memo noted "that although the Redesign Functional Area Assessment recommended realignment…with the Training and Doctrine Command (TRADOC)….a number of factors have caused us to reconsider this recommendation."[1]

General Griffith noted that the command carried "out responsibilities in scope and magnitude unlike other Army organizations." It had "a significant operational mission in support of the Warfighting CINCs" because it was the Army component of the U.S. Space Command. In its role as "an executing agent for the Ballistic Missile Defense Organization" it has "a complex array of funding and tasking responsibilities," and "is directly responsible to the Army Acquisition Executive" regarding acquisition matters. In the course of "accomplishing these

missions, the command works with numerous non-departmental agencies, the OSD staff and other military services."

It was clear to the Vice Chief of Staff that "these functions do not integrate well into any of the current major commands." Additionally, he acknowledged "a growing need exists for a 'proponent-like' Army facilitator to integrate space and missile defense solutions within the Army and act as the Army advocate in Joint Warfighting forums." Therefore, he noted that "TRADOC, the architect of the future Army" and Space and Strategic Defense Command, "the technical, experimental and operational expert of space and missile defense" will join together to "leverage each other's capabilities to guide the development of Army/Joint space and missile defense capabilities to best meet our Army and Force XXI goals." Following the guidance in the memo, the command and TRADOC developed a memorandum of agreement documenting the "relationship between the two commands" and addressed "the requirements linkage between the two activities." This led directly to the memorandum of agreement that established the Space and Missile Defense Battle Lab—the only battle lab outside TRADOC.

The Army's efforts in space and missile defense ran on parallel paths for many years. As they became intertwined, the Army always viewed space as a medium of operations; operations can occur to, from and in space. In the process of forming its newest major command, the Army moved to centralize its space and missile defense activities. Over the years, as the Space and Missile Defense Command evolved, it retained its emphasis on a functional organization structure that watched over the development of various systems from their earliest stages to fielding. Its functional structure may serve as a model in the Department of Defense, for changes in the way the armed forces are organized are rapidly taking shape. The drive to reform and rationalize the armed forces is being driven by the national emergency engendered by the terrorist attacks against the World Trade Center and the Pentagon on 11 September 2001.

In 2002, U.S. Space Command and U.S. Strategic Command were merged to form a new U.S. Strategic Command to eliminate redundancies in the command process and streamline the decision making process. According to Secretary of Defense Donald Rumsfeld, the change was made because the missions of both commands had converged to the extent that their merger became practical. The new merged command would be responsible for early warning of and defense against both missile attack and long range conventional attack. In addition, the new command controls American nuclear forces, military space operations, computer network operations, strategic warning and global planning. The USASMDC is the Army Service Component Command of the new unified command. In 2003, the president signed Unified Command Plan Change 2, which assigned global strike, information operations, space C^4ISR and integrated missile defense responsibilities to the U.S. Strategic Command.

Since its inception, USASMDC and its predecessor organizations have dealt with space and missile defense technology. Its place in the U.S. Strategic Command presents it and the Army with a new set of technological and organizational challenges. Throughout its history, the USASMDC evolved to meet the needs of our nation, warfighters and allies. The process continues today and as Lieutenant General Joseph Cosumano, USASMDC Commanding General, recently observed, "There is a lot of change out there on the horizon."[2]

End Notes

[1]Memorandum for Space and Strategic Defense Command, Subject: Realignment of the Space and Strategic Defense Command, 12 July 1996. All direct quotations from this document.
[2]General Cosumano speaking at a U.S. Army Space and Missile Defense Association luncheon in Huntsville on 24 January 2003, quoted in Debra Valine, "Space and Missile Defense Remains a Command," *The Eagle* February 2003: 1.

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Appendix A
Commanders and Directors

U.S. Army Space and Missile Defense Command (USASMDC)

Commanders

Lieutenant General Joseph M. Cosumano, Jr.: April 2001 – present

Brigadier General John M. Urias: March 2001 - April 2001, Commander

Lieutenant General John Costello: October 1998 - March 2001

Colonel (P) Steven W. Flohr: August - October 1998, Interim Commander

Lieutenant General Edward G. Anderson III: October 1997 - August 1998
Commander, USASSDC, October 1996 - September 1997

Deputy Commanders for Research, Development and Acquisition (Huntsville)

Major General John M. Urias: February 2001 - present
Effective December 2001, Brigadier General Urias was dual-hatted as the PEO for the Air and Missile Defense. Promoted to Major General on 1 July 2002.

Deputy Commanders Operations/ARSPACE (Colorado Springs)

Brigadier General Richard V. Geraci: August 2000 - present
Promoted to Brigadier General on 1 October 2001. Effective 16 October 2001, the Deputy Commanding General for Space is dual hatted as the Chief of Space Information Operations Element (Reach-back Element) (SIOE(RE)) of the U.S. Space Command. Following the 2002 merger of U.S. Space Command, U.S. Strategic Command, the SMDC DCG/Space works for the U.S. Strategic Command's Director of Space Operations.

Deputy Commanders

Brigadier General Steven W. Flohr: October 1997 - November 1999
Deputy Commander, USASSDC, September 1997. Promoted to Brigadier General on 1 November 1998.

Space and Missile Defense Technical Center

(formerly the Missile Defense and Space Technology Center)

Directors

Mr. Jess F. Granone: May 1999 - present

Mr. William C. Reeves, Jr.: April - May 1999, Acting Director

Mr. Jess F. Granone: January 1999 - March 1999, Acting Director

Dr. James R. Fisher: February 1995 - December 1998

Space and Missile Defense Battle Lab

(formerly the Missile Defense Battle Integration Center)

Directors

Mr. Larry H. Burger: February 1997 - present

Mr. Larry H. Burger: November 1996 - February 1997, Acting Director - BIC

Dr. Robin Buckelew: January 1995 - November 1996

Test and Evaluation Center

(formerly the Space and Missile Defense Acquisition Center)

Directors

Brigadier General John M. Urias: February 2001 - Present

Dr. Linda Gentle: November 1999 - February 2001, Acting Director

Brigadier General Steven W. Flohr: November 1998 - November 1999

National Missile Defense TRADOC Systems Manager

Directors

Colonel Jeffrey C. Horne: June 2000 - present

Colonel Ronald E. Ouellette: November 1999 - June 2000

Colonel Robert K. Billings: August 1999 - November 1999

Office of Technical Integration and Interoperability (OTII)

Directors

Mr. William C. Reeves, Jr.: July 2000 - present

Force Development and Integration Center (FDIC)

Directors

Mr. Terry Nelson: 17 March 2003 - Present - Acting Director

Colonel Glen C. Collins, Jr.: August 2000 - Deployed 12 March 2003

Colonel Robert Gregg: August 1999 - August 2000

Colonel Robert K. Billings: 1997 - August 1999

U.S. Army Space Command

Commanders

Brigadier General Richard V. Geraci: August 2000 - present
Promoted to Brigadier General 1 October 2001.

Colonel John V. Klemencic: May 2000 - August 2000

Colonel Michael W. McKeeman: July 1998 - May 2000

Colonel Steven A. Bowman: May 1998 - July 1998, Interim Commander

Colonel Otis B. Ferguson, Jr.: September 1996 - May 1998

Colonel William Hoyman: January 1996 - September 1996

Colonel E. Paul Semmens: July 1994 - December 1995

Colonel Terry L. Burns: March 1994 - June 1994

Brigadier General Gregory A. Rountree: July 1993 - February 1994
Promoted to Brigadier General on 18 February 1994.

Colonel Terry L. Burns: May 1993 - July 1993, Acting Deputy to Commander

Colonel Michael W. Keaveney: April 1991 - May 1993

Colonel Ronan I. Ellis: May 1989 - March 1991

Colonel Joe B. Thurston, Jr.: April 1988 - May 1989, Commander
(Army Space Agency, reorganized as the Army Space Command on 7 April 1988.)

U.S. Army Space Forces

Commanders

Colonel David W. Shaffer: August 2002 - present

Colonel William J. Partridge: March 2001 - August 2002

Colonel John V. Klemencic: August 2000 - March 2001

193rd Space Battalion - Colorado Army National Guard

(Activated 28 September 2001)

Lieutenant Colonel Michael Yowell: September 2001 - present

1st Space Battalion

(Activated 15 December 1999)

Lieutenant Colonel Scott F. Netherland: November 2001 - present

Lieutenant Colonel Timothy R. Coffin: December 1999 - November 2001

1st Satellite Control (SatCon) Battalion

(Activated 1 November 1995)

Lieutenant Colonel Mearen Bethea: June 2002 - present

Lieutenant Colonel Winston L. Davis: June 2000 - 28 June 2002

Major Patrick H. Rayermann: December 1995 - May 1996

Lieutenant Colonel Lynn E. Weber: November 1995 - December 1995

U.S. Army Kwajalein Atoll

Commanders

Colonel Jerry Brown: July 2002 - present

Colonel Curtis L. Wrenn, Jr.: July 2000 - July 2002

Colonel Gary K. McMillen: July 1998 - July 2000

Colonel Scott B. Cottrell: July 1996 - July 1998

Colonel David E. Spaulding: August 1994 - July 1996

Colonel Crosby E. Hazel: August 1992 - August 1994

Colonel John J. MacNeill: 1990-1992

Colonel Philip R. Harris: 1988 - 1990

Colonel Richard G. Chapman, Jr: August 1986 - August 1988

Colonel James R. Allred: July 1986 - August 1986

Colonel William A. Spin: July 1984 - July 1986

Colonel John W. Banks, Jr.: June 1982 - July 1984

Colonel Peter F. Witteried: 1980 - 1982

Colonel John H. Reeve: 1978 - 1980

Colonel Ernest A. Van Netta: 1976 - 1978

Colonel Robert L. Russell: 1973 - 1976

Colonel Jesse L. Fishback: 1971-1973

Colonel Donald B. Millar: 196 - 1971

Colonel Frank C. Healy: 1967 - 1968

Colonel Melvin D. Clark: 1965 - 1967

Colonel Glen H. Crane: 1964 - 1965
(Assumed control of Kwajalein Pacific Missile Range Facility from the Navy in July 1964.)

Captain H.D. Allen, (USN): 1964 - 1964

Commander H.R. Gordinier (USN): 1964 - 1964

Captain P. Holmberg (USN): 1961 - 1963

Captain G. Smith (USN): 1959 - 1961

High Energy Laser Systems Test Facility

Directors

Thomas Hodge: August 2002 – present

Lieutenant Colonel Lyn Tronti: July 2000 - August 2002

Colonel Ronald J. Nelson: July 1998 - May 2000

Colonel Larry D. Anderson: June 1995 - July 1998

Colonel George P. Lasche: December 1993 - May 1995

Major Vernon C. Bice: November 1993 - December 1993, Acting Director

Colonel Henry W. Meyer, Jr.: November 1992 - October 1993

Colonel Richard L. Knox: November 1991 - October 1992

Colonel James E. Green: October 1990 - July 1991 Acting Director

Army Space Program Office

Directors

Colonel Steven Fox: July 2001 - present

Colonel Darrell Lance: June 1999 - July 2001

Colonel Melvin L. Heritage: December 1997 - June 1999

Colonel Arthur R. Marshall, Jr.: June 1994 - December 1997

Colonel Sherwood C. "Woody" Spring: July 1989 - June 1994

Colonel Charles J. Sollohub: May 1984 - July 1989

Colonel Robert A. Schow, Jr.: June 1981 - May 1984

Colonel Hugh H. Trumbull: August 1978 - June 1981

Colonel Ronald Lemanski: November 1975 - August 1978

Colonel Robert A. Ready: July 1973 - November 1975

Garrison Commander Fort Greely, Alaska

Commanders

Major Marie Grimmer: October 2002 - present
(The USASMDC assumed responsibility for the Fort Greely Garrison on 1 October 2002)

U.S. Army Space and Strategic Defense Command (USASSDC)

Commanders

Lieutenant General Edward G. Anderson III: October 1996 - October 1997

Lieutenant General Jay M. Garner: September 1994 - October 1996

Lieutenant General Donald M. Lionetti: August 1992 - September 1994

Deputy Commanders

Colonel (P) Steven W. Flohr: September 1997 - October 1997

Brigadier General Robert E. Armbruster: November 1996 - April 1997
Promoted to Brigadier General on 12 November 1996

Brigadier General Willie B. Nance, Jr.: November 1995 - October 1996
Promoted to Brigadier General on 3 April 1996. Assumed duties as PEO for Tactical Missiles on 15 July 1996. Under an agreement with General Hite, Brigadier General Nance continued to serve as the DCG until October.

Major General Jan A. Van Prooyen: August 1992 - June 1995
Promoted to Major General on 12 April 1995.

U.S. Army Strategic Defense Command (USASDC)

Commanders

Brigadier General William J. Schumacher: July 1992 - July 1992, Acting Commander

Lieutenant General Robert D. Hammond: July 1988 - June 1992
Appointed Program Executive Officer for Strategic Defense in October 1988.

Brigadier General Robert L. Stewart: May 1988 - July 1988, Acting Commander

Lieutenant General John F. Wall: July 1985 - May 1988

Deputy Commanders

Brigadier General William J. Schumacher: February 1992 - July 1992

Colonel Robert S. Troth: July 1991 - February 1992, Acting Deputy Commander

Major General John S. Peppers: November 1989 - July 1991

Brigadier General Robert L. Stewart: July 1987 - October 1989

Major General Eugene Fox: July 1985 - July 1987

Ballistic Missile Defense Organization (BMDO)

Program Managers

Major General Eugene Fox: September 1984 - July 1987

Major General Elvin R. Heiberg, III: May 1983 - September 1984

Major General Grayson D. Tate, Jr.: June 1979 - May 1983
Ballistic Missile Defense Program Manager, (June 1979 - September 1982) Commander Ballistic Missile Defense Systems Command (When the PM Office transferred to Washington, in September 1982, Major General Tate assigned the BMDSCOM duties to Colonel Robert J. Feist.)

Major General Stewart C. Meyer: November 1977 - June 1979
BMD Program Manager, Commander, BMDSCOM and Commander, BMDATC

Brigadier General John G. Jones: August 1976 - October 1977
BMD Program Manager and September 1975 - October 1977 Commander BMDSCOM

Major General Robert Creel Marshall: August 1974 - August 1976
BMD Program Manager and July 1969 - April 1973 Commander, BMDSCOM

Lieutenant General Walter P. Leber: May 1974 - August 1974, BMD Program Manager

Deputy Program Mangers

Brigadier General William J. Fiorentino: October 1984 - June 1985

Mr. Jack H. Kalish: August 1983 - -----
Deputy BMDPM - Washington

Major General Eugene Fox: August 1983 - September 1984
Deputy BMDPM - Huntsville

Ballistic Missile Defense Systems Command (BMDSCOM)

Commanders

Brigadier General Eugene Fox: July 1983 - January 1986

Colonel Robert J. Feist: September 1981 - July 1983

Major General Grayson D. Tate, Jr.: June 1979 - September 1982

Major General Stewart C. Meyer: November 1977 - June 1979

Colonel Roger D. Powell: October 1977 - November 1977, Acting Commander

Brigadier General John G. Jones: September 1975 - October 1977

Major General Bates C. Burnell: May 1974 - August 1975

Major General Robert Creel Marshall: July 1969 - April 1973

SAFEGUARD

Systems Manager

Lieutenant General Walter P. Leber: April 1971 - August 1971

Lieutenant General Alfred D. Starbird: March 1969 - March 1971

Commanders

Brigadier General Bates C. Burnell: April 1973 - May 1974

Brigadier General Robert Creel Marshall: October 1969 - April 1973,
July 1969 - October 1969, Acting Commander

SENTINEL

Systems Manager

Lieutenant General Alfred D. Starbird: November 1967 - March 1969

Commanders

Brigadier General Ivey O. Drewry: November 1967 - July 1969

NIKE-X Project Office

Lieutenant General Austin W. Betts: September 1966 - November 1967
Acting NIKE-X System Manager in addition to principal assignment as Army Chief of R&D. Remained Chief of R&D after November 1967.

Brigadier General George Mayo, Jr.: December 1966 - November 1967
Deputy NIKE-X System Manager (Plans). Received his promotion to Brigadier General in February 1967.

Brigadier General Ivey O. Drewry: 1962 - 1967
NIKE-ZEUS and subsequently NIKE-X Project Manager

Program Executive Officer for Air and Missile Defense

(formerly PEO Missile Defense and PEO Global Protection Against Limited Strikes (GPALS))

Brigadier General John M. Urias: December 2001 - present
Dual Hatted as the PEO and the DCG, RDA for USASMDC.

Dr. Shelba Proffitt: February 2001 - December 2001, Acting PEO-AMD.

Brigadier General John M. Urias: September 1999 - January 2001
Promoted to Brigadier General on 31 January 2000.

Brigadier General Daniel P. Montgomery: March 1996 - September 1999
Promoted to Brigadier General on 8 November 1996.

Brigadier General Richard A. Black: January 1994 - March 1996

Mr. Alan D. Sherer: September 1993 - January 1994, Acting PEO-MD.

Major General William S. Chen: July 1992 - September 1993

Missile Defense Agency

(formerly Ballistic Missile Defense Organization and Strategic Defense Initiative Organization)

Directors

Lieutenant General Ronald T. Kadish (USAF): January 2002 – Present
Missile Defense Agency was established 2 January 2002. June 1999 - January 2002 Director, Ballistic Missile Defense Organization (BMDO)

Lieutenant General Lester L. Lyles (USAF): August 1996 - May 1999

Rear Admiral Richard West (USN): June 1996 - July 1996, Acting Director

Lieutenant General Malcolm R. O'Neill (USA): November 1993 - May 1996
Director BMDO; August 1993 - November 1993, Acting Director BMDO; January 1993 - August 1993, Acting Director SDIO when renamed 13 May 1993. Major General

O'Neill was confirmed on 19 November and promoted to Lieutenant General on 22 November 1993.

Ambassador Henry F. Cooper: July 1990 - January 1993

Lieutenant General George S. Monahan, Jr. (USAF): February 1989 - June 1990

Lieutenant General James A. Abrahamson (USAF): March 1984 - January 1989

Appendix B
Army Space and Missile Defense Chronology

1937

May 1937 Colonel William Blair, Director, Army Signal Corps Laboratory, Fort Monmouth, granted patent for first Army/military radar.

1942

3 October 1942 The first A-4 rocket was successfully launched from Peenemünde. The A-4 was known by the allies as the V-2.

1944

31 January - 4 February 1944 Elements of the 7th Infantry Division and the 4th Marine Division began an assault on Enubuj, Mellu, and Ennuebing Islands in the Marshall Islands. On 1 February, the 7th Infantry Division led an assault Kwajalein, while the 4th Marine Division landed on Roi-Namur. The Marines secured Roi-Namur on 2 February 1944. The American flag was raised over Kwajalein on 4 February.

12-13 June 1944 The German Army launched the first ten V-1 rockets against the city of London. The V-1 was a pilot-less aircraft that flew at a speed of 400 mph.

8 September 1944 The German Army launched the first V-2 missiles in an attack on London. The V-2 was a supersonic ballistic missile with a top speed of 3300 mph.

1945

January 1945 At the request of the Army Ordnance Department, Bell Telephone Laboratories began work on an anti-aircraft missile that later became the NIKE.

4 July 1945 A delegation of American officers, sent to Europe to investigate the use of ballistic missiles during World War II, recommended that the U.S. undertake a research and development program to develop defenses against these new weapons.

1946

January 1946 Wernher von Braun and 127 German missile experts are brought to the United States (Fort Bliss, Texas) under Operation PAPERCLIP.

January 1946 The Army Signal Corps bounced radio signals off the moon and received the reflected signal back on earth. This did not provide an effective communications link, but proved it was possible to send radio signals through space and back to earth with moderate power.

4 March 1946 The Army Air Force awarded two contracts to study antimissile missiles.

4 April 1946 Stalin told U.S. Ambassador Walter Bedell Smith that the "United States [had] definitely aligned itself against the U.S.S.R.."

16 April 1946 The Army launched the first reconstructed V-2 from White Sands Proving Ground, New Mexico.

29 May 1946 The Stilwell Board Report, convened to determine what equipment U.S. ground forces would require following World War II, recommended the development of defenses against ballistic missiles.

1 July 1946 The beginning of "Operation Crossroads," the atomic tests at Bikini. A B-29 called "Dave's Dream", flew from Kwajalein for the Island of Bikini.

December 1946 The Department of War accepted Dr. Vannevar Bush's judgment, dismissing most missile and space research and development.

1947

24 May 1947 The first full-scale flight test of a U.S. ballistic missile, the CORPORAL.

18 July 1947 With the agreement of the U.S. the Trust Territory of the Pacific Islands (TTPI) was placed under the trusteeship system established under the Charter of the U.N. The agreement went into effect upon approval by the Security Council (2 April 1947) and the U.S. government. Executive Order No. 9875, delegated interim authority and responsibility for the civil administration of the territory to the Secretary of the Navy.

1949

24 February 1949 A two-stage BUMPER missile consisting of a German V-2 with a WAC (Without Altitude Control) CORPORAL as the second stage was fired at White Sands Missile Range (WSMR). The launch, part of the Army missile program headed by Dr. von Braun and his team, achieved an altitude of 250 miles, a world record at that time. This was the first penetration of outer space. (The rocket did not remain in orbit because it lacked sufficient velocity.)

June 1949 The Army transferred von Braun and the Ordnance Research and Development Division Sub-Office (Rocket) from Fort Bliss, Texas, to Redstone Arsenal, Huntsville, Alabama. The move was completed in 1950.

August 1949 The Soviet Union exploded an atomic bomb. This provided the impetus for the U.S. to develop a hydrogen bomb, the Army to build antiaircraft emplacements around strategic locations, and led to a reappraisal of U.S. national security policy.

1950

April 1950 NSC 68 (National Security Council Memorandum 68) established containment policy against Communist aggression as U.S. national policy. This memorandum was signed in September 1950 and remained classified for twenty five years.

July 1950 The Army formed the Anti-Aircraft Command later known as the U.S. Army Air Defense Command (ARADCOM). Headquartered at Ent AFB, Colorado Springs, CO, this organization was "to provide Commander in Chief, North American Defense Command with combat ready Army Air Defense Forces to defend critical localities in CONUS." From July 1961, the ARADCOM participated in the BMD program. As of 1972, they were "to provide specified support in user deployment planning activities and to assume command of the tactical SAFEGUARD forces upon deployment."

30 September 1950 President Truman approved National Security Council 68, the first comprehensive statement of American national strategy from the NSC.

1951

29 June 1951 President Harry S Truman signed Executive Order 10265, revoking Executive Order No. 9875 and transferring administration of the TTPI from the Secretary of the Navy to the Secretary of the Interior.

1953

20 August 1953 First launch of the Redstone rocket at Cape Canaveral, FL. Beginnings of the Army's space effort, part of the program at Redstone Arsenal, AL. The Redstone served as a space launcher and, in 1958, as a tactical ballistic missile stationed in Germany.

1954

February 1954 Operational hydrogen bomb detonated by the United States. The U.S.S.R. detonated its first thermonuclear weapon in August 1953.

1 March 1954 Congress approved U.S. participation in International Geophysical Year 1957-1958 (IGY) program.

5 May 1954 The *New York Times* reported that the Soviet Union might be besting America in rocket and missile development, to include new "supersonic" missiles capable of intercontinental nuclear strikes. The press dubbed these ICBMs the "ultimate weapons" for which there was no defense.

6-7 December 1954 Joint Army-Navy conference on Project ORBIT. As a result of this conference the Project ORBIT proposal was pressed in December 1955.

1955

February 1955 The Army Ballistic Missile Agency (ABMA), in Huntsville, AL, contracted with Western Electric Company and Bell Telephone Laboratories, for a study to explore the feasibility of a defense against strategic ballistic missiles, in particular ICBMs.

29 July 1955 President Eisenhower announced the United States' intention to launch a satellite during the IGY (1957-1958).

1 December 1955 President Dwight D. Eisenhower approved NSC recommendation (NSC 1484) to assign the ICBM and the IRBM "joint" highest national priority. Some sources trace this decision to a State Department study which concluded that, in the missile race, if the Soviet Union produced a long range ballistic missile first it would greatly reduce confidence in American technological superiority.

1956

1 February 1956 The ABMA established as a Class II activity on Redstone Arsenal (General Orders 68, 22 December 1955).

May 1956 "The Special Assistant for Guided Missiles to the Secretary of Defense disapproved the Army's request that the Jupiter-C be designated the backup to the Vanguard." Officials decided that "the need for ballistic missiles for retaliatory strikes was a national priority and it was feared that trying to meet two or more projects simultaneously would dilute the Army's tactical and intermediate ballistic missile work."

September 1956 The JUPITER-C achieved the first deep penetration of space with an altitude of more than 682 miles and a range of 3,355 miles.

2 October 1956 "The Special Assistant for Guided Missiles to the Secretary of Defense informed the Secretaries of the Army and the Air Force that in the antimissile field, the Air Force would have responsibility for developing the early warning system and the Army would have responsibility for active defense system. The assignment to the Army was justified on the grounds that major targets were already defended by NIKE sites, NIKE-II appeared to be the only project beyond the study stage capable of accomplishing the mission, and there was "a basic similarity between the anti-ICBM problem and the anti-missile missile for field army use."

1 November 1956 The Department of the Army (Army Chief of Research and Development) authorized the Chief of Ordnance to begin phased development of the NIKE II System.

15 November 1956 NIKE II, the product of an 18-month study by Bell Labs and Western Electric, was officially named NIKE-ZEUS.

26 November 1956 Secretary of Defense Charles Wilson issued a directive settling the Army-Air Force dispute over defense responsibilities for the Continental United States. The Army was responsible for land-based surface-to-air missile systems protecting specific cities or

vital installations that required radars near the launching sites to give the missiles guidance information. Intercepts would occur within 100 nautical miles of targets in the atmosphere. The Air Force was responsible for land-based surface-to-air missile systems for area defense, without reference to specific sites. A network of radars far from the launch sites gave the missiles guidance information; intercepts would occur outside the atmosphere. The directive did not distinguish between ballistic missile defense and antiaircraft defense and failed to specify which service would control deployed systems.

1957

26 February 1957 Secretary of Defense Charles E. Wilson announced at a press conference that the JUPITER missile program was "in effect" canceled. One day later Major General John B. Medaris announced that the current development work on the JUPITER IRBM would continue unabated. The JUPITER was the primary project of the ABMA.

9 July 1957 The ABMA sent a letter to Chief of Ordnance outlining its potential satellite launching capability.

26 August 1957 The Soviet Union announced their first successful ICBM test flight, the SS-6, "a single stage missile with clustered engines that developed twice the power of the American Atlas or Titan ICBMs."

September 1957 A joint Atomic Energy Commission and DoD study concluded that it was feasible to develop a warhead for NIKE-ZEUS.

4 October 1957 The U.S.S.R. launched SPUTNIK the world's first artificial satellite into orbit, using an SS-6 Sapwood ICBM. The payload weighed 184 pounds. The satellite carried only a radio beeper which transmitted for 21 days before its batteries wore out.

5 October 1957 Dr. Wernher von Braun briefed Secretary of Defense McElroy on the Jupiter-C/Redstone system for immediate satellite launch. He promised the first U.S. satellite in 60 days. Major General Medaris asked for 90 days to complete the mission.

3 November 1957 The Soviet Union launched the world's second satellite, Sputnik II, into low earth orbit. Onboard the 1,119 pound satellite was a live dog named Laika. By launching such a heavy satellite, the Soviets demonstrated that they could also launch a nuclear weapon(s) and possibly de-orbit them on command. It remained in orbit until 13 April 1958.

7 November 1957 In a major televised address on science and security, President Eisenhower announced that Army scientists had successfully solved the problem of ballistic missile reentry.

8 November 1957 The President directed the Army to orbit a satellite by March 1958. The Secretary of Defense ordered the ABAMA to prepare a Jupiter-C missile to launch the Explorer I satellite, as part of the IGY program. Mission was completed 31 January 1958.

December 1957 The Gaither report credited the Soviet Union with a substantial lead in long-range ballistic missiles and gave rise to the so-called "missile gap."

1958

16 January 1958 Secretary of Defense Neil McElroy issued guidance to the Air Force and the Army on the BMD issue. The Army was directed to continue with the ZEUS system components (missile, launch site, radars, and computer components). The Air Force was to continue developing early warning radars, tracking and acquisition radars and communications links, ensuring that they were compatible with the NIKE-ZEUS system. Missile work on the Air Force's WIZARD system, however, was terminated. This decision also assigned "the direction of this development effort [BMD] to the Advanced Research Projects Agency (ARPA), to make [the] most effective use of our overall national capability." President Eisenhower announced the creation of ARPA, established in response to Sputnik, in his 1958 State of the Union Address.

The memoranda only addressed the development of the system. There was no mention of organizational control over a deployed system.

22 January 1958 The NSC assigned the highest national priority ("S-Priority") to the NIKE-ZEUS antimissile missile development program.

31 January 1958 The United States Army launched Explorer I, the first U.S. satellite to orbit around the earth, using a JUPITER-C rocket. The launch was completed 84 days after the ABMA was given the mission. The 18.13-pound satellite measured high altitude radiation belts and discovered the cosmic radiation belt identified by Dr. James A. Van Allen. In his State of the Union Address, President Eisenhower had given top priority to the development of satellite and missile defense systems, making them comparable to ICBM and IRBM research efforts. Explorer I returned to earth's atmosphere on 31 March 1970.

7 February 1958 The Department of Defense (DoD) established the ARPA, which was responsible for the nation's outer space program.

17 March 1958 Vanguard I successfully launched. The Army Signal Corps designed and built Vanguard I cloud cover satellite solar converters for NASA and proved the practicability of solar converters.

20 March 1958 The DA established the U.S. Army Ordnance and Missile Command (AOMC) at Redstone Arsenal. The AOMC was composed of the ABMA; the Jet Propulsion Lab, Pasadena, CA; WSMR; Redstone Arsenal; and the newly created U.S. Army Rocket and Guided Missile Agency (ARGMA) Effective 31 March 1958

26 March 1958 Explorer III placed in orbit. It was the first American satellite to store information on tape and play it back when it received a command from a ground station.

1 April 1958 NIKE-ZEUS project is under the ARGMA, which supplanted the RAMMSO. The ARGMA was organized as a subordinate element of the AOMC, at Redstone Arsenal (AOMC General Orders 6). The stated mission of the ARGMA was the development,

procurement, production, industrial engineering, industrial mobilization, maintenance and repair part supply, and stock control of ordnance rockets and guided missiles. This charge encompassed all Army surface-to-surface and surface-to-air missiles except the ballistic missiles for which the ABMA was responsible.

2 April 1958 The President recommended to Congress that a civilian agency be established to direct non-military space activities.

17 April 1958 Project "Man Very High" redesignated Project ADAM. Formal proposals were submitted to OCRD and ARPA in May and June. Director of ARPA advised the Secretary of the Army, in an 11 July 1958 memo that Project ADAM "was not considered necessary to 'Man-in-Space' program and therefore would not be funded by ARPA." They added that should the project proceed with another organization, they "would be pleased to receive information on applicable data."

June 1958 The National Aeronautics and Space Act was signed. This act created the National Aeronautics and Space Administration (NASA) as of 1 October 1958. NASA was given a broad charter for aeronautical and space research. The core of NASA's facilities came from the disbanded National Advisory Committee for Aeronautics. The Air Force would continue development of ICBMs and the Navy could continue the development of sea-launched rockets although the Navy did transfer Project Vanguard and part of the Naval Research Lab to NASA in November 1958. The Army could continue to develop IRBMs but would transfer much of its rocket program to NASA. Most NASA facilities, launch sites and test ranges have been and continue to be, built under the supervision of the Army Corps of Engineers.

16 July 1958 Army proposal for Space Payloads forwarded to Director ARPA by Secretary of Army with recommendation that it be approved in conjunction with Plan B 12-vehicle Juno IV program.

25 July 1958 ARPA Order 10-59 issued to AOMC, approving meteorological payload. The order made no mention of launching vehicle.

26 July 1958 The Army launched a Juno I rocket which placed the Explorer IV satellite into an elliptical, inclined orbit. The satellite measured the results of a high altitude nuclear explosion and took measurements of the sun for three months. Its orbit decayed in October 1959.

29 July 1958 President Eisenhower created NASA to avoid the militarization of space. On 21 October 1959, the ABMA scientists and engineers transferred to NASA.

15 August 1958 ARPA authorized ABMA to begin work on the Saturn booster.

23 September 1958 After AOMC and ARPA signed a Memorandum of Understanding (MOU) on this date, the SATURN program began at ABMA under Army management.

SATURN design studies were authorized to proceed at Redstone Arsenal for development of a 1.5 million pound thrust, clustered engine first stage.

1 October 1958 NASA officially activated.

November 1958 A NIKE-HERCULES missile destroyed a supersonic target missile traveling faster than 1500 miles per hour at an altitude greater than 60,000 feet. This was the first intercept of a very high altitude supersonic target missile.

26 November 1958 The U.S. manned satellite space program using the REDSTONE as a booster was officially named Project MERCURY.

3 December 1958 Support agreement signed between the Army and NASA. Army rockets/missiles would be used extensively in the early space program, to include the Mercury Redstone manned satellite space program. As part of this agreement the JPL transferred from the AOMC to NASA.

6 December 1958 The Army's Juno II rocket, a modified Jupiter, launched the Pioneer III lunar probe for NASA. It did not reach the moon, but did travel for more than 66,654 miles into outer space and gathered radiation data that indicated the existence of a second radiation belt around the Earth. The launch was also a successful test of the first four-stage JUNO II vehicle.

13 December 1958 JUPITER Missile AM-13 was fired, marking the first successful flight of a JUPITER IRBM incorporating the tactical ballistic shell configuration. The missile also carried a squirrel monkey named Gordo, contributing highly useful data for Army and Navy medical research into space flight. Although Gordo made the flight with no adverse effects, the monkey could not be recovered because the nose cone's flotation device failed.

18 December 1958 The Army Signal Corps placed President Eisenhower's Christmas message to the world on a communications payload satellite – the Signal Communications by Orbiting Relay Equipment (SCORE). The satellite transmitted the President's message on a shortwave frequency to the world below. This was the first time that the human voice was heard from space. The system operated for 12 days responding to 78 transmissions before the batteries failed. The President's message was: "This is the President of the U.S. speaking. Through the marvels of scientific advance, my voice is coming to you from a satellite traveling in outer space. My message is a simple one: Through this unique means I convey to you and all mankind, America's wish for peace on Earth and goodwill toward men everywhere." This was the first time that the human voice was heard from space.

1959

January 1959 NASA published the selection criteria for astronauts. One of the requirements was that all astronauts had to be experienced test pilots. This effectively eliminated Army personnel from consideration as astronaut candidates.

8 January 1959 NASA assigned ABMA the mission to develop eight REDSTONE-type vehicles for use in the MERCURY manned satellite program.

12 February 1959 The DoD's Ballistic Missile Committee approved the test program for NIKE-ZEUS and made Kwajalein the down-range test site.

17 February 1959 Vanguard II satellite launched into low Earth orbit, carrying an Army developed infrared cloud imaging sensor but stability problems precluded imaging efforts.

1 March 1959 The ABMA was assigned responsibility for development of ballistic targets for the NIKE-ZEUS test program.

3 March 1959 The JUNO II launched PIONEER IV, which achieved a velocity greater than the 24,560 miles per hour required to escape the Earth's gravitational force, shot by the Moon at a distance of about 36,000 miles from that body and sped on to become the first U.S. satellite to make an orbit of the Sun.

20 March 1959 Army task force formed under direction of Major General John Medaris of AOMC. The purpose of Project Horizon was to develop a plan to establish a lunar outpost by the quickest practical means.

28 May 1959 Able, a 7 lb rhesus monkey and Miss Baker, a 1 lb squirrel monkey, became the first living creatures to fly in space and return safely. "The two primates were hurled 1600 miles down-range into the Atlantic aboard a Jupiter nose cone."

26 August 1959 First NIKE-ZEUS missile was fired at WSMR. The test was deemed a partial success.

27 August 1959 All national missions related to target missile systems were centralized in ARGMA on this date.

September 1959 The DoD determined that the Air Force would have responsibility for all military space operations, with the exception of the Navy Polaris program.

22 September 1959 The Army and Navy signed an MOA for the use of Kwajalein as a test range for the NIKE-ZEUS program.

13 October 1959 The ABMA launched its last Explorer satellite, Explorer VII, with a Juno II rocket. This satellite studied the X-rays emitted by the sun and their influence on the ionosphere. It also identified the heavy particles constituting cosmic rays and measured the heat emitted by the Earth.

November 1959 The Army transferred its Saturn rocket development program to NASA.

1960

29 February 1960 The ADVENT program was established by ARPA. It would be a single 24-hour, equatorial synchronous, military communications system. The Army would develop the satellite communications equipment and the Air Force would be responsible for the booster and the spacecraft.

15 March 1960 A REDSTONE missile successfully fired from the WSMR lofted a "flying TV station for the first time."

1 April 1960 The Army launched TIROS 1 (Television and Infrared Observation Satellite) into low-earth orbit. TIROS 1 was the first American weather satellite. Both ABMA and Army Signal Corps helped to develop the TIROS 1 and 2 satellites.

3 June 1960 A NIKE-HERCULES antiaircraft guided missile tracked and shot down a CORPORAL ballistic missile at the WSMR marking the first ballistic missile to be killed by a missile.

1 July 1960 The AOMC/ABMA lost all of its space-related missions, along with about 4,000 civilian employees and $100 million worth of buildings and equipment.

10 August 1960 Ninth ZEUS missile (20009) successfully tested at WSMR. This was the first firing of the advanced design ("wingless") missile.

12 August 1960 ECHO I, the first passive relay communications satellite was launched. It demonstrated the feasibility of global communications via satellite.

September 1960 A NIKE-HERCULES missile shot down another NIKE-HERCULES missile at an altitude of 19 miles, the highest known missile kill to date.

4 October 1960 The Army's COURIER 1B satellite was launched into a low-earth orbit. This communications satellite exceeded the storage and transmission capabilities of the earlier SCORE satellite. It was the first communications satellite to be powered by long life solar cells to recharge nickel cadmium storage batteries.

9 December 1960 The Mercury I unmanned capsule was launched on a suborbital flight using an Army Redstone missile.

1961

31 January 1961 A second Mercury test flight carried a chimpanzee named Ham into space. The suborbital mission helped prove the system's operational capabilities in a space environment. Ham survived the flight.

4 March 1961 According to reports, the Soviet V-1000 antimissile completed the first successful missile intercept.

6-28 March 1961 DoD Directive 5160.32 Development of Space Systems assigned responsibilities for satellite development: (1) each service could conduct preliminary research to use satellite technology. (2) Army would continue its ADVENT communications satellite work. (3) Navy would continue its TRANSIT navigation satellite work. (4) Air Force would conduct advanced research and development work and operate all DoD reconnaissance satellites and (5) DoD would review and approve all advanced satellite research and development proposals.

12 April 1961 Yuri Gagarin, aboard a Vostock capsule, became the first man to fly in space and orbit the Earth. He parachuted back to earth after reaching a designated altitude.

5 May 1961 Alan Shepard became the first American to make a sub-orbital flight into space. He flew aboard the Mercury 3 capsule known as the Freedom 7. Launched by a modified Army Redstone rocket, the flight lasted 15 minutes and 22 seconds.

21 July 1961 Virgil Grissom went into space in another suborbital Mercury mission launched by the Army's Redstone Rocket.

22 September 1961 Secretary of Defense approved first two phases of a three-phase plan for the production and deployment of NIKE-ZEUS. The system was to be deployed in defense of twelve metropolitan areas.

11 December 1961 The ARGMA was abolished and its missions and functions were merged with AOMC Headquarters (General Orders 47, 26 December 1961).

14 December 1961 Three ZEUS firings were conducted on this date at three different locations. 1. NIKE-ZEUS ZM-6 was successfully test fired at Point Magu, in the longest and highest test flight made to date. 2. NIKE-ZEUS ZW-34 successfully acquired, tracked and intercepted a high altitude, maneuvering supersonic NIKE-HERCULES target missile over WSMR. This was the first intercept of a HERCULES guided missile, and the first successful integrated system test. – "a major ABM system milepost." 3. NIKE-ZEUS ZK-1 was test fired from Kwajalein against a space point, the first firing from this test facility.

1962

30 March 1962 A Feasibility study was completed on a fast-reaction, surface-to-air missile "which by its rapid acceleration, would maximize the time available to a defense for discriminating between warheads and possible decoys."

27 April 1962 The Secretary of Defense added a new requirement to the NIKE-ZEUS system, to provide the capability for a satellite interception demonstration at Kwajalein, by 1 May 1963. This project was code named MUDFLAP.

12 December 1962 First fully successful NIKE-ZEUS missile intercept of an ICBM. The missile intercept occurred with a miss distance well within acceptable limits. The target was an Atlas D launched from Vandenberg AFB, CA.

17 December 1962 First ZEUS missile, modified for Project MUDFLAP anti-satellite tests was fired at WSMR. It successfully intercepted a designated space point at an altitude of 100 nautical miles.

1963

5 January 1963 At the direction of the Deputy Secretary of Defense Roswell Gilpatrick, NIKE R&D was redirected to a new system which would address the 1970's ICBM threat.

1 February 1963 Office of the NIKE-ZEUS Project Manager established as a Class II activity, assigned to the Headquarters, U.S. Army Materiel Command. Located in Huntsville, the personnel and records of this office were to be transferred from the U.S. Army Missile Command (MICOM) to AMC HQ. The Project Office was thus separated from MICOM, except for administration, training and logistics support.

23 May 1963 NIKE-ZEUS achieved another milestone when it successfully intercepted an AGENA D earth satellite.

4 July 1963 A NIKE-ZEUS fired from Kwajalein successfully intercepted an Atlas "E" launched from Vandenberg AFB CA.

1964

1 February 1964 NIKE-X Project Office replaced the NIKE-ZEUS Project Office. It was organized in the same format as the NIKE-ZEUS Office.

1 July 1964 Kwajalein transferred from the U.S. Navy to U.S. Army control and assigned to the NIKE-X Project Office.

October 1964 The Chinese exploded a nuclear device. At this time, however, they had few bombs and no missile to deliver the device.

14 October 1964 NASA modified their astronaut selection criteria, dropping the jet pilot experience requirement, thereby allowing scientist-astronauts, making Army personnel eligible for astronaut duty.

1965

5 June 1965 The Secretary of the Army approved an organization plan which placed the NIKE-X System Manager at DA level.

17 November 1965 First guided SPRINT flight test took place at WSMR.

1966

6 May 1966 NIKE-ZEUS completed developmental flight testing of the ZEUS missile.

June 1966 Phase I of the DSCS Program initiated, with 26 satellites launched in 2-year period. Phase II began in 1971 and Phase III in October 1982.

1 September 1966 ODCSOPS Study "NIKE-X Studies for 1966 (X-66), Report to the SECDEF" concluded that: "There is adequate assurance that the probable effectiveness of NIKE-X justifies the cost of deployment at DEPEX-II."

28 September 1966 General Harold Johnson, Chief of Staff of the Army, selected the NIKE-X program for exceptional management techniques, in Memorandum 66-436.

30 September 1966 The command purchased a two-man submarine for recovery of reentry vehicles at KMR.

15 October 1966 NIKE-X System Office established as a Class II activity under the command of the NIKE-X System Manager. Located in Washington, it served as a single point of contact within DA for the coordination and direction of all activities pertinent to the NIKE-X. The NIKE-X Project Office and the NIKE-X Engineering Service Test Organization were placed under operational control of the NIKE-X System Office.

27 October 1966 The People's Republic of China announced that they had successfully test-flown a guided missile with a nuclear warhead.

10 November 1966 Secretary of Defense Robert McNamara announced that the Soviet Union had deployed an ABM system, 64 launchers deployed around Moscow.

1967

1 January 1967 To avoid confusion with the ZEUS missile, and the ZEUS DM 15X-2 missile, was renamed SPARTAN.

23 June 1967 At the Glassboro summit, President Lyndon Johnson tried to convince Soviet Premier Alexsei Kosygin that the U.S.S.R. should abandon missile defense efforts. Without this decision, Johnson stated that the U.S. "would be compelled to increase the number of warheads in its ICBM arsenal to overwhelm any defenses." Kosygin replied: "Defense is moral; offense is immoral."

15 August 1967 Created at the direction of Secretary of Defense McNamara, the DoD established the Montgomery Committee to review the Chinese threat. They released their report which "[indicated] that the NIKE-X DEMOD 1-67 constituted an adequate base for proceeding."

18 September 1967 In a speech to the UPI editors and publishers in San Francisco, Secretary of Defense McNamara announced the decision to deploy some NIKE-X components as an ABM system. The SENTINEL System, was a limited deployment production decision consistent with NIKE-X Deployment Model 1-67, designed to provide protection for urban/industrial areas against possible ICBM attacks by the People's Republic of China. It

would also serve as a defense against accidental launch with an option to defend the Air Force's MINUTEMAN missile sites.

15 October 1967 U.S. Corps of Engineers Huntsville Division organized, as the U.S. Army Corps of Engineers NIKE-X Division. This was the first division organized by the Chief of Engineers in many years.

1 November 1967 The DoD announced the locations of the first ten SENTINEL sites: Boston Perimeter Acquisition Radar (PAR) and Missile Site Radar (MSR); Chicago MSR; Grand Forks AFB, ND PAR and MSR; Salt Lake City MSR; Detroit PAR and MSR; Seattle PAR and MSR; Hawaii MSR; New York MSR; and Albany, GA MSR; Sedalia, MO, and two others on 13 November 1968 (Warren AFB, WY, and Malmstrom AFB, MT). Two additional sites, Washington, D.C. and Fairbanks, AK, were never publicly announced.

15 November 1967 SENTINEL System Organization created under DA General Orders 48, replaced the NIKE-X System Office and Manager. SENTINEL System Command (SENSCOM) was established as a Class II Activity, under the direction of the SENTINEL System Manager. The System Manager position was created within the Office of the Chief of Staff.

The SENTINEL System Organization included the SENTINEL System Office in Washington, D.C., the SENTINEL System Command in Huntsville, AL, and the SENTINEL System Evaluation Agency in WSMR.

At the direction of the DoD, the SENSCOM focused on systems/operations of the SENTINEL system, while a parallel command, the BMD Research Office was created for further R&D efforts. In March 1968, the research office, also a Class II Activity, was renamed ABMDA. They reported to the Army's Chief of R&D. The two bodies, SENSCOM and ABMDA, were collocated and coordinated both in Washington and in Huntsville. The SENTINEL System Evaluation Agency, was also created as a Class II Activity located at WSMR, replacing the NIKE-X Engineering/Service Test Office. The Program Manager NIKE-X, Project Manager Kwajalein Test Site and NIKE-X Engineering/Service Test Office were discontinued as AMC activities.

15 November 1967 Secretary of the Army nominated the SENTINEL System production program to the S category of the master urgency list.

1968

March 1968 At the direction of the Secretary of Defense, the ARPA's research effort into advanced BMD concepts, Project Defender, transferred to the Army.

30 March 1968 First SPARTAN missile launched from Kwajalein. The SPARTAN "performed according to its fight plan with the flight terminating at 277.7 seconds. All test objectives were met."

10 April 1968 Ground-breaking ceremony held at SENSCOM Headquarters, for their new site at 106 Wynn Drive, in Huntsville.

16 April 1968 Kwajalein Test Site re-designated Kwajalein Missile Range (KMR).

14 May 1968 Under an MOA, the U.S. Army Engineering Division, Huntsville, was placed under operational control of the SENTINEL System Manager.

30 June 1968 The U.S. Army NIKE-X Development Office (NXDO) was established as a Class II Activity of the Chief of R&D at Huntsville, AL, under command jurisdiction of the ABMDA with responsibility for execution of the Army Advanced Ballistic Missile Defense Program. The Advanced Development Directorate of the SENSCOM and that portion of the Advanced Research Projects Division of the MICOM designated as supporting Project DEFENDER were transferred to the U.S. Army NXDO.

1 October 1968 Operational Control of PRESS Complex (less ALTAIR and ALCOR) transferred from ARPA to Kwajalein Range Directorate.

15 October 1968 Office of the Secretary of Defense approved the Sentinel Deployment Model (DEMOD 1-68 Revised).

1969

19 January 1969 The Missile Site Radar at Meck Island became fully operational.

20 January 1969 President Richard Nixon took office and initiated a DoD review of strategic offensive and defensive priorities.

6 February 1969 Secretary of Defense Melvin Laird ordered a halt in the deployment of the Sentinel system, pending the completion of a one-month review of U.S. strategic programs and other weapons systems by the new administration.

14 March 1969 President Richard Nixon redirected the BMD program. Components remained unchanged but deployment concepts were redrawn. Nixon specified three defense objectives: "Protection of our land-based retaliatory forces against a direct attack by the Soviet Union"; "Defense of the American people against the kind of nuclear attack which Communist China is likely to be able to mount within the decade"; and, "Protection against the possibility of accidental attacks from any source." The primary new focus for the program is the defense of twelve U.S. land-based ICBM sites. Authorization was subsequently given for only two MINUTEMAN bases, Grand Forks AFB, ND, and Malmstrom AFB, MT.

25 March 1969 SENTINEL System Manager became the SAFEGUARD System Manager. Similarly the SENTINEL System Organization, SENTINEL System Command, and SENTINEL System Evaluation Agency were re-designated SAFEGUARD. A separate order renamed the SENTINEL Logistics Command, the SAFEGUARD Logistics Command.

1 May 1969 The NXDO was re-designated the ABMDA, Huntsville. The mission was unchanged.

8 May 1969 The Institute of Heraldry approved the shoulder sleeve insignia for SAFEGUARD. This insignia was used until the mid-1990s.

1970

30 January 1970 President Nixon announced his decision to extend the deployment of SAFEGUARD, beyond the initial two-site Phase I program. The recommendation included a third site (Whiteman AFB, MO) and advance preparation for five additional sites (in the NE, NW, Washington, D.C., Warren AFB, WY, and in the Michigan-Ohio area). There was no deployment commitment for the latter sites.

21 July 1970 U.S. Army SAFEGUARD System Site Activation command – Grand Forks, ND, organized.

1 August 1970 The U.S. Army SAFEGUARD System Site Activation Command Malmstrom, located at Conrad, MT, organized.

12 August 1970 Forty-second and final SPRINT firing from WSMR.

8 September 1970 DoD released a revised DoD Directive 5160.32, Development of Space Systems. It assigned the following DoD Satellite Development responsibilities: (1) Each service is to conduct research and receive approval to develop the following type satellites: "unique battlefield and ocean surveillance, communication, navigation, meteorological mapping, charting and geodesy satellites." (2) The Air Force is to perform R&D, production, and developing of the following systems: launch support, launch vehicles, warning and surveillance satellites enemy nuclear capabilities, and orbital support operations; (3) the DoD Director of R&D is to serve as focal point for space technology and system to prevent unwarranted duplication minimize technical risk and cost, and ensure multiple service needs are met.

9 October 1970 The KMR Directorate SAFSCOM was organized.

23 December 1970 First live target intercept by a SPRINT missile, with intercept of an ICBM reentry vehicle, demonstrating the ability to conduct high-speed low-altitude (endo-atmospheric) intercepts Mission M1-12. The test was conducted from Meck Island.

1971

11 January 1971 The first salvo launch was made from Meck Island, in the Republic of the Marshall Islands. The test involved two SPARTAN missiles. One missile successfully intercepted an RV, the other a space point.

14 January 1971 Deputy Secretary of Defense Packard ordered the Army to proceed with a new facet in the BMD development, the Hardsite Defense (HSD) Project Office. Deployed in groups to protect Minuteman sites and each other, the concept called for a phased array radar, an interceptor, and commercial data processing equipment. Site Defense would be

capable of handling a larger, more sophisticated threat than SAFEGUARD. The Project Office was under the SAFSCOM.

22 January 1971 The U.S. Army SAFEGUARD System Site Activation Command BMDC, Colorado Springs, CO, organized. In addition to directing activities of the site activation program, the BMDC, was "responsible for interface coordination of system requirements, equipment design, building configuration, logistic support and the whole spectrum of engineering and technical specifications of the integration of the BMDC with the expanded NORAD Cheyenne Mountain Complex."

April 1971 A SPARTAN missile successfully intercepted an IRBM for the first time.

6 May 1971 The SPRINT missile system intercepted its first IRBM (POLARIS MARK-2).

22 October 1971 The ARADCOM issued General Orders creating the first two units to be assigned to man the SAFEGUARD sites. Both units were organized with zero strength, but provided an organization to which newly trained personnel may be assigned. They are scheduled to be organizational 1 September 1973.

2 December 1971 Construction began on the BMD Center located in NORAD's Cheyenne Mountain Complex. It was the command and control element of SAFEGUARD.

1972

16 March 1972 A SPRINT missile successfully intercepted an ICBM. This was the first remote launch from Illeginni. The purpose was to test "toss and catch."

19 April 1972 The SAFSCOM Site Defense of Minuteman Project Office located in Huntsville, AL, was re-designated the SAFSCOM Site Defense Project Office (SAFSCOM General Orders 10, 25 April 1972). This change reflects the current Army program, previously known as the Prototype Demonstration Program for Site Defense of Minuteman" and now described as the "Prototype Demonstration Program for Site Defense."

26 May 1972 President Richard Nixon and General Secretary Leonid Brezhnev of the Soviet Union signed the ABM Treaty. Both nations agreed to a limit of two ABM sites each, one near the capital and the other near an ICBM complex. Each ABM site could have 100 missiles and 100 launchers and 15 additional launchers at test sites. In addition, the treaty regulated the type of radars for the ABM site. Finally, the treaty prevented each country from defending its entire territory, thereby negating the deterrent effect.

An interim accord, signed at the same time, set maximum limits for each country's ICBM and sea-launched ballistic missiles (SLBMs) for five years. The U.S. was allowed 1,054 ICBMs, the amount it had had since the mid-1960s, and 710 SLBMs with 44 ballistic missile submarines. The U.S.S.R. was allowed 1,618 ICBMs, 950 SLBMs and 62 submarines. The treaty was ratified by the Senate on 3 August 1972 and signed in Washington by President Nixon on 3 October.

1973

The Army created the Army Space Program Office (ASPO) and the Tactical Exploitation of National Capabilities Program (TENCAP). "TENCAP provides developmental equipment to provide the means by which national level systems can provide support to designated battlefield commanders."

3 April 1973 The Secretary of Defense issued a memorandum, which provided guidance for the DoD's BMD programs. It specified the objectives as follows: "to deploy at the Grand Forks Site a system with the objectives of providing: (1) defense of retaliatory forces and (2) a base of obtaining experience with installation, test, and operation of a deployed ABM site." A product of this memo was the development of the SAFEGUARD Operational Experience Program, designed "to provide a systematic method of assuring that the experience obtained through deployment and operation of the SAFEGUARD is available as a significant operational experience data base for use in the development and deployment of future BMD systems and other complex systems."

21 June 1973 The last SPARTAN R&D missile and the first SPARTAN production missile were successfully flight tested in a dual salvo mission.

5 August 1973 The PAR at Grand Forks, ND, tracked its first satellite.

31 August 1973 Secretary of Defense signed an Amended Program Decision which placed funding and operational constraints on the SAFEGUARD program and funding constraints on the Site Defense program.

29 November 1973 Last remote SPRINT launch from Illeginni and last planned live intercept in the SAFEGUARD Meck Test Program conducted successfully.

1974

February 1974 The last operational NIKE-ZEUS facility ceased to operate. The KMR Target Track Radar-4 had participated in a variety of test programs over the previous 13 years.

13 February 1974 First launch of the ATHENA from Wake Island, as part of the Army Special Targets Program. The seventh and final launch took place on 23 June 1974.

1 March 1974 U.S. Surveillance Battalion Grand Forks Site was reorganized at Cavalier, ND, to "provide long-range surveillance and early warning of a ballistic missile attack against the continental United States." It was assigned to the ARADCOM.

1 March 1974 SAFEGUARD Command Grand Forks Site was reorganized and assigned to the ARADCOM. Located at Langdon, ND, its mission was to "defend selected retaliatory missile sites against a ballistic missile attack."

20 May 1974 The SAFEGUARD System Organization was re-designated the Ballistic Missile Defense (BMD) Organization. Similarly, the SAFEGUARD System Manager, Program Office and the SAFSCOM became the BMD Program Manager, BMD Program Office and BMD Systems Command (BMDSCOM), respectively.

The General Orders created a new body, the BMD Advanced Technology Center (BMDATC), as a field operating agency, in Huntsville, AL, under the BMD Program Manager. The BMDATC replaced the ABMDA Huntsville, while the ABMDA Arlington, a field operating agency under the Chief of Research, Development and Acquisition was also discontinued and its personnel, etc. transferred to the BMD Program Office. The BMD Program Manger was assigned, as principal assistant and staff advisor, to the Office of the Chief of Staff. The mission is to deploy and operate the SAFEGUARD System, execute the Site Defense program, conduct research and development in advanced BMD technology, and manage KMR.

30 May 1974 Equipment Readiness Date for the SAFEGUARD BMDC at Colorado Springs, CO. Also the 721 SAFEGUARD PAR subsystem tests were completed.

21 June 1974 SAFEGUARD tactical facilities in North Dakota were designated the Stanley R. Mickelsen SAFEGUARD Complex. The word "complex" was chosen to emphasize the geographical dispersion of the MSR, PAR and four Remote SPRINT Launch sites (General Order 21, 21 June 1974).

30 June 1974 The KMR Directorate was reorganized and assigned to the BMDSCOM. The Commanding General, BMDSCOM, commanded the unit as the National Range Commander, under the direction of the BMD Program Manager.

3 July 1974 President Nixon and First Secretary Brezhnev met at Yalta and agreed to expand the 1972 ABM Treaty. The protocol limits each country to one ABM site, located at either the National Command Authority or an ICBM complex and decreased limits on the number of ABM launchers and interceptors from 200 to 100. The document was signed by President Nixon and General Secretary Brezhnev at the second Moscow summit.

27 September 1974 Acceptance ceremony held for the U.S. Army SAFEGUARD System Tactical Complex at Nekoma, ND.

1 October 1974 The Stanley R. Mickelsen SAFEGUARD Complex (SRMSC).was officially accepted by the Army and dedicated to Lieutenant General Stanley R. Mickelsen. It was the first new military installation in the U.S. since World War II. The system reached initial operating capability in April 1975 and full operational capability in September 1975. The SRMSC reached full operational capability, following the installation of the missiles 30 SPARTANs and 70 SPRINTs. Per the Secretary of Defense's direction, SAFEGUARD was used as "a base for obtaining experience with installation, test, and operation of a deployed BMD site." The SAFEGUARD Complex became the first and only ABM System in the free world. The SAFEGUARD System achieved FOC status three days ahead of schedule.

17 December 1974 The ARADCOM was disestablished.

1975

1 January 1975 The SAFEGUARD Program Office reorganized as the BMD Program Office, and remained assigned to the Office of the Chief of Staff. The new mission was to assist the PM in the following: the development of a program which insures operation of the SAFEGUARD BMD System; the execution of the Site Defense Program; conduct R&D in advanced BMD technology; and, management of the KMR as a National Range.

8 January 1975 The PAR accomplished its first tracking of two live targets.

6 February 1975 Technical Proficiency Inspection of the SAFEGUARD Complex was completed and the SAFEGUARD System certified for its nuclear mission.

1 March 1975 The BMDATC was reorganized. Its mission was to "formulate and execute approved BMD programs of exploratory and advanced development in BMD technology within the guidance and direction of the BMD Program Manager." In addition, it would "(a) provide the advanced technology foundation for improving ballistic missile defense capability; (b) provide a measure of the BMD technology art to avoid technological surprise by an adversary; and (c) assist in the development and assessment of future U.S. strategic offensive systems."

1 April 1975 The SAFEGUARD System reached initial operating capability with 28 SPRINT and 8 SPARTAN missiles deployed - and the "fully netted" system was turned over to the Commander of the Continental Air Defense Command (CONAD) for operational control.

17 April 1975 Mission M2-25 the 26th and final SPARTAN missile launch in the SAFEGUARD Meck Test Program was a success.

30 April 1975 The final SPRINT launch and final SAFEGUARD Meck Test mission. Thirty-three SPRINT missiles were launched in the Meck Test Program.

1 July 1975 The Aerospace Defense Command, a specified command, was created, superseding the previous, Air Force only, Aerospace Defense command and was tasked with space surveillance and defense responsibilities. It also assumed the past responsibilities of the CONAD, which was disestablished.

28 September 1975 The House Appropriations Committee recommended deactivation of the SAFEGUARD site by the end of the fiscal year: “Because of the improved capability of the Soviet Union’s new MIRVed missiles, the limited effectiveness of the SAFEGUARD system to provide the protection it was originally intended to provide and the diminished benefits from operating the facility for only a single year.”

3 October 1975 The Army formally transferred the PAR to the U.S. Air Force as the PAR Attack Characterization System. The ceremonies were conducted at the PAR site in Concrete, ND.

24 October 1975 Site Defense was changed to the Systems Technology Program.

18 November 1975 Senator Edward Kennedy introduced an amendment to the fiscal year 1976/7T Appropriations bill. The amendment read: "Provided further that funds provided in this act for the Operation and Maintenance of the ABM Facility (other than funds provided for operation and maintenance of the PAR) may be used only for the purpose of the expeditious termination and deactivation of all operation of that facility." The amendment was incorporated into the final act.

1976

10 February 1976 The Joint Chiefs of Staff directed that the deactivation of SAFEGUARD begin, as per the Congressional decision (Public Law 94-212, dated 9 February 1976). Radiation for the MSR and the missile launch capability were terminated and the warhead withdrawal commenced. Termination involved the following sites: SAFEGUARD Training Facility, Fort Bliss, TX; BMD Center, Colorado Springs, CO; SAFEGUARD Supply and Maintenance Center, Glasgow, MT; and the missile fields, MSR site, and support facilities, all located in Nekoma, ND. The SRMSC entered "caretaker status."

17 May 1976 The PAR began tracking operations against known satellites. The PAR is capable of deep space tracking.

31 August 1976 The U.S. Army SAFEGUARD Command was inactivated. Personnel and equipment transferred to BMDSCOM, with duty stations to remain in North Dakota.

1977

3 January 1977 The PAR was linked to the NORAD Combat Operations Computer. With this the NORAD Early Warning Sensor became operational under the Army. The Air Force arrived in May 1977.

22 January 1977 The BMDSCOM chartered the LoAD System.

22 August 1977 Air Force personnel assumed tactical responsibility for the PAR.

30 September 1977 Dismantling of the SRMSC facility at Nekoma, ND, completed.

October 1977 Secretary of the Army Clifford Alexander authorized the first Army Award for Project Management outside the Department of the Army Readiness Command. Brigadier General John G. Jones was recognized for his outstanding accomplishments on the BMD program.

1 October 1977 The PAR complex transferred to the Air Force as the PAR Attack Characterization System. The Spacetrack capability became operational in December. The PAR was part of the Air Force's Aerospace Defense Command (1 May 1977 to 30 November 1979);

the Strategic Air Command (1 December 1979 - 30 April 1983) and the Air Force Space Command (1 May 1983).

1978

January 1978 At the request of the Deputy Undersecretary of Defense Research and Engineering (Strategic and Space Systems), the BMD Program initiated a Minuteman Defense (MDS) II study "to define and rate the most feasible systems (or concepts) for defending the Minuteman."

16 January 1978 NASA Administrator Robert Frosch announced the selection of 35 new astronaut candidates for the Space Shuttle program. This was the first group to be selected since 1969. Major Robert Stewart, the first Army astronaut, was a mission specialist among this group of candidates.

2 February 1978 Secretary of Defense Harold Brown stated in his annual report to Congress that "An aggressive BMD R&D program is vital to this nation's interest." He noted the evolving technological base from the STP and ATP efforts "could provide, if strategic arms limitation efforts lead us in that direction, cost effective alternatives for maintaining the survivability of our strategic retaliatory elements in the ICBM threat environment," and emphasized DoD would continue the BMD R&D at a constant real program level of effort.

10 February 1978 The ALTAIR on Kwajalein concluded its test phase.

June 1978 Deputy Undersecretary of Defense Research & Engineering (Strategic and Space Systems) "directed that emphasis in the program be placed on near-term defense concepts and technologies applicable to defense of our land-based missile forces in the 1980s."

21 August 1978 In briefing the U.S. Congressional Budget Analysts, the BMDPM stated: "The restrictions on deployment previously were thought to be such that a treaty limited deployment would not be worthwhile. However, due to advancing technology, this is no longer true and a limited deployment can be useful. We are presently studying this concept."

12 December 1978 In the first of five consecutive tests, the Designating Optical Tracker (DOT) proved long-wave infrared sensors could discriminate, designate and track a reentry vehicle. The DOT set the standard for future LWIR technology.

1979

18 June 1979 President Jimmy Carter and General Secretary Brezhnev signed the SALT II agreement in Vienna. It was agreed that within 6 months each side would have only 2,250 launchers (ICBMs, SLBMs, air-to-surface ballistic missiles and heavy bombers), of these 1,200 of them could be MIRVed. There was no limit on submarine launch vehicles. The agreement included a protocol signed by Brezhnev promising to limit the range and production of the Backfire bomber and statement of principles for SALT III.

In January 1980, following the Soviet invasion of Afghanistan, President Carter removed the treaty from consideration by the Senate. However both countries agreed to observe the two SALT agreements pending clarification of the technical descriptions in SALT II.

28 September 1979 BMD Program Charter was signed.

12 October 1979 The Institute of Heraldry approved the BMD flag.

1982

4 July1982 President Ronald Reagan announced the National Space Policy. NSDD-42 superseded all previous presidential space policy directives. It included five basic commitments: "(1) To the exploration and use of space by all nations for peaceful purposes to permit activities in pursuit of national security goals. (2) To conduct international cooperative space-related activities that achieve scientific, political, economic, or national security benefits for the U.S. (3) To pursue activities in space in support of the United States' inherent right of self-defense. (4). To develop STS capabilities and capacities to meet appropriate national needs and to make the STS available to commercial and government users,…. (d) To continue to study space arms control options and to consider verifiable and equitable arms control measures that would bank, or otherwise limit, testing and deployment of specific weapons provided those measures were compatible with the U.S. national security…."

20 August 1982 DA published *FM 100-5 Operations* which launched the Army's AirLand Battle Doctrine.

1 September 1982 U.S. Air Force Space Command established "to further consolidate Air Force operational space activities."

3 September 1982 The LoAD system re-designated SENTRY.

1983

11 February 1983 The DCS unanimously recommended that the U.S. pursue a national security strategy which placed increased emphasis on strategic defenses. Their decision followed repeated meetings to determine an effective and publicly acceptable fielding program for the MX missile.

23 March 1983 President Ronald Reagan announced his SDI a shift from hardsite defense to defense of the U.S. His speech urged the exploration of the possibility of developing missile defenses as an alternative to deterring nuclear war. The address also added active defense to a primarily offensive deterrence strategy. On 25 March 1985, the President issued National Security Decision Directive 85 which implemented his plans. In July 1984, the BMDO became a part of the SDI.

18 April 1983 Guidance was issued by the President for two studies. The first, the Defense Technologies or Fletcher Report, would assess the state of missile defense technology and recommend a technology program for the new missile defense program. The second, known

as the Future Security Strategy Study (or the Hoffman Report), would assess the strategic and policy implications of such a program.

July 1983 Senator Malcolm Wallop of Wyoming proposed an amendment which would give the BMD organization responsibility for all defense related development of laser technology. The amendment failed.

1 October 1983 The Naval Space Command was established at Dahlgren, VA.

1984

6 January 1984 NSDD 119 was issued authorizing the SDI, to explore the possibility of developing missile defenses as an alternative means of deterring nuclear war. The SDI program would be "focused to demonstrate the technical feasibility of enhancing deterrence and thereby reducing the risk of nuclear war through a great reliance on defensive strategic capabilities." Although non-nuclear efforts were the emphasis of the program, research work on defensive nuclear devices would continue "as a hedge against Soviet work in the same area." The directive made the Secretary of Defense responsible for the new program. Air Force Lieutenant General James Abrahamson was named the first director of the SDIO on 5 April.

23 January 1984 The Reagan administration issued its first President's Report on Soviet Non-Compliance, a series of reports on Soviet non-compliance with arms control agreements. This report deemed the Krasnoyarsk radar an outright violation of the ABM treaty.

3-11 February 1984 Lieutenant Colonel Robert L. Stewart became the first soldier to fly into space, as a Mission Specialist aboard STS-41B (*Challenger*).

2 March 1984 General John A. Wickham, Jr., Army Chief of Staff, awarded Colonel Robert Stewart his wings in a ceremony at Fort Myer, VA. Fort Myer was the site of the initial military airplane test flights in 1909.

10 June 1984 The HOE proved that it was possible to hit a bullet with a bullet, when it successfully conducted the first kinetic kill intercept of an ICBM reentry vehicle.

1 July 1984 The ERIS Project Office was established.

15 August 1984 The GPS, Ground Antenna and Monitor Station became operational.

15 August 1984 Army Space Council received charter.

1 October 1984 The Army Staff Field Element was activated at the direction of the Vice Chief of Staff of the Army. Located at the Space Command headquarters, this five-person group was to (1) "formulate Army policy pertaining to space and future participation in a Unified Space Command", (2) "exchange information pertaining to space policy, strategy and plans", (3) "monitor space-related education and training developments for Army use", (4) "represent the

Army Space Office at HQ Space Command", and (5) provide technical information to Space Command concerning Army space efforts, as appropriate and required."

4 October 1984 The Army Space Council, chaired by the Vice Chief of Staff of the Army met to discuss the Army's emerging role in space. They produced guidance for future Army efforts, the Army Space Personnel Program.

11 December 1984 Secretary of the Army approved the AOA Program Charter.

1985

January 1985 The Training and Doctrine Command directed the Combined Arms Center to establish a space directorate at Fort Leavenworth, KS. This six person unit was tasked with developing concepts, doctrine and operational requirements for the use of space to support Army operations.

26 March 1985 Secretary of Defense Caspar Weinberger invited Allied participation in the BMD program.

May 1985 The DCSOPS established the Army Space Initiative Study Group.

5 June 1985 Army published the Army Space Policy. The Office of the DCSOPS in a press release stated "that the Army will exploit space in order to enhance the capabilities of all Army elements at tactical, operational, and strategic levels of war. Of greatest interest are the abilities of space systems to provide: Reliable communications over great distances, products of observation of the earth's surface, extremely precise positioning navigation, and continuous monitoring of terrestrial environmental conditions.

1 July 1985 The USASDC was created as a field-operating agency of the office of the Army Chief of Staff. In January, the BMDATC and the BMDSCOM officially dissolved into the framework of USASDC. The position of BMD PM remained unchanged.

August 1985 The DA published Interim Space Operational Concept.

22 September 1985 The Secretary of Defense created the unified U.S. Space Command at Peterson AFB, Colorado Springs, CO. This organization is responsible for space operations, surveillance, early warning, and BMD operational planning. Concurrent with this decision, the Army Staff Field Element was re-designated the Army Space Planning Group, under the operational control of Commander, U.S. Space.

14 November 1985 Citizens of the Republic of the Marshall Islands protested the renewal of the lease by the U.S. by occupying Meck, Omelek, and Eniwetak Islands. This action began six months of demonstrations.

18 November 1985 Secretary of the Army, John O. Marsh, Jr., signed the charter for the HEDI Project Office.

December 1985 The SDIO assigned USASDC the task of developing TMD architectures.

13 December 1985 Army Space Initiative study published. The recommendation of these 30 officers, led by Brigadier General William G. Fiorentino, in conjunction with the RAND-ARROYO Study entitled "Army Master Plan for Space," reputedly led to the organization of the provisional Army Space Agency.

1986

14 January 1986 President Ronald Reagan signed the Compact of Free Association with the Republic of the Marshall Islands.

7 February 1986 The BMD Radar Project Office became the Terminal Imaging Radar Project Office.

21 February 1986 DoD Directive 5141.5 established the SDIO as an agency of the DoD. Its mission was to "manage and direct a vigorous research program, including advanced technologies, which will provide the basis for an informed decision regarding the feasibility of eliminating the threat posed by nuclear ballistic missiles of all ranges, and of increasing the contribution of defensive systems to U.S. and allied security. They were also directed to "protect the near-term deployment of limited ballistic missile defense." Programs are to be conducted in consultation and, where appropriate, participation of our allies. The SDIO program was to be conducted in compliance with existing treaties and will emphasize "non-nuclear technologies." Directive 5141.5 issued on 4 June 1997 replaced this document.

21 February 1986 General Orders 5 established the USASDC. The effective date for this transition was 1 July 1985.

27 March 1986 West Germany initiated SDI research. Italy became the second European country to undertake SDI research on 19 September 1986.

29 April 1986 The ALTAIR tracked its 100,000 deep-space satellite.

7 May 1986 The KMR became the U.S. Army Kwajalein Atoll

2 June 1986 U.S. Army Training and Doctrine Command assigned 3Y (space activities) proponency. On the same date, TRADOC established the Army Space Institute (Provisional) at Fort Leavenworth, KS, from the former CACDA Space Directorate. The institute was established as an integrating center for space-related developments. In December 1990, TRADOC downsized the program, renaming it the TRADOC Program Integration Office Space/Army Space Institute.

20 June 1986 The DCSOPS was designated the space lead within the Army staff with the creation of the Space Division, Space and Special Weapons Directorate.

30 June 1986 The Secretary of Defense directed the SDIO to "explore, the specific ways in which the U.S. led SDI research program can assist the NATO extended air defense effort in which the Europeans are taking a leading role".

July 1986 "USCINCSPACE recommended to the Chief of Staff, Army, that the Army take a more active role in space and that as initial step, the Army Component assume operational and maintenance responsibility of the DSCS GMFSC and MSQ-114 functions."

15 July 1986 The GBFEL Project Office was created at WSMR, NM.

1 August 1986 U.S. Army Space Agency (USASA), formerly the Army Space Planning Group, was provisionally activated. It was the Army component of the USCINCSPACE and a FOA of DCSOPS. August was selected because of its historical significance the first research and development Redstone missile, which first put Americans into space, was flight tested at Cape Canaveral, FL, on 20 August 1953.

18 August 1986 The Kwajalein Battlefield was dedicated as a national landmark.

October 1986 The Chief of Staff of the Army directed a joint U.S. Army Information Systems Command and USASA working group to study the feasibility of transferring the DSCS mission.

November 1986 At a meeting of the Army Space Council, the Vice Chief of the Army stated that most of the Army was not aware of space capabilities. He directed that a Space Demonstration Program be initiated with the goal of demonstrating enhanced AirLand Battle execution using space based assets to Army units.

1987

January 1987 The DSCS Command and Control Concept outlined. It includes a chain of command that runs from JCS, through U.S. Space Command to USASA, technical direction of DCA.

5 January 1987 The Multinational Programs Office initiated the TMD Architecture Study, which involved American, German, French, Italian, British, and Israeli corporations.

5 January 1987 The USASA's NASA Detachment was established at Johnson Space Center, Houston, Texas. Army astronauts and other Army personnel working at NASA are assigned to this unit. The detachment is under the operational control of the NASA with administrative control exercised by ARSPACE.

February 1987 An MOU signed by USAISC and U.S. Army Space Agency detailed operational control and transfer of GMFSC managers at Regional Satellite Support Centers (RSSCs). The MOU established the responsibilities and relationships and the two commands with regard to the transfer of operational control of the DCSOC functions worldwide.

March 1987 The DoD issued a new Space Policy, revising the 1982 version. The changes include: the addition of the SDI program; the revision of the nation's launch philosophy to include expendable launch vehicles; the successful testing of the anti-satellite system against an object in space, the formation of unified and service commands for space, the emergence of commercial space enterprises and the initiation of a manned space station program with international involvement, the increasing commitment on the part of other nations towards space exploitation and the stringent funding constraints imposed by budget limitation legislation. "Space is recognized as medium within which the conduct of military operation in support of our national security can take place, and similarly from which military space functions of space support, force enhancement, space control and force application can be performed."

4 June 1987 William Taft IV, Deputy Secretary of Defense, issued Directive No. 5141.5 re: SDIO. This document lays out the mission, organization and management, and functions and responsibilities for the SDIO, as well as relationships and authorities. While the mission remained unchanged, this document revised the overall supervision of the SDIO from the Secretary to the Deputy Secretary of Defense. Other changes can be found, for example, in the composition of the SDI Executive Committee, which provided DoD oversight and guidance for the SDI program, in the functions of the Director, etc. The document supersedes Directive 5141.5 of 21 February 1986.

August 1987 The DCSOPS approved five programs submitted by the Army Space Institute, et al, for the initial Army Space Demonstration Program. The goal of the program was "to demonstrate the capabilities of space systems to provide support to tactical units in the Army." The programs were SLGR, GPS Azimuth Determination System, WRAASE Weather Receiver, LIGHTSAT, TMD Command and Control Missile Detection.

September 1987 Secretary of Defense Cooper Weinberger approved the SDS Phase I baseline architecture and authorized six components of SDI to enter Dem/Val after a DAB recommendation. These included a SBI, a GBI, a ground-based sensor, two space-based sensors, and a battle management system.

16 September 1987 TRADOC established 3Y standards.

1 October 1987 The USASA was established under General Orders 7, dated 15 March 1987. The USASA was the Army component of the U.S. Space Command and a Field Operating Agency of the DCSOPS, DA. The USASA provided USSPACECOM an Army perspective in planning for DoD space system support to land forces and for strategic defense.

8 December 1987 American President Ronald Reagan and Soviet General Secretary Mikhail Gorbachev signed the Intermediate Range Nuclear Forces Treaty. This agreement mandated the removal of 2,611 intermediate range nuclear missiles from the European continent. The Senate ratified the treaty on 27 May 1988, by a vote of 95-5.

1988

6 January 1988 At the request of the Assistant Secretary of the Army, the U.S. Army Materiel Command established a technology manager to manage the near and possible far-term space R&D programs and to provide a developer focus both within the Army and with outside agencies the Army Space Technology and Research Office.

19 January 1988 In a speech to the Arms Control Association, Senator Sam Nunn (D-GA) called for a reorientation of the SDI program. Specifically, he advocated focusing the SDI program first on developing a "limited system for protecting against accidental and unauthorized missile launches." The long-range goal would be to develop a more comprehensive defensive system.

February 1988 The JCS approved the MILSATCOM Command and Control Concept (MJCS-11-89), which aligned the DCSC Operations Control System under Commander, U.S. Space to the Army Component and included GMFSC- RSSCs, DSCSOCs/MSQ-114, and CDOCS. The RSSCs would be collocated with the Defense Communications Agency in Washington DC, Wheeler AFB, HI, and Vaihingen, Germany.

3 February 1988 President Ronald Reagan's National Space Policy updated. This policy reaffirmed committed to exploration and addressed civil, military and commercial space had been approved by Reagan on 5 January 1988. The Presidential Directive established the following goals:

To strengthen the security of the United States;

To obtain scientific technological and economic benefits for the general population and to improve the quality of life on Earth through space related activities;

To encourage private sector investment; To promote international cooperative activities taking into account U.S. security, foreign policy, scientific and economic interests;

To cooperate with other nations in maintaining the freedom of space for all activities that enhance the security and welfare of all mankind; and,

To expand human presence and activity beyond Earth orbit into the solar system.

The following principles would guide these goals: (1) The U.S. is committed to the exploration and peaceful use of outer space for the benefit of all mankind. Peaceful use allows for activities in pursuit of national security goals. (2) The U.S. will pursue activities in support of its right of self defense and defense of its allies. (3) The U.S. rejects any claim of sovereignty over outer space or celestial bodies. (4) The U.S. considers the space system of any nation to be national property. (5) The U.S. encourages the commercial use and exploitation of space technologies. (6) The United States will conduct international cooperative space related activities that arte expected to achieve sufficient scientific, political, economic, or national security benefits for the nation.

7 April 1988 U.S. Army Space Command activated, as the Army component to the U.S. Space Command. The ARSPACE was created to provide an Army perspective in planning for DoD space system support to land forces and strategic defense operations. Responsibility for the operation of the DSCS Operations Centers transferred to ARSPACE from the Information Systems Command. The ARSPACE remained a Field Operating Agency of the DCSOPS.

The mission for the newly created organization was "As the Army component provide USSPACECOM an Army perspective in planning for DoD space system support to land forces and strategic defense operations. Ensure integration of Army requirements into USSPACECOM planning for space support. Respond to USCINCSPACE directed taskings. Conduct planning for DoD space operations in support of Army strategic, operational and tactical missions."

22 April 1988 The Institute of Heraldry approved the ARSPACE request for a shoulder sleeve insignia and a distinctive unit insignia. ARSPACE received an exception to policy, based on "the high visibility, which surrounds the Army's potential military role in space and the Army Space Command's projected growth."

1 October 1988 The ARSPACE's Ground Mobile Forces Satellite Communications MFSC managers formally activated the RSSCs planning and management cells. The planning cells support the Unified and Specified CINCs with GMF access on the DSCS.

5 October 1988 Lieutenant General Robert Hammond, Commander, USASDC, was appointed PEO for Strategic Defense. The appointment was made under the direction of President George Bush through National Security Directive 219, by Secretary of the Army Michael P.W. Stone. With this position, Lieutenant General Hammond reported directly to the Army Acquisition Executive.

14 November 1988 The GSTS Project Office was established.

1989

February 1989 The MOU signed by USAISC and ARSPACE detailed the remainder of the DSCS mission transfer.

9 February 1989 President George Bush announced in a Joint Session of Congress that he will "vigorously pursue" the SDI.

27 February 1989 The Kinetic Energy Antisatellite (KE ASAT) JPO was established in Huntsville. Brigadier General J. Morgan Jellett headed the organization.

6 March 1989 The Directed Energy portion of the Anti-Satellite Acquisition Decision Memorandum tasked the Army to develop the prime candidate for the DE ASAT weapon based upon the Army-managed, SDIO GBFEL Technology Integration Experiment. The Air Force was tasked to develop a candidate based on alternate technologies.

14 June 1989 Following a three-month general review of the U.S. national defense strategy, ordered by President George H.W. Bush, the President "concluded that the goals of the SDI program were generally sound."

July 1989 The JCS validated the USCINCSPACE Tactical Event Reporting (TERS) mission requirement, following the successful completion of tests showing the "utility of the

concept." The ARSPACE role was to monitor the TERS via its constant source equipment located at the ARSPOC.

August 1989 Memorandum sent to the SDIO Director, signed by General Robert Riscassi, Vice Chief of Staff, "[prioritized] Army research needs for capabilities to protect critical assets and forces from attack by non-nuclear tactical ballistic missiles." The priorities were as follows: High Altitude Area Defense, Contingency Forces Defenses, Chemical Defense, Survivability, BM/C3I, and Launch Point Detection.

September 1989 The Army Space Demonstration Program delivered over 100 WRASSE weather receivers to units worldwide. These receivers, which receive data from U.S., Soviet, Japanese and European civil satellites, were the first product of this new program, created by Vice Chief of Staff of the Army General Maxwell Thurman in November 1986.

2 November 1989 President George Bush approved a new national space policy. "The policy reaffirmed the nation's commitment to the exploration and use of space in support of the U.S. national well being. The policy recognizes that leadership in space activities and capabilities requires preeminence in key areas It also retains the long-term goal of expanding human presence beyond Earth orbit into the Solar System." The overall goals of U.S. space activities are: (1) To strengthen the security of the U.S. (2) To obtain scientific, technological and economic benefits for the general population and to improve the quality of life on Earth. (3) To encourage continuing U.S. private sector investment in space and related activities. (4) To promote international cooperative activities. (5) To cooperate with other nations in maintaining the freedom of space for all activities that enhance the security and welfare of mankind. (6) To expand human presence and activity beyond earth's orbit into the Solar System."

December 1989 The Army is given lead in the ASAT JPO.

1990

15 March 1990 Ambassador Henry Cooper submitted the results of his independent study of the SDIO program. President George Bush had commissioned the study to examine the strategic requirements for a "'new world order.'" Ambassador Cooper "endorsed the concept of Brilliant Pebbles and spelled out the concept that became the GPALS."

26 July 1990 The Army Space Council approved the USASDC's proposed Army Tactical Surveillance Satellite (ATSS) program. The objective of the ATSS was to provide the tactical commander with a responsive, launch on demand, dedicated satellite furnishing real-time surveillance and targeting information.

9 August 1990 The ARROW had its first flight test

18 September 1990 First flight test of the Airborne Surveillance Testbed conducted.

1 October 1990 Congress directed the restructuring of the MILSTAR satellite program to emphasize its communications and support to tactical users. Accomplishing this task required

the development of a smaller lightweight and more cost effective terminal. The MILSTAR is a joint service communications system.

1 October 1990 Effective date for the transfer of the High Energy Laser Systems Facility (HELSTF), from AMC to the USASDC, by the Secretary of the Army. It is to operate as a National Research and Test Facility.

1 October 1990 The ARSPACE assumed the DSCS world-wide operations and maintenance mission from USAISC.

9 November 1990 The Under Secretary of Defense for Acquisition assigned to SDIO the responsibility for the Defense Department's centrally managed TMD program.

16 November 1990 DA Memorandum 5-3, Management of Space and Special Weapons, established an ASWG. Its purpose was to support the Army Space Council. Initially, it provided feedback and concurrence to the ASEDP proposals and provided information and recommendations on space issues to the HQDA focal point for space, Director of Space and Special Weapons, ODCSOPS. In 1993, it was reorganized as the ASEWG.

1991

January 1991 All TMD functions were assigned to the USASDC. The JTMD Management Office, formerly a part of MICOM, was united with the USASDC's TMD Applications Project Office.

18 January 1991 An anti-missile missile intercepted and destroyed a ballistic missile under combat conditions on this date during the Gulf War. A Patriot air defense missile destroyed an Iraqi Scud missile that was attacking a U.S. air base in Saudi Arabia. A reporter for the *Los Angeles Times* wrote: "The age of "Star Wars" had arrived".

28 January 1991 The ERIS FTV-01 successfully intercepted a target in the exoatmosphere. This was "the first SDI experiment which successfully intercepted an exoatmospheric reentry vehicle in a countermeasures environment."

29 January 1991 President Bush announced, in his State of the Union Address, that the SDIO program would shift its focus from defense against a massive Soviet missile attack to the GPALS concept, Global Protection Against Limited Strikes. Specifically, Bush stated: "I have directed that the SDI program be refocused on providing protection from limited ballistic missile strikes, whatever their source." He added, "let us pursue an SDI program that can deal with any future threat to the U.S., to our forces overseas and to our friends and allies."

29 April 1991 Mr. Alan Sherer, HEDI Project Manager, was the first civilian to be named Project Manager of the Year.

18 June 1991 The LEAP test was successfully completed.

31 July 1991 The U.S. and the U.S.S.R. signed the START I. The Senate ratified this document on 23 May 1992. This Treaty reduced the strategic offensive arms for both the U.S. and the Soviet Union. When fully implemented the ICBMs, SLBMs and heavy bombers of the U.S. and Russia would be reduced to 1,600 with no more than a total of 6,000 attributed warheads in the arsenal of either side. Former Soviet republics signed on to the treaty with the Lisbon Protocol in May 1992.

22 August 1991 First full scale satellite lethality experiment using a high energy laser was successfully completed. This test, conducted at HELSTF, verified the effects of high energy lasers on prospective targets, permitting accurate determination of the size and power required for a DE ASAT weapon system.

5 December 1991 President George Bush signed H.R. 2100, the "National Defense Authorization Act for Fiscal Years 1992 and 1993." That portion of H.R.2100 dealing with missile defenses was known as the Missile Defense Act of 1991. This act required the DoD to "aggressively pursue the development of advanced TMD systems, with the objective of down selecting and deploying such systems by the mid-1990s." Additionally, DoD was to "develop for deployment by the earliest date allowed by the availability of appropriate technology or by fiscal year 1996 a cost effective, operationally effective, and ABM Treaty-compliant antiballistic missile system at a single site as the initial step toward deployment of an antiballistic missile system.

8 December 1991 The leaders of Russia, Ukraine and Belorussia proclaimed the Soviet Union had ceased to exist. They declared the creation of a Commonwealth of Independent States and invited other republics to join them.

1992

13 January 1992 Russia announced its succession to the Soviet Union in all treaties.

1 May 1992 Ambassador Henry Cooper, SDIO Director, concluded the MOA with the secretaries of the military services which "established the organizational structures and procedures for handling the acquisition of the GPALS system as DoD moved ahead with deploying missile defenses in accordance with instructions contained in the Missile Defense Act of 1991."

June 1992 Vice Chief of Staff of the Army and Chief of Staff of the Army approved the Army Strategic Defense realignment which produced the U. S. Army Space and Strategic Defense Command (USASSDC). Included in this proposal was the designation of the ARSPACE as the "'user' for the deployment of the ground based elements of the NMD Program."

24 August 1992 The USASDC separated into the PEO for Global Protection Against Limited Strikes (PEO-GPALS) and the USASSDC. The PEO-GPALS, was a union of the USASDC Project Offices GBI, GBR, GSTS, TMD, etc), and the PEO Air Defense from MICOM (Memorandum of Agreement, 28 July 1992). The ARSPACE, formerly a field

operating agency of the office of the DCSOPS became a subordinate command of the USASSDC, a field-operating agency of the Chief of Staff.

1 October 1992 The USASSDC assumed higher headquarters funding responsibility for the ARSPACE, and expected to have this relationship expanded in the future.

2 October 1992 The Department of the Army designated ARSPACE as the responsible agent for the Milstar Network Management and Control. Duties included ensuring that the Joint MILSTAR tool is functionally designed to support Army battlefield requirements and operational conditions.

9 October 1992 The Bishkek Agreement. The Commonwealth of Independent States signed an agreement pledging to support and implement the ABM Treaty.

25 November 1992 The Army terminated the GSTS Project Office.

December 1992 The ARSPACE began to support American forces involved in Operation RESTORE HOPE (Somalia) with space based products.

1993

3 January 1993 American President George Bush and Russian President Boris Yeltsin signed the second START II, during a Moscow Summit. It was to be implemented on 1 January 2003, following the ratification by the U.S. Senate on 26 January 1996. This agreement reduced the number of attributed warheads to an actual total of 3,500, down from 6,000. It also bans land-based multiple warhead ICBMs from both arsenals. A protocol to the treaty was negotiated at the Helsinki Summit in March 1997 and later signed by both parties on 26 September 1997 in New York City. This protocol extends the implementation deadline from 31 December 2003 to the same date in 2007; adds an agreement to begin negotiations on START III to further limit warheads to 2,000-2,500 as soon as START II enters into force; and eliminates the 31 December 2003 deadline for deactivation of all delivery vehicles. The Russian Dumas adopted the Bill of Ratification for the protocol on 14 April 2000. The U.S. Senate has not ratified the Helsinki agreements, which amended both the START and ABM treaties.

28 January 1993 The first campaign of the TCMP – TMD Critical Measurements Program was completed at USAKA. The TCMP program was a product of Operation Desert Storm and the recognized need to gather data on “threat-like missiles” and improve the effectiveness of TMD systems.

13 May 1993 Secretary of Defense Les Aspin announced that with the end of the Cold War, the U.S. was no longer threatened by a massive attack from the Soviet Union. The new concern was theater ballistic missiles controlled by Third World dictators, or "hostile or irrational states that have both nuclear warheads and ballistic missile technology that could reach the U.S."

In response to these changes, the SDIO was reorganized and renamed the BMDO to reflect a new focus in DoD’s missile defense program. As part of the reorganization, the BMDO

will now report to the Under Secretary of Defense for Acquisition, rather than directly to the Secretary.

14 May 1993 Official opening of the DSCS – Operations Center in Fort Buckner, Okinawa, Japan.

24 May 1993 Mr. George Dausman, Army Acquisition Executive authorized the PEO-GPALS to be renamed PEO for Missile Defense.

28 May 1993 Lieutenant General William Forster, Military Deputy to the Assistant Secretary of the Army RDA, transferred the Army Space Technology Research Office (ASTRO) from the Communications-Electronics Command to the USASSDC. This transfer was made "as part of the Chief of Staff of the Army's initiative to apply sharpened focus and increased emphasis on supporting warfighters with space applications." Later in fiscal year 1993, the ASTRO became the Space Applications Technology Program.

1 July 1993 General Orders 13 designated USASSDC as the Army's focal point for space.

20 August 1993 Kwajalein converted to the west side of the international date line at midnight. As a result, Kwajalein is one calendar day ahead of Hawaii and the U.S. mainland, but is the same day as Majuro and Guam.

19 October 1993 Lieutenant General John Costello, CG USASMDC, appointed the ARSPACE Commander to the position of SMDC Deputy Commander – Space.

1994

11 February 1994 The Army System Acquisition Review Council selected the ERINT to be the missile in the Patriot PAC-3 TMD program, over the Patriot multi-mode missile. Four days later the ERINT hit a ballistic missile target vehicle in a test conducted at WSMR.

4 April 1994 Director of the Army Staff, Lieutenant General Charles E. Dominy, approved the USARSPACE Concept Plan for resourcing manpower requirements for NMD planning, Joint Tactical Ground Station (JTAGS) operations, and Contingency Space Operations now Army Space Support Teams (ARSST).

18 April 1994 The CG announced the new USASSDC Huntsville organizational structure. The principal directorates/bodies were: Executive Director, Advanced Technology, Sensors Technology, Weapons Technology, Engineering and Systems, and Targets, Test and Evaluation. The Directorates for Survivability, Lethality and Key Technologies, DEW and KEW were dissolved into the Weapons Technology Directorate. Similarly, the Battle Management/Command, Control and Communications Directorate became a part of the new Engineering and Systems organization.

24 April 1994 First flight test of the Hera, developed as a target for the THAAD.

19 May 1994 The DAB approved the PAC-3 system upgrade and validated the selection of the ERINT as the new PAC-3 missile.

June 1994 The Rapid Optical Beam Steering System (ROBS) successfully acquired and retargeted the ERINT during tests against an MQM-107D at WSMR. The ROBS is a transportable sensor system that integrates passive and active optical sensors and can track and image up to 50 targets at the same time.

14 June 1994 Deputy Secretary of Defense John Deutch issued Directive 5134.9 re: BMDO which defined the new missions. In addition, DoD oversight transferred from the Deputy Secretary of Defense to the Under Secretary of Defense for Acquisition and Technology. This Directive replaced DoD Directive 5141.5 issued on 4 June 1987.

20 June 1994 Vice Chief of Staff of the Army General J.H. Binford Peay III signed a charter making the CG of USASSDC the TMD Advocate, to serve as the Department's focal point and coordinator for operational aspects of TMD.

July 1994 Army Space Policy issued. It states, in part, that "The Army's future is inextricably tied to space."

1 July 1994 The Army Space Program Office (ASPO), a field agency of the Office of the DCSOPS, DA, transferred to USASSDC. The ASPO, created in 1973 as a Field Operating Agency of the Office of the DCSOP, executes the TENCAP in accordance with the approved ASPO Charter. This transfer was executed under General Orders 17, dated 15 December 1995.

11 July 1994 In the wake of severe flooding in the southeastern United States, the command provided support to the Federal Emergency Management Agency and the Alabama and Florida National Guards with emergency response efforts. Using the same technology used for siting missile defense systems, three teams from the Engineering and Systems Directorate ensured that maps were accurate and reflected the changing weather conditions on a daily basis. The USASSDC Disaster Relief Planning Team subsequently hosted 23 medical emergency planners from 12 former Warsaw Pact nations to address civil-military exercises for emergency planning under the NATO Partnership for Peace program.

August 1994 The ARSPACE assumed a new mission, Contingency Operations (Space) or COPS. Under this mission, they will "provide worldwide space operations support to Army forces during operations as well as other-than-war contingency missions such as floods, earthquakes, and humanitarian support. This mission would become the Army Space Support Teams. Two teams will provide on-site assistance to deployed troops or will train unit members and provide to equipment. The COPS teams resulted from an ARSPACE from the ASEDP and recognized need to make equipment available for contingency operations.

13 September 1994 The HELSTF concluded the first High Energy Laser Light Opportunity (HELLO 1). This made continuous megawatt-class laser light available and affordable for the first time ever to American researchers.

27 September 1994 In their "Contract with America" pre-congressional election platform, 350 Republican candidates for the U.S. House of Representatives pledged to deploy both ABM and TMD systems.

28 September 1994 Washington Summit "At a meeting in Washington, U.S. President Bill Clinton and Russian President Boris Yeltsin [issued] a joint statement noting that they have "agreed on the fundamental importance of preserving the viability and integrity of the ABM Treaty." The two presidents also noted that "both sides have an interest in developing and fielding effective theater missile defense systems on a cooperative basis. The presidents agreed that the two sides will conduct a joint exercise of TMD and early warning. This exercise would contribute to providing a basis for U.S. and Russian forces to operate together, for example, in peacekeeping operations."

1 October 1994 The USASSDC, as the executive agency for the BMDO, assumed custody of Wake Island. The BMDO and USASSDC have been operating on the island since 1988, when launch and support facilities were constructed for the STARBIRD program. Full transfer never took place due to issues with the environmental conditions on the island.

13 December 1994 The Director of the Army Staff, Lieutenant General Charles E. Dominy, approved the USARSPACE Concept Plan for Directed Military Overstrength Manning of the Army Theater Missile Defense Element (ATMDE), Tactical Operations Center (TOC).

1995

1 January 1995 The ARSPACE officially activated the Army Space Support Teams and teams began to deploy to the field to provide space support enhancement. Originally there were three ARSSTs, each aligned with a Combatant Command. Over the course of the year, a team was forward-deployed at Ft. Bragg to satisfy the heavy demands for support made by the XVIII Airborne Corps and special operations units.

10 January 1995 The HELSTF lased replicas of Scud missile fuel tanks to conclude a series of tests in support of the Air Force airborne laser program. The tests which began on 4 October 1994, allowed "engineers to experiment with the power of the laser and the spot-size of the beam."

16 January 1995 The USASSDC established the Missile Defense Battle Integration Center (BIC). The aim of the BIC was to connect the four elements of TMD - active defense, passive defense, attack operations, and battle management, command, control and communications.

1 February 1995 The USASSDC organization in Huntsville reorganized. The five directorates (Advanced Technology, Sensors, Systems, Targets, Test and Evaluation and

Weapons) and the Cost Analysis Office, the Program Integration Office, the PAO and the Staff Action Control Office combined to form the Missile Defense and Space Technology Center (MDSTC). This name change reflected the roles and missions of the Huntsville organization. It also underscored Huntsville's reputation as a national center of excellence for missile defense and recognized plans to expand Huntsville's role in the Army space mission. The mission for the Tech Center is "to continue as the Nation's research and development hub of space and missile defense technology excellence."

13 February 1995 The TMD Force Projection Tactical Operations Center (FP TOC) made its debut at the Pentagon. The USASSDC built the TOC to address a need envisioned by then Army Chief of Staff, General Gordon Sullivan, to provide "overarching command and control capability for the TMD fight."

21 April 1995 First flight/propulsion test of the THAAD interceptor. All test objectives were achieved to include "missile launch, booster performance, booster/kill vehicle separation, KV shroud separation, radar-to-missile communication, and flight/seeker environmental data collection."

May 1995 The Synthetic Theater of War for TMD (STOW-TMD) was first used during the Army's Roving Sands Exercises.

1 May 1995 The U.S. Army converted the MILSATCON Directorate of the ARSPACE into the 1st SATCON Battalion. The battalion plans and controls the payload of the DSCS satellites. Formed from those ARSPACE elements responsible for the DSCS, the SATCON is composed of the Fort Detrick DSCSOC Detachment now A Company, Fort Meade DSCSOC Detachment B Company; Landstuhl DSCOC Detachment C Company, Camp Roberts DSCSOC Detachment D Company and Fort Buckner DSCSOC Detachment E Company. This is the first battalion, in the history of the Army whose operational mission is directly tied to the control of space systems and capabilities.

6 May 1995 General Dennis Reimer, commander of Forces Command and the next Army Chief of Staff, visited White Sands to cut the ribbon on the first JTAGS.

11 May 1995 The TRADOC and USASSDC (the BIC) established an MOA which "[described] how TRADOC and USASSDC would jointly work together regarding materiel development, analytical and/or simulation capabilities." In addition, the USASSDC was made a voting member of the Battle Lab Board of Directors.

July 1995 The BIC tested a new long-wavelength, infrared seeker the beryllium, cryogenic off-axis telescope (BeCOAT) in a radiation environment. This test, the culmination of a five-year effort, was the first demonstration of a seeker in a radiation environment. The seeker will be able to withstand the radiation effects experienced in near-outer and outer space environments.

1 July 1995 The Office of the Deputy Assistant Secretary of the Army (Procurement), Dr. Kenneth Oscar, designated the USASSDC Contracting and Acquisition Management Office as an Army "Contracting Test Bed for Acquisition Streamlining." The CAMO is the first and only Army contracting office thus designated. The office was also granted a "no protest" provision that allows offerors to voluntarily submit statements that they will refrain from protesting certain agency errors.

20 July 1995 *Field Manual 100-18* – Space Support to Army Operations published. This FM "established doctrine for the Army's use of space, enumerates current space system capabilities, and provides guidelines for the use and application of space capabilities that support Army operations."

October 1995 The USASSDC Sensors Directorate announced the development of Blue October, a user-friendly, high-technology computer simulation tool. The program permits engineering and simulation work to be accomplished at a desktop computer.

October 1995 The ARSST 1 members were deployed to Egypt to support Bright Star with satellite technologies.

November 1995 The Force Protection Tactical Operations Center (FP-TOC) made its first overseas deployment for Bright Star '95. The FP-TOC brought communications, imagery, weather, terrain analysis, intelligence and early warning systems, into a single suite for the theater commander.

1 November 1995 Proposed date for the USASSDC takeover of the War Breaker facility, developed by ARPA. With the creation of the BIC, the USASSDC required a "local center that can link via the Distributed Interactive Simulation net to the Huntsville facility and with other centers of excellence in Advanced Distributed Simulation throughout the continental United States."

10 November 1995 Secretary of the Army Togo West designated USASSDC a Reinvention Laboratory. The command was given the authority to waive DA regulations and DoD Initiatives, with justification and legal review. The purpose is to develop new and innovative business practices, streamlining the process.

14 November 1995 Army Space Executive Working Group charter issued. The charter identified the Chief, Space Integration Division, as the Chairman of the ASEWG. The Force Development Integration Center (FDIC) assumed this position upon the designation of USASMDC as the Army's specified proponent for space on 1 October 1997.

December 1995 The first units were equipped with PAC-3 Configuration 1, the first true PAC-3 system. It fields a number of improvements, especially in BMC3I and incorporates the Guidance Enhanced Missile (GEM).

14 December 1995 It was announced that a Tiger Team had been created to establish the Missile Defense and Space Technology Center as a Center of Excellence for BMDO. They had already identified five areas in which "MDSTC is the undisputed world leader in missile defense technology." These were Kinetic Energy Hit-to-Kill weapons; Lethality; Discrimination/ Phenomenology; Targets Development/Range Support; and, Radar/Ladar. As the BMDO Center of Excellence for Missile Defense, "the MDSTC would form joint product teams, evaluate service needs, and recommendation BMDO how future work should be performed." If selected a BMDO Center of Excellence, the MDSTC would serve as a clearing house in the five areas listed above assessing studies, referring proposals to related programs, permitting/denying start-up of a project. The design is to avoid duplication among the services.

1996

11 January 1996 Under Secretary of Defense for Acquisition and Technology Dr. Paul Kaminski directed the Army to form a joint program office and initiate an aerostat program. Operational control of this program was assigned to the USASSDC.

February 1996 The ASPO provided intelligence gathering support to the peace mission in Bosnia.

9 February 1996 The Nautilus program, using the Mid Infrared Advanced Chemical Laser HELSTF at WSMR, demonstrated the effectiveness of a Tactical High Energy Laser (THEL) with an intercept of a short-range rocket in flight. This was the first time that a laser had destroyed rocket in flight.

March 1996 The MDBIC Spatial Weapons System Analysis Center supported the Dayton Accord discussions with calculations to determine the impact of proposed demarcation lines.

11 May 1996 Secretary of Defense William Perry announced that the DoD had committed to work with the government of Israel to develop an Advanced Concepts Technology Demonstration for the THEL. The THEL is a joint U.S.-Israeli project to develop a tactical laser for Israeli use against enemy short-range rockets, e.g. the Katyusha rockets. This decision was based in part on the successful Nautilus test.

24 June 1996 The U.S. and Russia concluded a TMD demarcation agreement. This arrangement was described as "an initial agreement distinguishing between defenses against strategic ballistic missiles [ABM systems] … and certain defenses against non-strategic ballistic missiles, i.e., so-called 'lower-velocity' TMD. This agreement will make clear that all TMD systems with interceptor velocities up to and including 3 kilometers/second are permitted under the ABM Treaty, so long as they are not tested against target missiles with velocities above 5 kilometers/second or ranges greater than 3,500 kilometers. The sides will continue discussions on demarcation of higher-velocity TMD systems."

12 July 1996 Vice Chief of Staff of the Army General Ronald H. Griffith designated USASSDC a stand-alone Army Component Command. The HQDA Redesign Functional Area

Assessment had recommended realigning USASSDC with TRADOC. General Griffith found, however, that the USASSDC was unlike other Army organizations and its functions did not integrate well into any of the current major commands.

12 July 1996 The USASSDC was designated an Army Component Command.

18 July 1996 The Program Executive Office, Missile Defense officially became the PEO Air and Missile Defense.

20 August 1996 The ARROW-2, a two-staged missile, successfully intercepted a simulated SCUD missile. These tests completed the ARROW Continuation Experiments.

16 October 1996 Red Tigress III launched a sounding rocket experiment from Wallops Flight Facility, VA. The test included 17 experimental payloads.

1997

21 January 1997 U.S. Senate Majority Leader Trent Lott (R-MS) and 25 co-sponsors introduced the NMD Act of 1997. This act required the U.S. to deploy a NMD system by the end of the year 2003. In contrast, the Clinton administration's "3-plus-3" program required the U.S. to develop an NMD system by 2000, at which point all ballistic missile threats to the U.S. would be evaluated and a determination made as to whether or not such a system should be deployed by 2003.

8 February 1997 The Willow Dune program successfully launched a Scud ballistic missile target from the KMR, the first operation of this kind at a U.S. test range.

18 February 1997 The USASSDC signed an MOA with TRADOC, which made the command the Army Specified Proponent for Space and NMD and the overall Army integrating command for TMD. The command would now determine space requirements for TRADOC approval and lead integration of DTLOMS solutions across the Army and within appropriate joint agencies. The FDIC was created to execute these new tasks. The Battle Lab was another product of this agreement. The MOA chartered the command to establish the battle lab to plan and conduct space and missile-defense warfighting experiments.

19 February 1997 The first JTAGS unit fielded in Stuttgart, Germany.

March 1997 An MOA between the USA and the USAF signed by General Dennis Reimer and General Ronald Fogelman outlined the responsibilities of the two services with regard to NMD.

14 March 1997 The THEL Test 8A was conducted demonstrating tracking and lasing against multiple in-flight targets.

17-19 March 1997 Demonstration of the Low Earth Orbit Communications (LEOCOMM) during Gold Spear in Tampa, FL.

1 April 1997 The BMDO established the JPO-NMD. The JPO provides management oversight for NMD program elements and is responsible for the design, development, and demonstration of an NMD system to defense the U.S. from ballistic missile attack by 2003.

5 May 1997 Lieutenant General Eric Shinseki, DA DCSOPS, signed a letter of Promulgation for the Charter designating the Headquarters, USASMDC as Army Implementing Agent for the Strategic Arms Reduction Treaty (START) and START II Implementation.

27 May 1997 The second JTAGS unit was fielded at Osan AFB, Korea in support of the warfighting commander in chief. Speaking at the dedication ceremony, Lieutenant General Joseph Hurd, Osan AFB Commander, noted the joint nature of this endeavor, remarking "You are an Army element commanded by a Navy lieutenant, with half-Army half-Navy crew, operating on an Air Force Base." This first unit was fielded in Germany. These two systems replaced prototypes that had been in the field for about 36 months.

June 1997 The USASSDC established the Space Technology Integration Office (STIO) in support of the Army Vision 2010. This office was designed to "focus on space technologies and look at how USASSDC-developed technologies can be leveraged through space-related applications to meet Army requirements for the Army of the future, no just in the area of missile defense."

12 August 1997 Successful hover test of a prototype KE ASAT kill vehicle completed at the National Hover Test Facility, Air Force Systems Command's Phillips Laboratory, Edwards AFB.

29 September 1997 PAC-3 flight test conducted at WSMR. This was the first controlled test flight and data collection.

30 September 1997 The Army TMD Element FP TOC was inactivated during ceremonies at Army Space Command. The TOC was to be transferred to the AAMDC, Fort Bliss, TX, in November, and reactivated.

October 1997 The Hardware-Software Integration Center (HSIC) opened in Colorado Springs, CO. The HSIC, "provides an environment to explore, integrate, test, and evaluate space, missile defense, and related capabilities for the warfighter."

1 October 1997 Effective date of General Orders 5, dated 1 March 1998, which established the USASMDC at the MACOM level. The CG, USASMDC serves as the Army specified proponent for space and NMD and as the Army operational integrator for TMD.

1 October 1997 *SMDC Vision 2010* published. This document was the command "blueprint for reorganization." Among the goals outlined are "the integration of space support in full spectrum land operations; the creation of a global, multi-element missile defense; the

cultivation of space partnerships; and, the extension of advanced space and missile defense technology for combat forces.

25 October 1997 The USASMDC successfully completed the Data Collection Exercise (DCE) at HELSTEF. In this experiment, the MIRACL and LPCL lasers successfully tracked/lased the orbiting Air Force research satellite MSTI-3. With this exercise, HELSTF "significantly improved its ability to track targets in low Earth orbit and demonstrated its ability to perform high and low power laser engagements involving on-orbit targets."

November 1997 The Laser Communications ground terminal completed its first field test. The Laser Communications is part of the Synthetic Theater of War (STOW) program.

18-21 November 1997 The ASPO fielded the Tri-Band Satellite Communications System at Fort Bragg, NC. This system is the first 6.2 meter Single Radio Frequency feed element Tri-band system that is certified in Ku band and C band.

1998

March 1998 The Ballistic Missile Targets Joint Project Office received its charter from the Army Acquisition Executive. This was the first charter for the USASMDC, which sought to centralize the requirement held by all branches of the service to develop and launch ballistic missile targets.

19 March 1998 Senator Thad Cochran (R-MS) introduced the American Missile Protection Act which established U.S. policy to deploy, as soon as technologically possible, a National Missile Defense system. The Senate passed the National Missile Defense Act of 1999 by a vote of 97 to 3 on 16 March 1999.

April 1998 The Army announced that the USASMDC Contracting and Acquisition Management Office would be recognized for their achievements, obligating more than 25% of the Army's R&D money, with Vice President Albert Gore's Hammer Award for excellence in contracting.

April 1998 The Battle Lab achieved a first by conducting training for soldiers in the Persian Gulf via simulations and a synthetic battlefield initiated in Huntsville.

April 1998 The Army announced the creation of a new officer functional area, Space Operations, or FA 40, a part of the Information Operations career field. The FDIC was responsible for this effort.

24 April 1998 - 20 May 1998 The Battle Lab introduced the new Common Operational Modeling, Planning and Simulation Strategy, or COMPASS, tool at Joint Project Optic Windmill-3. The COMPASS supported in-theater-on-site training to American and allied personnel.

24 April 1998 - 20 May 1998 The ARSPACE deployed the JTAGS to its first overseas exercise, Joint Project Optic Windmill, in The Netherlands. The airborne Surveillance Testbed and the Battle Lab also participated.

June 1998 The Army announced the selection of the Battlefield Ordnance Awareness program for the STOW. The Mosaic Array Data Compression and Processing effort became a candidate for the Army's Warfighting Rapid Acquisition Process.

10 June 1998 The Secretary of Defense selected the USASMDC to be the lead service for a joint feasibility study on the missile alert broadcast system. This is the first time that the USASMDC was selected to serve as the lead service for a joint feasibility study and a joint test and evaluation effort.

5 July 1998 The Commission to Assess the Ballistic Missile Threat to the U.S. released their report, with dissent. The report stated that "the ballistic missile threat to the U.S. is real, credible and could appear sooner than earlier intelligence predictions." Established by the 1988 Defense Authorization Act, Donald Rumsfeld chaired the commission.

September 1998 Redstone Arsenal's Army Missile Optical Range successfully tested "the world's first compact, transportable, solid-state Range Resolved Doppler Laser radar (ladar)." Part of USASMDC's Advanced Discriminating Ladar Technology Program which is designed to develop a four-dimension, solid-state imaging radar.

November 1998 The Iridium phone system developed by the Battle Lab became fully operational. The Battle Lab purchased 11 phones for warfighter demonstrations. The phones are support by a constellation of 70 satellites orbiting the globe. Captain Dwayne Dickens explained, "This is the first truly global phone system and will be invaluable to the soldier in the field." The next phase is to reduce the size of the phones to that of a cell phone.

1999

January 1999 The USASMDC published the first Directed Energy Master Plan that charts the potential uses of directed energy on future battlefields.

March 1999 The Joint Land Attack Cruise Missile, Defense Elevated Netted Sensor (JLENS) provided a link between an offshore Navy Aegis cruise and a land-based Patriot air defense system for the first time at Fort Stewart, GA.

15 March 1999 During a data collection and seeker test, the PAC-3 successfully intercepted a tactical ballistic missile at WSMR.

5 May 1999 Secretary of the Army Louis Caldera granted approval to the KMR to conduct commercial space launches.

6 May 1999 The Army announced the selection of the first FA 40 Space Operations officers. The Army's first Career Field Designation Board results listed eleven lieutenant

colonels and twelve majors who were "career-field designated" into Functional Area 40 – Space Operations. Space Operations Officers will “assist in the managing, planning and integrating of space system capabilities to benefit the Force XXI and Army After Next warfighter.” Lieutenant General John Costello, USASMDC Commander described the FA40 as “the pivotal position to provide the comprehensive coordination of space assets.”

10 June 1999 The THAAD missile successfully intercepted its target during Flight Test 10. This test was the seventh intercept attempt.

15-27 June 1999 During Roving Sands ’99, the JLENS successfully tracked multiple low altitude targets to 200 miles.

26 June 1999 The THEL Advanced Concept Technology Demonstration achieved first light at the TRW Capistrano Test Facility in California.

July 1999 The Army Vice Chief of Staff, General John Keane, signed the U.S. Army Theater Air and Missile Defense Master Plan, a significant step towards integrating present and future air and missile defense systems under a single long-term vision.

9 July 1999 DOD Space Policy announced.

23 July 1999 President William Clinton signed the National Missile Defense Act of 1999 (PL106-38) into law, saying that the legislation makes it clear that no decision on deployment has yet been made and the U.S. will continue to take its nonproliferation and arms control objectives into account.

2 August 1999 General John Abrams, CG of the U.S. Army Training and Doctrine Command, approved the charter for the NMD TRADOC Systems Manager Office. The charter authorized the new agency to act as the Army’s representative, manager and integrator for the entire spectrum of doctrine, training, leader development, organizational, materiel, and soldier products (DTLOMS) associated with the land-based NMD system. The Army assigned the NMD TSM to the USASMDC.

9 September 1999 FM 40-1 JTAGS Operations published

October 1999 The first corps level Tactical Exploitation System (TES), developed by the ASPO, was fielded to the XVIII Airborne Corps.

1 October 1999 The U.S. Space Command assumed responsibility for the DoD Joint Task Force – Computer Network Defense mission. The JTF-CND is located in Arlington, VA and “orchestrates the defense of all DoD computer networks and systems.” This transfer was directed by the president. The task force was originally activated on 30 December 1998 “after exercises and real-world events demonstrated the need for a single coordinating agency with authority to direct actions necessary for the defense of vital national computer networks.”

2 October 1999 The first intercept test of the Ground Based Midcourse Defense Segment EKV (IFT-3), using one warhead and one decoy, was successful.

3 November 1999 The JLENS Program Office was awarded a 2000 Design and Engineering Award by *Popular Mechanics* magazine for its very clever use of existing technology to solve an extremely difficult problem."

15 November 1999 Mr. Jacques Gansler accepted the recommendation of the JROC and designated the Army as the land-based NMD system Lead Service in accordance with DoD Regulation 5000.2R. In this memo, he also supported the JROC decision to assign the Army as the User Representative for the land-based NMD system and as Operational Requirements Document (ORD) approval authority for land-based NMD system issues that are not specific Key Performance Parameter requirements. The Director BMDO remained the BMD Acquisition Executive for the NMD System.

15 December 1999 The USASMDC stood up the 1st Space Battalion "to institutionalize space within the Army by giving our soldiers a familiar structure to work with." This move brought the ARSSTs and the JTAGS under one organization. General Costello stated, "This unit is an example of the type of organization that will enable the smaller, lighter, more agile fighting forces envisioned by General Eric Shinseki, Army Chief of Staff."

2000

January 2000 The NMD User Lab, located at Army Space Command became operational.

4 January 2000 Lieutenant General Paul Kern, Director Army Acquisition Corps, and Lieutenant General Ronald Kadish, Director BMDO, issued a memorandum that ordered the streamlining of the management structure of the NMD program. As a result, all of the project managers under the direction of the Ground-Based Elements Program Office would now report to the System Program Director, NMD Joint Program.

March 2000 The JROC approved the establishment of a Single Integrated Air Picture Systems Engineer Task Force to address CINC integration and interoperability issues associated with emerging and legacy systems.

March 2000 Israel deployed the first battery of ARROW Missiles.

22 March 2000 Lieutenant General Ronald Kadish, BMDO Director, issued a memorandum in which he appointed USASMDC as the executive agent for BMD science and technology. As a result, effective 1 June 2000, the Space and Missile Defense Technology Center was realigned to establish the Center for Technology Development and the Joint Center for Technology Integration.

31 March 2000 FM 100-12 Army TMD Operations published.

4 April 2000 Forward Pass Mission #5 was the first live, over-the-horizon engagement of a cruise missile target using an elevated sensor platform. The JLENS successfully completed two CMD Forward Pass demonstrations.

28 May 2000 The command successfully conducted the demonstration flight of the Orbital/Suborbital program Target Launch Vehicle. The test occurred at Vandenberg AFB, CA.

June 2000 Lawyers from the Clinton Administration concluded that the initial work associated with the construction of an X-band tracking and discrimination radar on Shemya Island, AK, would not violate the ABM Treaty.

1 June 2000 The Office of Technology Integration and Interoperability was established as a major subordinate element of the USASMDC.

6 June 2000 The THEL demonstrator successfully tracked and destroyed a single rocket (a Katyusha) in flight for the fist time and during the fist attempt.

July 2000 The USASMDC established two deputy commanding general positions – the Deputy Commanding General (DCG) Army Space, was also the DCG for Operations, located in Colorado Springs, and the Deputy Commanding General for Acquisition, located in Huntsville, Alabama. Prior to this change there was only one DCG in the command.

6 July 2000 Ground-breaking ceremony was held for new buildings that will house the U.S. Army Space Command and the U.S. Space Command and NORAD, at Peterson AFB, Colorado. Lieutenant General John Costello, representing USARSPACE, said that the move would make them more of the team -- “It is a symbol of jointness and of working together as a joint team doing the nation’s business.”

10 July 2000 A ground-breaking ceremony in Stuttgart, Germany for a new combined facility for the Army Space Command-Europe and the Defense Information Systems Agency – Europe (DISA). The facility will be a one-stop-shop for communications 24/7. ARSPACE provides satellite communication support while DISA provides terrestrial communication support.

14 August 2000 In order to centralize management of the Theater Ballistic Missile Defense, PEO-AMD activated the Lower Tier Project Office. Lower Tier incorporated the Patriot, PAC-3, and Medium Extended Air Defense System (MEADS).

1 September 2000 President Bill Clinton, speaking at Georgetown University, announced: ”I simply cannot conclude with the information I have today, that we have enough confidence in the technology and the operational effectiveness of the entire NMD system, to move forward to deployment. Therefore, I have decided not to authorize deployment of a NMD at this time.”

October 2000 Army National Guard and Reserve personnel began to drill with the ARSPACE. Lieutenant General John Costello described the event as "a new era of cooperation between the Army and the Army National Guard and Reserve." Reserve Forces support will be provided by both individual mobilization augmentees assigned to the Army Reserve and by guardsmen assigned to the Colorado Army National Guard. These personnel will support information operations activities at the 1st Space Battalion's Mobile Technology Team as well as operations of its 1st SATCON Battalion.

1 October 2000 The U.S. Space Command assumed responsibility for the Computer Network Attack (CNA) mission for the Department of Defense. This mission was added to the existing responsibilities for Computer Network Defense and "coordinating all military space operations, to include missile warning, communications, navigation, weather and surveillance from DoD, civil and commercial satellite systems." According to the U.S. Space Command News Release, "the United States will only employ CNA after careful policy and legal review, and any use of CNA will be consistent with U.S. international obligations and the Law of Armed Conflict."

1 October 2000 Operational control of the Big Crow Program Office transferred to USASMDC. The mission of the Big Crow was to "provide projected electromagnetic environments for electromagnetic vulnerability assessments;" and "provide and operate airborne and ground-based assets for electromagnetic experiments, tests, trials and training." Big Crow, which "provides DoD's only remaining large-scale electronic warfare, high-powered, stand-off jammer capability," was assigned to ARSPACE effective 1 October 2000.

13 October 2000 The ASPO and Northrop Grumman completed fielding of the TES Main System #1 to Ft. Bragg NC. The ASPO accepted the system and handed over its ownership to C Co., 319th MI Bn, 525 MI Bde, XVIII Airborne Corps.

26 October 2000 The Army assigned ARSPACE as the single Army component commander to support U.S. SPACE CNA/CND missions. The U.S. Space Command had assumed CND for the DoD on 1 October.

November 2000 *Popular Science* magazine selected the THEL ACTD as the Grand Winner in the General Technology category for its "Best of What's New" awards for 2000.

2001

January 2001 Units from the Colorado Army National Guard and the Reserve began to drill with the ARSPACE in preparation for becoming elements of the ARSSTs and the 193rd Space Support Battalion.

11 January 2001 Space Commission Report released. Chartered by Congress to assess American National Security Space Management and Organization, the commission was headed by Mr. Donald Rumsfeld.

1 February 2001 Acting Pentagon Acquisition Chief David Oliver approved 14 new ACTDs. Included among these was the Advanced Tactical Laser.

15 February 2001 The U.S. Commission on National Security/21st Century stated that "The military cannot undertake any major operation, anywhere in the world, without relying on systems in Space."

17 May 2001 USASMDC Deputy Commanding General-Operations (DCG-O) received permission to authorize acceptance and wear of the Air Force Space and Missile Badge to members of the Army awarded this badge. The Space Badge Wear Authority for ARSPACE came via AFI 36-2923 and a PERSCOM memorandum dated 17 May 2001. The DCG-O defined two means by which an assessed FA 40 could earn the badge (1) attend and graduate from the Army or Air Force seven-week Space course or (2) have two years of service in a Space Operations position and have attended 3Y schooling. The Senior Space Badge and Master Space Badge are authorized after seven and fifteen years of space service respectively. Plans call for a separate and distinct Army space badge to be created within five years.

June 2001 At the direction of Congress, the KMR was renamed the Ronald Reagan Ballistic Missile Defense Test Site at the U.S. Army Kwajalein Atoll.

23 July 2001 A ground-breaking ceremony for the von Braun Complex, the new facility to be built for the USASMDC on Redstone Arsenal was held.

3 August 2001 A group of 14 officers graduated from the first Space Operations Officer Qualification Course the FA40 Course. This intense seven-week course was conducted in Colorado Springs, CO. The goal is to train officers to become "experts in using Space to support the warfighter." As described in *The Eagle*: Course instructions were divided into three segments beginning with 25 days of classroom instruction. A week was then devoted to off-site visits to the NRO, the National Imagery and Mapping Agency [NIMA]…This included hands-on training with the Army Space Program Office, which has developed the Tactical Exploitation of National Capabilities Space support systems used by the Army warfighters." The course also incorporates a 43-hour command post exercise designed to test each student's proficiency in 24 individual critical tasks."

9 August 2001 Record of Decision issued by BMDO to conduct initial site preparation activities for the Fort Greely, AK, portion of the Missile Defense System Test Bed.

September 2001 The USASMDC stood up the Directed Energy Center of Excellence at HELSTF.

6 September 2001 Kenneth Oscar, Acting Army Acquisition Executive, announced program realignments, which impacted the BMD Organization, PEO-AMD, U.S. Army Aviation and Missile Command and USASMDC. To this end, the Lower Tier Program left BMDO for the PEO-AMD; SHORAD transferred from AMCOM to PEO-AMD; THAAD and ARROW moved

from PEO-AMD to BMDO; and, BMTJPO moved from USASMDC to BMDO. The effective date for this action was 1 October 2001.

19 September 2001 The USASMDC Tech Center chartered the Transformation Technology and Concepts Integrated Product Team.

28 September 2001 The HELSTF unveiled their new Solid State Heat Capacity Laser.

28 September 2001 Activation ceremony for the Colorado Army National Guard's 193rd Space Battalion at Peterson AFB, CO. The 193rd became the third battalion of the ARSPACE family. Another first was achieved as the Colorado unit became the first Guard unit with a space mission.

October 2001 The ASPO began to field the Grenadier Beyond line-of-sight Reporting and Tracking (BRAT) a blue-force tracking tool which allows commanders to track friendly forces in near-real time deep on the battlefield.

1 October 2001 The JLENS Program Office transferred to the PEO–AMD for formal acquisition, testing and fielding.

16 October 2001 The DCG for Space assumed the duties of Chief of Space Information Operations Element (Reach-back Element) (SIOE (RE)) for the U.S. Space Command. As the SIOE-RE, the DCG-Space "is responsible for the overall integration of Space and comprehensive IO planning into the plans of Combatant Commanders…"

26 October 2001 Effective this date, all Army acquisition programs, regardless of Acquisition Category, were to be managed by a Program/Project/Product Manager either (1) overseen by a Program Executive Officer or (2) directly reporting to the Army Acquisition Executive.

3 December 2001 At the direction of the Army, Brigadier General John Urias assumed the duties of PEO-AMD. Brigadier General Urias has also the USASMDC DCG for RD&A and Director of the USASMDC Acquisition Center.

2002

2 January 2002 Secretary of Defense Donald Rumsfeld signed a memorandum restructuring the BMDO and renaming it the Missile Defense Agency (MDA). The new MDA will report to the Under Secretary of Defense (Acquisition, Technology and Logistics). The MDA was elevated to the status of an agency in recognition of the national priority and mission emphasis on missile defense.

13 February 2002 Pentagon Acquisition Chief Pete Aldridge directed Lieutenant General Ronald Kadish, MDA Director, to "set up and carry out a single program of research and development work to develop the BMDS."

17 April 2002 Secretary of Defense Donald Rumsfeld and Chairman of the Joint Chiefs of Staff General Richard Myers announced changes to the Unified Command Plan (UCP), the document that establishes the missions and functions for combatant commanders. The new UCP established a new unified command the U.S Northern Command (NORTHCOM). Under UCP 2002, the NORAD and USSPACECOM "continue to accomplish their traditional missions and to carry out well-established actions in support of Operations NOBLE EAGLE and ENDURING FREEDOM and other U.S. military operations around the globe. There are no new mission requirements for these organizations. However, "the establishment of NORTHCOM does present future organizational implications for both NORAD and USSPACECOM, primary among them being the separation of NORAD and USSPACECOM with NORAD aligning with USNORTHCOM later this year."

24 May 2002 President George W. Bush and Russian President Vladimir Putin signed a new arms control treaty in Moscow. Under this agreement, known as the Treaty of Moscow "each party shall reduce and limit strategic nuclear warheads, so that by December 31, 2012 the aggregate number of such warheads does not exceed 1700-2200 for each Party." This treaty puts no restraint upon the number of short-range nuclear missiles held by either country. Nor is any mention made of the destruction of bombers, missiles or submarines removed from service. Once ratified, this treaty remains in effect until 31 December 2012 and may be extended. Either side may withdraw from the agreement following a three-month notice.

1 June 2002 In a speech to the graduating class at West Point, President George W. Bush suggested/outlined a new policy/doctrine of pre-emption.

13 June 2002 Following a six-month notice, the U.S. formally withdrew from the 1972 ABM Treaty.

14 June 2002 Russia formally withdrew from the START II nuclear arms treaty.

15 June 2002 Brigadier General John Holly, Program Director of the GMD JPO, oversaw the ground-breaking at Fort Greely, AK, for six underground silos, part of the GMD Testbed.

18 June 2002 The THAAD Project Office logistics team, among others, received the 2002 David Packard Excellence in Acquisition Award, the DoD's highest acquisition award. THAAD was "recognized for creating innovative logistics concepts with the potential to significantly reduce operational and support costs throughout the missile defense system's service life."

26 June 2002 During a press briefing, Secretary of Defense Donald Rumsfeld announced the merger of the U.S. Space Command and the U.S. Strategic Command (STRATCOM), with an initial operational capability of 1 October 2002. The goal of the merger is to "improve combat effectiveness and speed up information collection and assessment needed for strategic decision-making." Rumsfeld stated "the missions of SpaceCom and StratCom have evolved to the point where merging the two into a single entity will eliminate redundancies into

the command structure and streamline the decision making process." This decision reflects the Bush administration's efforts "to transform the U.S. military to make it more responsive and flexible." The new command "will be responsible for both early warning of and defense against missile attack as well as long-range conventional attacks." Specifically its missions will include "control of America's nuclear forces, military space operations, computer network operations, [and] strategic warning and global planning." The new, as yet unnamed command will be located at Offutt AFB, Nebraska. Full operational capability is planned for 1 October 2003.

27 June 2002 Extended Air Defense Test Bed Product Office disestablished.

3 September 2002 The Battle Lab handed over the Advanced Warfare Environment software package to the Product Manager for Air and Missile Defense Command and Control System.

19 September 2002 Lieutenant General Ronald Kadish, MDA Director, transferred the Targets management and execution to the Air Force's Space and Missile Systems Center, headquartered at Los Angeles AFB, CA.

30 September 2002 The USASMDC Contracts and Legal Offices completed the 46th consecutive year of never having lost a protest - a feat unmatched in the U.S. Army.

October 2002 North Korea admitted that they are pursing a nuclear weapons program, in violation of their 1994 agreement with Washington.

1 October 2002 Fort Greely, AK, is officially transferred to USASMDC.

1 October 2002 The U.S. Space Command and the U.S. Strategic Command merged to create a new U.S. Strategic Command headquartered at Offutt AFB, NE. The new organization was assigned the missions of space operations, information operations, computer network operations, and strategic defense and attack missions. As the new organization stood up, officials reviewed the possibility of adding four new missions to the STRATCOM – Global Strike, Information Operations, Missile Defense, and Command, control, communications, computers, intelligence, surveillance and reconnaissance (C^4ISR).

U.S. Northern Command established; the nerve center for homeland defense. Its mission is twofold: (1) protect the nation from outside attack and (2) assist civilian agencies when attacks or natural disasters occur within the United States. Plans call for NORTHCOM to be fully operational by 1 October 2003. This is the first command of its kind since the Revolutionary War.

1 October 2002 Management of Wake Island transferred from USASMDC to the U.S. Air Force.

2 October 2002 The USASMDC made the Army Service Component Command for U.S. Strategic Command.

8 October 2002 NASA, STRATCOM, NRO, AFSPACE and the Pentagon's Director of Defense Research & Engineering established a cooperative relationship among these space-interested organizations. The goal of this relationship, outlined in an MOA, was to boost technological research and development.

9 October 2002 Opening/dedication ceremonies conducted for the new ARSPACE facility on Peterson AFB.

5 November 2002 The Mobile Tactical High Energy Laser (MTHEL) successfully tracked and intercepted an artillery projectile fired from a Howitzer. This was the first time that a laser had intercepted an artillery projectile.

17 December 2002 President George W. Bush gave the Pentagon two years to deploy a system to defend American territory, troops and allies against missile attack.

Appendix C
Army Astronaut Missions

STS Flights	Astronauts	Position	Landing Date	Ship	Mission	Key Events of Flights
41B	LTC Robert L. Stewart	Mission Specialist	11-Feb-84	Challenger	7-day 23-hours	BG Stewart was the first representative of the Department of the Army to fly into space. Two communications satellites were launched. The most significant events, however, were the first untethered space walks performed by Captain Bruce McCandless II (USN) and LTC Stewart, using manned maneuvering units. The Extra Vehicular Activity (EVA) occurred on the first and seventh days of the flight. (Note: This flight number system meant that the flight took place in 1984 - 4; the flight was launched from Kennedy Space Center -1 vs. Vandenberg AFB designated as 2; and that this was the second launch planned for that fiscal year – B.) As a BG, Stewart later served as the Deputy Commander for the U.S. Army Strategic Defense Command.
51J	COL Robert L. Stewart	Mission Specialist	10-Mar-85	Atlantis	5-day	Second mission devoted to DoD efforts: deployed 2 military satellites.
61B	COL Sherwood C. Spring	Mission Specialist	3-Dec-85	Atlantis	8-day	During the mission the crew deployed three communications satellites and performed a number of experiments. Spring was responsible for satellite deployments. Also, Spring and MAJ Jerry Ross (USAF) conducted an EVA to demonstrate the feasibility of constructing trusses in space.
28	COL James C. Adamson	Mission Specialist	13-Aug-89	Columbia	5-day	This flight was the fourth dedicated to DoD efforts.
38	LTC Charles D. Gemar	Mission Specialist	20-Nov-90	Atlantis	5-day	This mission was a DoD effort to launch a satellite, allegedly to monitor the Persian Gulf region.
43	COL James C. Adamson	Mission Specialist	11-Aug-91	Atlantis	6-day	Primary payload for this mission was the Tracking and Data Relay Satellite-5, the fourth of the TDRS cluster.
44	COL James S. Voss and CWO3 Thomas J. Hennen	Mission Specialist and Payload Specialist	1-Dec-91	Atlantis	7-day	Dedicated to DoD missions, projects included Defense Support Program satellite, Terra Scout, Military Man in Space, etc. CWO3 Hennen, the only branch office to fly in space, conducted phase one of the Terra Scout experiment, which sought to determine what an experienced imagery interpreter could observe from the Space Shuttle using the Spaceborne Direct View Optical System. This was the first time that two Army personnel flew on the same shuttle flight.

STS Flights	Astronauts	Position	Landing Date	Ship	Mission	Key Events of Flights
48	LTC Charles D. Gemar	Mission Specialist	18-Sep-91	Discovery	6-day	The primary payload was the Upper Atmosphere Research Satellite. The mission was to study the Earth's troposphere.
53	COL James S. Voss and LTC Michael R. Clifford	Mission Specialist and Payload Specialist	9-Dec-92	Discovery	7-day	The primary mission was a military payload (DoD-1), the last major military payload then planned for the shuttle fleet.
57	MAJ Nancy J.Currie Sherlock	Mission Specialist	1-Jul-93	Endeavour	9-day	The first flight of the SPACEHAB, pressurized laboratory which would more than double pressurized workspace for crew-tended experiments. The crew also retrieved the European Retrievable Carrier. This was Currie's first space flight and the first for a female Army officer.
58	COL William S. McArthur, Jr.	Mission Specialist	1-Nov-93	Columbia	14 days 12 min. 32 sec.	This mission was the second spacelab flight dedicated to life sciences research. The longest shuttle flight to date.
59	LTC Michael R. "Rich" Clifford	Mission Specialist	20-Apr-94	Endeavour	11-day	Primary payload was the Space Radar Laboratory, radar mapping of the Earth's surface to study human-induced vs. natural environmental change.
62	LTC Charles D. Gemar	Mission Specialist	18-Mar-94	Columbia	14-day	This mission was part of a series of Extended Duration Orbiter flights designed to provide information to assess the impact of long-duration space flight (10 days or more) on astronaut health. Astronauts conducted other experiments as part of the Office of Aeronautics and Space Technology 2 and U.S. Microgravity Payload.
69	COL James S. Voss	Payload Commander	18-Sep-95	Endeavour	11-day	This was the first flight during which two separate payloads were retrieved and deployed during the same mission. LTC Voss participated in a lengthy space walk (over 6 hours) to evaluate improvements made to the extravehicular activity suits and tools.
70	LTC Nancy J. Currie	Mission Specialist	22-Jul-95	Discovery	9-day	The primary mission for this flight was the deployment of TDRS, a space-based network providing communications, tracking, telemetry, data acquisition and command services essential to the Space Shuttle and other low-Earth orbital spacecraft. The crew also performed a number of scientific experiments.

STS Flights	Astronauts	Position	Landing Date	Ship	Mission	Key Events of Flights
74	COL William S. McArthur, Jr.	Mission Specialist	20-Nov-95	Atlantis	8-day	During this mission, the shuttle docked with the Russian Space Station Mir, to provide equipment and supplies. This was the second time that a space shuttle docked with the Mir, a continuation of efforts to construct an International Space Station.
76	LTC Michael R. Clifford	Mission Specialist	31-Mar-96	Atlantis	9-day	During this flight, the shuttle linked up with the Mir. LTC Clifford with Dr. Linda Godwin performed a 6-hour extravehicular activity around the two spacecraft to attach four Environmental Effects Payload experiments to the station's Docking Module.
88	LTC Nancy J. Currie	Mission Specialist	15-Dec-98	Endeavour	11-day	The first NASA mission devoted to the International Space Station (ISS). LTC Currie operated the robotic arm which connected the Zarya module to the Unity module, the first components of the ISS.
92	COL William S. McArthur, Jr.	Mission Specialist	22-Oct-00	Discovery	11-day	During this flight, the space shuttle delivered hardware components for the International Space Station. Installed two current converter units to process power.
101	COL James S. Voss and COL Jeffrey N. Williams	Mission Specialists	29-May-00	Atlantis	10-day	Williams and Voss (USA-Ret) conducted a 6 ½ hour space walk to deliver materials and to work on the ISS. This was LTC Jeffery Williams' first space mission.
105	LTC Patrick G. Forrester	Mission Specialist	22-Aug-01	Discovery	12-day	The primary purpose was to rotate ISS crew members and deliver supplies using the Italian made Multipurpose Logistics Module - Leonardo. The crew also performed two spacewalks and conducted a number of scientific experiments.
109	LTC Nancy J. Currie	Mission Specialist/ Flight Engineer	12-Mar-02	Columbia	10 days 22 hrs 11 min.	Captured and maneuvered the Hubble Space Telescope, with the robot arm, to allow them to make repairs and improvements to the system.

* As of December 2002, the Army has three astronauts, LTC Timothy J. Creamer, LTC Douglas H. Wheelock, and LTC Timothy L. Kopra, who have not flown a mission.
* COL Forrester is the commander of the detachment.
* Current Army Astronauts are COL Patrick G. Forrester, COL Nancy J. Currie, LTC (P) Jeffery N. Williams; LTC Timothy J. Creamer and LTC Douglas H. Wheelock selected June 1998, and LTC Timothy L. Kopea selected July 2000.

Appendix D
Acronyms

A

AAF – Army Air Force
AAMDC – U.S. Army Air and Missile Defense Command
AAN – Army after Next
ABM – Anti-Ballistic Missile
ABMA – Army Ballistic Missile Agency
ABMDA – Advanced Ballistic Missile Defense Agency
ABMDP – Advanced Ballistic Missile Defense Program
ACES – Arrow Continuation Experiments
ACTD – Advanced Concept Technology Demonstration
ACTS – Advanced Communications Satellite
ADP – Automated Data Processing
ADS – Azimuth Determination System
AEF – American Expeditionary Force
AFB – Air Force Base
AFSAT – Air Force Satellite Communications
AFSPC – U.S. Air Force Space Command
AIAA – American Institute of Aeronautics & Astronautics
AIT – Atmospheric Interceptor Technology
ALCOR – ARPA Lincoln C-Band Observables Radar
ALTAIR – ARPA Long-Range Tracking and Instrumentation Radar
AMC – U.S. Army Materiel Command
AMOR – Army Missile Optical Range
AOA – Airborne Optical Adjunct
AOD – Army Ordnance Department
AOMC – U.S. Army Ordnance Missile Command
ARADCOM – U.S. Army Air Defense Command
ARC – Advanced Research Center
ARCENT – Army Service Component Command
ARCTIC – Advanced Research Center Telecommunications Interface Console
ARGMA – Army Rocket and Guided Missile Agency
ARL – Army Research Laboratory
ARPA – Advanced Research Project Agency
ARSPACE – U.S. Army Space Command
ARSPOC – Army Space Command Operations Center
ARSST – Army Space Support Team
ASA – Army Space Agency
ASAT – Anti-Satellite
ASC – Army Space Council

ASCC – Army Service Component Command
ASD – Assistant Secretary of Defense
ASDP – Army Space Demonstration Program
ASEDP – Army Space Exploitation Demonstration Program
ASEWG – Army Space Executive Working Group
ASI – Army Space Institute
ASIS – Army Space Initiatives Study
ASMP – Army Space Master Plan
ASPO – Army Space Program Office
AST – Airborne Surveillance Testbed
ASTRO – Army Space Technology Research Office
ASTWG – Army Science & Technology Working Group
ASWG – Army Space Working Group
ATBM – Anti Tactical Ballistic Missile
ATD – Advanced Technology Directorate
ATL – Advanced Tactical Laser
ATMDE – Army Theater Missile Defense Element
ATP – Advanced Technology Program
ATSS – Army Tactical Surveillance Satellite
AWE – Army Warfighting Experiment

B

BAMBI – Ballistic Missile Boost Intercept
BG – Brigadier General
BDU – Battle Dress Uniform
BIC – Battle Integration Center
BL – Battle Lab
BM/C^3 – Battle Management/Command, Control, and Communications
BM/C^4 – Battle Management/Command, Control, Communications, and Computers
BM/C^{4}I – Battle Management/Command, Control Communications, Computers, and Intelligence
BMD – Ballistic Missile Defense
BMDATC – Ballistic Missile Defense Advanced Technology Center
BMDC – Ballistic Missile Defense Center
BMDO – Ballistic Missile Defense Organization
BMDPO – Ballistic Missile Defense Project Office
BMDSCOM – Ballistic Missile Defense System Command
BMTJPO – Ballistic Missile Targets Joint Project Office
BN – Battalion
BOA – Battlefield Ordnance Awareness
BRAT – Beyond Line of Sight Reporting and Tracking
BSTS – Boost Surveillance and Tracking System

C

C^2 – Command and Control
C^2/POS NAV – Command & Control/Position Navigation
C^4I – Command, Control, Communications, Computer, and Intelligence
C^4ISR – Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance
CACDA – Combined Arms Combat Development Agency
CAD – Computer-Aided Design
CALL – Center for Army Lessons Learned
CDOCS – Contingency DSCS Operational Control System
CEC – Cooperative Engagement Capability
CENTCOM – Central Command
CEP – Concept Evaluation Program
CG – Commanding General
CIS – Commonwealth of Independent States
CMD – Cruise Missile Defense
CNA – Computer Network Attack
CND – Computer Network Defense
COE – Corps of Engineers
COMPASS – Common Operational Modeling, Planning, and Simulation Strategy
COMSAT – Communications Satellite Corporation
CONAD – Continental Air Defense Command
CONOPS – Concept(s) Of Operations
CONUS – Continental United States
COPS – Contingency Operations (Space)
COTS – Commercial-off-the-shelf
CSOC – Consolidated Space Operations Center
CWO – Chief Warrant Officer

D

DA – Department of the Army
DAB – Defense Acquisition Board
DACS – Direct Altitude Control System
DARPA – Defense Advanced Research Project Agency
DCE – Data Collection Exercise
DCG – Deputy Commanding General
DCSOPS – Deputy Chief of Staff, Operations and Plans
DCSCS – Defense Satellite Communication System
DCSRDA – Deputy Chief of Staff, Research, Development and Acquisition
DE – Directed Energy
DE ASAT – Directed Energy Anti-Satellite
DEM/VAL – Demonstration/Validation
DEMP – Directed Energy Master Plan

DEW – Directed Energy Weapons
DIS – Distributed Interactive Simulation
DISA – Defense Information Systems Agency
DMSP – Defense Meteorological Satellite Program
DOCS – DSCS Operational Control System
DoD – Department of Defense
DOT – Designating Optical Tracker
DPG – Defense Planning Guidance
DR – Discrimination Radar
DRID – Defense Reform Initiative Directive
DSCS – Defense Satellite Communications System
DSCSOC – DSCS Operations Center
DSP – Defense Support Program
DSSW – Director of Space and Special Weapons
DTLOMP – Doctrine, Training, Leader Development, Organization, Materiel, Personnel
DTLOMS – Doctrine, Training, Leader Development, Organization, Materiel, and Soldier Systems
DUS – Deputy Undersecretary of Defense

E

E^2I – Endoatmospheric/Exoatmospheric Interceptor
EADSIM – Extended Air Defense Simulation
EADTB – Extended Air Defense Testbed
EFS – Enhanced Flight Screener
EIT – Exo-Interceptor Testbed
EKV – Exoatmospheric Kill Vehicle
EMD – Engineering and Manufacturing Development
ERDAS – Earth Resources Data Analysis System
ERINT – Extended Range Intercept Technology
ERIS – Exoatmospheric Reentry-vehicle Interceptor Subsystem
EVA – Extra Vehicular Activity

F

FAISS – FORSCOM Automated Intelligence Support System
FAR – Forward Acquisition Radar
FASP – Fly Away Sensor Package
FDIC – Force Development and Integration Center
FEL – Free Electron Laser
FEMA – Federal Emergency Management Administration
FLAGE – Flexible Lightweight Agile Guided Experiment
FLTSAT – Fleet Satellite Communications
FM – Field Manual
FMA – Foreign Military Acquisition

FOA – Field Operating Agency
FOC – Future Operational Capabilities
FORSCOM – U.S. Army Forces Command
FPTOC – Force Projection Tactical Operations Center
FTV – Flight Test Vehicle
FWD – Forward

G

GAMS – Ground Antenna and Monitor Station
GAO – General Accounting Office
GBEPO – Ground Base Elements Program Office
GBFEL – Ground Based Free Electron Laser
GBI – Ground Based Interceptor
GBL – Ground Based Laser
GBR – Ground Based Radar
GBR-X – Ground Based Radar-Experimental
GEM – Guidance Enhancement Missile
GMD – Ground-based Midcourse Defense
GMF – Ground Mobile Forces
GMFSC – Ground Mobile Forces Satellite Control
GPALS – Global Protection Against Limited Strikes
GPS – Global Positioning System
GSTS – Ground-based Surveillance and Tracking System

H

HALO – High Altitude Observatory
HEDI – High Endoatmospheric Defense Interceptor
HELLO – High Energy Laser Light Opportunity
HELSTF – High Energy Laser Systems Test Facility
HOE – Homing Overlay Experiment
HQDA – Headquarters Department of Army
HSD – Hardsite Defense
HSIC – Hardware/Software Integration Center

I

ICBM – Intercontinental Ballistic Missile
ICWG – Interface Control Working Group
ID – Interactive Discrimination
IFICS – In Flight Interceptor Communications
IFT – Integrated Flight Test
IGY – International Geophysical Year
IMINT – Imagery Intelligence

INF – Intermediate-range Nuclear Forces
INMARSAT – International Marine Satellite
IRBM – Intermediate Range Ballistic Missile
IRIS – Infrared Instrumentation System
ISS – International Space Station
ITB – Israeli Testbed

J

JCS – Joint Chiefs of Staff
JIOA – Joint Intelligence Objectives Agency
JLENS – Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System
JPL – Jet Propulsion Laboratory
JPO – Joint Project Office
JPO NMD – Joint Project Office National Missile Defense
JROC – Joint Requirements Oversight Council
JSMB – Joint Space Management Board
JTAGS – Joint Tactical Ground Station
JTF – Joint Task Force

K

KE – Kinetic Energy
KE ASAT – Kinetic Energy Anti-Satellite
KEW – Kinetic Energy Weapons
KITE – Kinetic Kill Vehicle Integrated Technology Experiment
KMR – Kwajalein Missile Range
KREMS – Kierman Re-entry Measurements Site

L

LAM – Louisiana Maneuvers
LAR – Local Acquisition Radar
LASER – Light Amplification by Stimulated Emission or Radiation
LDS – Layered Defense System
LEAP – Lightweight Exo-Atmospheric Projectile
LEOCOMM – Low Earth Orbit Communications
LI – Light Infantry
LIGHTSAT – Lightweight Small Satellite
LoAD – Low Altitude Defense
LPCL – Low Power Chemical Laser
LRALT – Long Range Air Launched Target
LTG – Lieutenant General
LVC – Large Vacuum Chamber
LWIR – Long-Wave Infrared

M

M&S – Modeling and Simulation
MBRV – Modified Ballistic Reentry Vehicle
MACOM – Major Army Command
MAR – Multifunctional Array Radar
MASINT – Measurements and Signatures Intelligence
MASS – Mesoscale Atmospheric Simulation System
MD – Missile Defense
MDA – Missile Defense Agency
MDAP – Major Defense Acquisition Program
MDBIC – Missile Defense Battle Integration Center
MDSTC – Missile Defense and Space Technology Center
MEADS – Medium Extended Air Defense System
MG – Major General
MICOM – U.S. Army Missile Command
MILSATCON – Military Satellite Control
MILSTAR – Military Strategic Tactical and Relay
MIPS – Millions of Instruction per Second
MIRACL – Mid-Infrared Advanced Chemical Laser
MIRV – Multiple Independently-targetable Re-entry Vehicle
MOA – Memorandum of Agreement
MPRS – Mission Planning Rehearsal System
MSE – Major Subordinate Element
MSI – Multi-Spectral Imagery
MSIP – Multi Spectral Imagery Processor
MSLS – Multi Service Launch System
MSR – Missile Site Radar
MSX – Midcourse Space Experiment
MTHEL – Mobile Tactical Higher Energy Laser
MTR – Missile Track Radar
MTTV – Maneuvering Target Test Vehicle
M/V – Manpack/Vehicular Model
MX – Missile Experiment

N

NASA – National Aeronautics and Space Administration
NATO – North Atlantic Treaty Organization
NINA – National Imagery and Mapping Agency
NMD – National Missile Defense
NORAD – North American Aerospace Defense Command
NORTHCOM – U.S. Northern Command

NPB – Neutral Particle Beam
NRO – National Reconnaissance Office
NSC – National Security Council
NSD – National Security Directive
NSDD – National Security Decision Directive
NXDO – NIKE-X Development Office

O

OAMP – Optical Aircraft Measurements Program
OACSI – Office of the Assistant Chief of Staff for Intelligence
OCRD – Office of the Chief of Research and Development
ODCSOPS – Office of the Deputy Chief of Staff for Operations and Plans
ODCSR-DA – Office of the Deputy Chief of Staff for Research, Development and Acquisition
OPTEMPO – Operational Tempo
ORD – Operational Requirements Document
ORD/CIT – Ordnance Department/California Institute of Technology
OSD – Office of the Secretary of Defense
OTII – Office of Technology Integration and Interoperability

P

PAC-3 – PATRIOT Advanced Capability-3
PAR – Perimeter Acquisition Radar
PAWS – Pager Alert Warning System
PEO AMD – Program Executive Office Air and Missile Defense
PEPE – Parallel Element Processing Element
PRESS – Pacific Range Electromagnetic Signature Studies

Q, R

R&D – Research and Development
RADAR – Radio Detecting and Ranging
RAMMSO – Redstone Anti-Missile Missile Systems Office
RDA – Research, Development, and Acquisition
RDT&E – Research, Development, Test and Evaluation
RISTA – Reconnaissance, Intelligence, Surveillance and Target Acquisition
RMI – Republic of the Marshall Islands
ROBS – Rapid Optical Beam Steering
RSSC – Regional Satellite Support Center
RSTA – Reconnaissance and Target Acquisition
RV – Re-entry Vehicle

S

SAFSCOM – U.S. Army SAFEGUARD System Command
SAFLOG – U.S. Army SAFEGUARD Logistics Command
SALT – Strategic Arms Limitation Treaty
SATCOM – Satellite Communications
SATCON – Satellite Control
SBI – Space Based Interceptor
SBL – Space Based Laser
SCORE – Signal Communications by Orbiting Relay Equipment
SDC – U.S. Army Strategic Defense Command
SDI – Strategic Defense Initiative
SDIO – Strategic Defense Initiative Organization
SDS – Strategic Defense System
SECDEF – Secretary of Defense
SENSCOM – U.S. Army Sentinel System Command
SHF – Super High Frequency
SHORAD – Short Range Air Defense
SIAP – Single Integrated Air Picture
SIOE – Space Information Operations Element
SLBM – Sea Launched Ballistic Missile
SLGR – Small Lightweight Global Positioning System Receiver
SLKT – Survivability, Lethality, and Key Technologies
SMDC – U.S. Army Space and Missile Defense Command
SPECC – Space Enhanced Command and Control
SRALT – Short Range Air Launched Target
SRHIT – Small Radar Homing Intercept Technology
SRMSC – Stanley R. Mickelsen SAFEGUARD Complex
SSDC – U.S. Army Space and Strategic Defense Command
SSEB – Source Selection Evaluation Board
SSTS – Space-based Surveillance and Tracking System
STARS – Strategic Target System
START – Strategic Arms Reduction Treaty
STOW – Synthetic Theater of War
STP – System Technology Program
STR – Systems Technology Radar
STRATCOM – U.S. Strategic Command
STS – Satellite Tracking System/Space Transportation System
STTF – Systems Technology Test Facility
SWORD – Short Range Air Defense with Optimized Radar Distribution

T

TAA – Total Army Analysis
TACSAT – Tactical Communication Satellite
TAMD – Theater Air and Missile Defense

TBM – Tactical Ballistic Missile
TCMP – Theater Missile Defense Critical Measurements Program
TDRS – Tracking and Data Relay Satellite
TENCAP – Tactical Exploitation of National Space Based Capabilities Program
TERS – Tactical Event Reporting System
TES – Tactical Exploitation System
THAAD – Theater High Altitude Area Defense
THEL – Tactical High Energy Laser
TIR – Terminal Imaging Radar
TIROS – Television and Infrared Observation Satellite
TMD – Theater Missile Defense
TOC – Tactical Operations Center
TOPO – Topographic
TPIO – TRADOC Program Integration Office
TRAC^3 – Tracking, Command, Control and Communications
TRADOC – U.S. Army Training & Doctrine Command
TRT – Terrain Reconnaissance Tool
TSM – TRADOC System Manager
TTEC – Topographic Technology Exploitation Cell
TTPI – Trust Territory Pacific Islands
TTR – Target Track Radar
TTV – Test Target Vehicle

U

UAV – Unmanned Aerial Vehicle
UCP – Unified Command Plan
UHF – Ultra High Frequency
UPL – Unit Prevention Leader
USAF – U. S. Air Force
USAISC – U.S. Army Information System Command
USAKA – U.S. Army Kwajalein Atoll
USARSPACE – U. S. Army Space Command
USASA – U.S. Army Space Agency
USASDC – U.S. Army Strategic Defense Command
USASMDC – U. S. Army Space and Missile Defense Command
USASSDC – U.S. Army Space and Strategic Defense Command
USSPACECOM – U.S. Space Command
USSR – Union of the Soviet Socialist Republics

V

VCSA – Vice Chief of Staff of the Army
VDCPAD – Vehicular Data Communications and Positional Awareness Demonstration
VHF – Very High Frequency

VTC – Video Teleconference

W

WRAP – Warfighter Rapid Acquisition Program
WSMR – White Sands Missile Range (New Mexico)

X, Y, Z

XBR – X-Band Radar
ZAR – ZEUS Acquisition Radar