



# AAFAM

## Association of Air Force Missileers Newsletter

Volume 9, Number 2

"Victors in the Cold War"

June 2001

### Guardian Challenge 2001 - It Gets Better Every Year

#### Minot, Vandenberg, Peterson Winners At Guardian Challenge

- By Capt. Sean McKenna, Guardian Challenge Public Affairs

Space wings from Minot AFB, Vandenberg AFB and Peterson AFB captured the top honors at Guardian Challenge, Air Force Space Command's annual space warfighter competition held here May 7-10.

The only space and missile competition in the Air Force, Guardian Challenge pits the best space warfighters in the command against each other, determining the top space and missile teams in the Air Force. Nearly 200 competitors competed in several space and missile disciplines, including missile combat operations, satellite operations, remote space tracking, security forces, helicopter operations, food services, spacelift and missile maintenance and communications, and missile codes.

"You are the best in the world at what you do", said Air Force Chief of Staff, Gen. Michael Ryan in a  
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Minot's Blanchard Trophy Winning Team

#### AAFAM and Guardian Challenge

by Col (Ret) Charlie Simpson, AAFM Executive Director

Guardian Challenge 2001 marked the ninth year that your association has taken part in the annual Space and Missile Competition. In 1993, we had just founded AAFM, and had about 400 members. The competition that year was still called Olympic Arena, and was hosted by the Air Combat Command during the short period that ICBMs were part of the command. Your executive director took a small display to the event that year and introduced the association to the missile force.

In 1994, AF Space Command began the new Space and Missile Competition, now called Guardian Challenge. The event changed drastically, with no score posting, fewer trophies, shorter competitive events and the addition of the space disciplines. Your executive director was present again, with an improved display. We were

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Aldridge, Blanchard and Schriever Trophies

#### The Mission of the Association of Air Force Missileers -

- Preserving the Heritage of USAF Missiles and the people involved with them
- Recognizing Outstanding Missileers
- Encouraging Meetings and Reunions
- Keeping Missileers Informed
- Providing a Central Point of Contact for Missileers

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## A Word from the Association

**Newsletter** - We are using a new printer for this issue of your quarterly publication. For the last eight years, your treasurer, Bob Kelchner, has donated the labor to print each issue and your executive director has mailed the issues. The new printer will do both, taking a lot of labor off both our shoulders, and for a reasonable cost. We will see how it works on this June issue. Bob has done a superb job for us - he deserves thanks from all of our members. He has provided thousands of dollars in free labor and services and has allowed AAFM to develop a quality newsletter. Your executive director and his wife have also put in a lot of hours preparing mailings. The new printer will make it easier for all of us.

**National Meeting 2002** - Dayna Castro and I made final arrangements for our October 2002 meeting at the Santa Maria Inn - the registration will be in the September newsletter. As we continue to grow (we have had more than 2,300 missileers join to date), it may become necessary to limit attendance at some parts of the meeting, so it will be important for you to register early to guarantee that you can attend the events that you are interested in. For example, the banquet for next year's event will have a limit of 225 attendees - we neared that number at our 2000 meeting in Colorado Springs.

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**Taps for Missileers** - Jim Magill was at Mountain Home AFB working B-47 and C-97 radios, then trained to repair the Titan I Univac Athena ground guidance computer in the 569SMS (except Athena never broke down, not once). He was also at Boeing in Seattle.

LtCol (Ret) Alvin Bennett Jenkins, Sr. was a Crew Commander, Standboard, and Command Post Controller at Warren.

## Letters to the Association

Address your letters to *AAFMM*, Box 5693, Breckenridge, CO 80424, or send by e-mail to [aafm@afmissileers.org](mailto:aafm@afmissileers.org). Letters may be edited to fit - content/meaning will not be changed.

**Lost Missileers** - People are looking for the following missileers - contact AAFM if you know anything about any of them.

Edward P Robinson was a 2Lt serving as a copilot of the Homesick Angel in the South Pacific in WWII. He was commander of the Pretoria, South Africa tracking Station, 67-69 and was assigned to the Down Range Affairs Office which was headed up by LtCol Andrew Schou, now deceased.

Lt. Gerald Hoogenikins (spelling?) served with the Atlas F at Plattsburgh 1961-63

Capt Carl Rainey, who was at Malmstrom in the mid-80s, in GLCM in Belgium and in the 4ACCS 89-92.

Wade Davis was enlisted missileer in the 308SMW at Little Rock.

**Titan I Sites** - Ron Plante, Scott Murdock, Tim Tyler and I successfully got on top of Ellsworth sites 850-C Sturgis and 850-B Hermosa during last weekend's CAMP (Council on America's Military Past) conference in Rapid City. Stand by for multiple trip reports and probably slides/photos; both are in reasonably good condition.

*Mark Morgan, mbr no A1018, North Bend, WA*

*The detailed trip reports will appear in the next AAFM newsletter issue - some interesting stuff from these members.*

**GC2001** - Thanks for the help with the ticket to the awards banquet. It brought back many memories and I renewed some old friendships. I competed in Ops from Little Rock in 1972, 1975-78 and 1981. Next year will be the 30th anniversary since I first competed and I'm planning on attending. If there's anything I can assist you with next year let me know and I'll be happy to help. I thought Gen Kelley was terrific. He really came with some fire in his

*(Continued on page 3)*

**Letters (Cont)** - belly and got everyone stirred up. *Bob Sullivan, mbr no A1783, Huntsville, AL*

**Missile Inspectors** - I'm recruiting people with missile expertise for the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC). Specifically, we are looking for missile tool experts capable of recognizing the machine tools used in production of missiles with either solid or liquid propulsion, missile production experts able to identify the special fixtures and modifications on dual-use equipment to make them missile specific and missile equipment experts capable of recognizing dual-use equipment operated in the missile area and familiar with dual-use item agreements and treaties. UNMOVIC's mandate is to destroy, remove or render harmless Iraqi weapons of mass destruction and long-range missiles. UNMOVIC's predecessor was UNSCOM (United Nations Special Commission) which had inspectors in Iraq from 1991 to Dec 98. Although inspectors have not returned to Iraq since then, UNMOVIC is training people for the day when inspectors do return. The training program lasts approximately four weeks and with completion, the individual's name gets placed on a roster for future services when inspectors do return to Iraq. The inspector would be under a UN contract and would be expected to serve in Iraq for 4-6 months when called. If any of this sounds interesting and you would like more information, please contact Col Walt Frant at the State Department at 202-647-1617.

**ND Historical Society** - Our mission is to identify, interpret, preserve and promote the history of North Dakota. During the past two years, we have been working with Space Command to mitigate the loss of the 321MW at Grand Forks AFB. We have made some progress by securing information and artifacts that help define the history of the Cold War in North Dakota. The demolition process for the 150 LFs and 15 MAFs of the 321MW is 60% completed and will resume in the spring of 2001. Closing of the wing has presented an opportunity to save sites that are important to understanding this part of our history. This request involves securing a MAF (Oscar-Zero) and one LF (November-33), both near Cooperstown. The problem that we have encountered is securing funding that would allow us to set up a foundation for operating and maintaining the sites. A deadline of June 2001 has been set by the Air Force to settle this and after this

time the sites will be demolished. The National Park Service is also considering doing a study on the "Cold War Heritage Corridor" concept that would include all states involved in missile and defense bases. This will probably occur within the next few years and could lead to a national "Cold War Heritage Corridor" project. North Dakota could contribute to this project by saving the missile sites. The challenge that we face is that we cannot accept the sites without adequate funding to operate and maintain them. I have requested support from our congressional delegation to secure funding from the Air Force, but this is now impossible because of federal budget reductions. We estimate that \$2,000,000 would be adequate to stabilize the sites and provide a foundation for operating and maintenance. I want to inform your association about the challenges that we face. Any assistance members can give to help save the sites is greatly appreciated. *Merl Paaverud, Interim Superintendent of the State Historical Society of North Dakota.*

**564MS Heritage** - On January 18, 1967 Crew S209 departed the front gate of Malmstrom not knowing when they might be relieved from alert duty at Papa LCC. MCC Capt Tom Mulligan, AMCC 1Lt Bill Wuest, and DMCC 1Lt Walt Skrainy headed into the unknown to make history. Not only would they pull the very first alert in the newly reconstituted 564SMS, but they would command the nation's newest ICBM, the Minuteman II. Six months earlier, when they began training as part of the initial training cadre, another crew was identified to pull the first alert. However, as fate would have it, this crew received an unqualified rating on its initial 3901SMES evaluation leaving S209 with its chance to make history. Many obstacles confronted the crew on this first alert. There was no approved technical order to guide crew actions. While limited contractor data was available, good judgment was the order of the day. No one was qualified to relieve S209. When they departed, they didn't know if it would be for the standard 48 hour alert period or longer. S209 was faced with mastering the intricacies of a new command and control concept. To save dollars and avoid the need for miles of hardened intersite communications cabling, the Deuce command and control system employed an innovative medium frequency radio communication system to receive status and command its missiles. Four years earlier, Secretary of Defense McNamara approved the Minuteman Force Modernization Program. This pro-

*(Continued on page 12)*



## The History of a Vision - by Kristi

Corcoran

Seventeen acres of land and a nineteen thousand square foot installation that housed a four-megaton ICBM was a common landmark across the US during the cold war era. In Colorado, there were several of these sites scattered across the land, approximately twenty miles apart; a fact that people didn't view as unusual. SAC ran these sites, some bigger, some smaller, for several years. Nine personnel on 24 hour shifts manned the site, ready to launch the missile within fifteen minutes. These weapons were the first of their kind to be put in the ground. The sites were called coffins, due to the way the missile laid horizontally and was then raised up to fire. Although it was prepped during the Cuban Missile Crisis, the missile mainly just sat around during its time, 1960 through 1965.

When Minuteman and Titan II replaced Atlas and Titan I, missile sites across the country became useless property. After the military had taken equipment and the missile itself, there was no more need for the installations. They left control panels, keyboards, and equipment scattered throughout the now vacant building.

In Colorado's Weld County, currently home to over thirty missile sites, the Atlas sites became the property of the county. The large concrete structure that had housed a powerful nuclear missile and the grounds around that structure were converted into a civil defense shelter. In the case of an emergency, the county-operated site could become a hospital or shelter, and it stored food and supplies for that purpose.

The Atlas E was once one of the most powerful weapons in the United States nuclear arsenal, but as with everything, it was eventually superseded by larger, more powerful missiles. The Atlas E was second in its line of

weaponry, but was obsolete even as it was being manufactured, and the Atlas E disappeared into memory. The structure that once housed this great weapon became a relic of the past.

Peter Ambrose, an Armed Forces veteran, is now trying to bring to light the history of the site he maintains. After answering an ad in the local paper, he became caretaker of the grounds that included the missile shelter. The county had used this building as storage for supplies and archival records for years. The main focus of the acreage was the camping grounds that surrounded the large cement structure. For twenty-five years the installation had been neglected, and most of the original relics left by the personnel had been sold off or destroyed. He got permission to clear out some of the extra supplies, holding an auction, and was eventually given access to the entire site. As a military man, he was interested in learning more about the site.

In two years he has transformed the missile site into something similar to what it once was. As you enter there is artwork adorning the walls commemorating the unit stationed there. A local aerosol artist, Gabe Benevides, created the mural. Inside the massive doors is the large open area that houses a large facsimile model of the missile. Further inside the structure is the large pit and walkway upon which the missile would sit when ready to fire. The steelwork had to be redone in order to make it safe to walk on. Along the walls are pictures sent by the personnel from this and similar sites. There are also large fact sheets and other information available throughout the site. A newly acquired control panel waits on the side, still in the works for restoration. In addition, some of

## Reunions

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**485TMW (GLCM)** - 2001 reunion in San Antonio, TX, 29 June -1 July. Contact Chaplain Mavis Baldwin, 830-981-8682, msbrb@aol.com.

**Matador-Mace** - Reunion 3-6 October 2001 at the Delta Orlando Resort, Orlando, Florida. Contact Joe Perkin at perkster@fcol.com, 904-282-9064 or at 2019 Cornell Rd, Middleburg, FL 32068 or visit <http://tacmissileers.homestead.com/missileer.html>.

**564th Missile Squadron Heritage Dinner** - 20 October 2001 at Malmstrom. Col Walt Skrainy, on the first 564SMS crew to pull an alert, will speak. Contact Captain Francis Doiron at 406-731-7162 or email [francis.doiron@MALMSTROM.AF.MIL](mailto:francis.doiron@MALMSTROM.AF.MIL).

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Warren's Winning Maintenance Team

**GC Winners (Cont)** - keynote address to the approximately 500 people at the closing ceremony May 10. "In this competition, there are no winners or losers - America is the winner." When final scores were announced, the 91SW at Minot walked away with the prestigious Blanchard Trophy for best Air Force ICBM wing. The win was the 91SW's second straight and the fifth in the award's 34-year history. The 30SW captured the Schriever Trophy as outstanding space launch wing for the second time since the trophy's inception in 1994. The 21SW from Peterson AFB won the Aldridge Trophy for the best space operations wing.

"Words can't describe how sweet it is (to win the Schriever Trophy)," said 1st Lt. Richard Sjogren, a 30SW launch controller competing in his first Guardian Challenge. "We put a lot of hard work and effort into this." The competition began in 1967 as the Strategic Air Command missile combat competition, Curtain Raiser. Thirty-four years, three name changes and many event additions later, the competition's focus remains the same - to evaluate AFSPC's readiness and demonstrate the command's warfighting skills. Guardian Challenge creates competition-tough crews; improves readiness and combat capabilities through preparation, innovation and sharing; enhances esprit de corps; and strengthens teamwork across all mission areas in the command.

The competition is the only peacetime opportunity for Air Force space wing teams to fully demonstrate the effectiveness of their mission training procedures in a competitive environment. Guardian Challenge is also the only competition Air Force-wide for helicopters.

Competing units included the 21SW, Peterson AFB; 30SW, Vandenberg AFB; 45SW, Patrick AFB; 50SW and

310SG, Schriever AFB; 90SW, Warren AFB; 91SW, Minot AFB; and the 341SW, Malmstrom AFB. Also, Royal Air Force members from RAF Fylingdales, United Kingdom, participated with the 21SW.

Functional area winners included: Space Operations Crew, 30SW; Spacelift Operations Crew, 5SSS, RAF Feltwell; Missile Operations Crew, S-263, 91SW; Missile Code Controllers, 91SW; Missile Communications, 341SW; Missile Maintenance, 90SW; Security Forces, 21SW; Spacelift Maintenance, 30SW; Space Communications, 21SW; Helicopter Operations, 30SW; and Chefs, 91SW.



Teddy, the Ax Handles and Minot's Winning Team

**AAFM and GC (Cont)** - asked by 20AF to provide trophies for the winning missile teams, since individual team members did not get awards as part of the competition itself. We have continued to provide around 20 trophies per year to the members of winning missile teams in each area of competition.

Throughout the following seven years, the event has improved each year. While unit displays were eliminated, contractor participation increased each year. The Contractor Exposition now fills the entire ballroom at the Vandenberg club - this year AAFM had to relocate to the entrance area because of the large number of contractor displays. We had a lot of visitors, and saw many AAFM members who were at the competition. We also added about 60 new members and exchanged many logo items, CD-ROMs and pins for donations.

In 1997, AAFM was asked to provide a memento for each unit participant, when the local AFA chapter decided to stop taking part in the annual event. We presented a special commemorative mug,

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**AAFM and GC (Cont)** - with logos recognizing the 15th anniversary of Space Command, the 30th of the competition and the 50th of the USAF. In 1998 and since, we have provided commemorative coins with our logo on one side and the Guardian Challenge logo on the other. Your President, Jay Kelley and the executive director present a representative coin to the Space Command director of operations during the awards banquet. Jay gave a rousing talk this year that got the competitors on their feet and loudly cheering.

For those who remember the blue plastic scoreboard and the enlisted scoreposters, a big change is obvious. Score posting has evolved into an electronic event that combines the announcement of competition results with the award of trophies. A giant video screen with rolling numbers shows the score for each team, and a second screen summarizes the results for each event. In the old days, serious, non-smiling noncommissioned officers moved numbers around the blue board, the score poster (now called the Judge, this year MGen Judd Blaisdell) watches the numbers spin and then asks "Is this high enough?" The suspense finally ends when the three reels lock in place with the final score. The winning team comes to the stage as soon as the winner is announced and is presented trophies for the specific event.

GC 2001 saw more changes - for the first time in several years, an opening ceremony was held. Major activities are conducted in the helicopter hangar on the flightline - there are too many participants for any other base facility. At the opening, each team was introduced and entered with their own appropriate video clip shown on the giant screens, their "theme" music and the team mascot. Minot makes an especially noisy entry each year, since team members carry ax handles that are slammed into the floor or tables in unison. The previous year's winners return the Blanchard, Aldridge and Schriever trophies to the judge, and the competition is formally opened.

This year, missile codes and spacelift maintenance teams joined the others - competitions now include missile, space and spacelift operations, missile and spacelift maintenance, missile and space communications, security, helicopter operations and missile site chefs. For 2001, the missile maintenance team included missile maintenance, e-lab, pneudraulics, facilities and munitions.

The final event for the competition, the awards banquet, features Santa Maria Barbecue served to over

500 attendees. Gen Ryan, the AF Chief of Staff and Admiral Mies, CinCUSStratcom, joined Gen Eberhart at the banquet. For the past three years, the evening has included a special video featuring a Hollywood star talking directly to the competitions - this year, the video featured actor Bill Smitrovich, who has portrayed generals in several films (Maxwell Taylor in Thirteen Days, as well as roles in Independence Day, Air Force One, Fail Safe (the recent TV version) and many others. This year, not only was he on the giant screen - he was at the head table and gave a short pep talk before the awards began.

Guardian Challenge gets better every year - and the young men and women who operate, maintain and support our missile and space systems have an excellent opportunity to show that they are the "Best of the Best."

## Missileer's Glossary, Part Two

*In the March 2001 issue of the AAFM newsletter, we had an initial glossary of missile terms, acronyms and nicknames. A number of members sent additional terms from a variety of missile systems - they are included below. Special thanks go to members John Stibravy, Joel Susman, Pat Phelan, Tom Muraski, Clyde Owen, Joe Andrew, Harold Renninger, Tom Parson, Ron Bishop, John Mills, Dick Boverie, Richard Weigert, Tom Jewett, Phill Layman, Carlton Stidsen, John Frye, Mike Veres and Mike Fabbri. This series may go on for a while - there definitely are more terms that we haven't yet listed.*

**360-6** - annual inspection performed by MM facilities maintenance teams (dash 6 referred to the last digit in the tech order prescribing the inspection, 21M-LGM30A-6).  
**4751ADMS** - Bomarc Test and Evaluation Sq. at Eglin AFB Field 9. The unit also did initial cadre training for the tactical squadrons

**564SMS** - Atlas strategic missile squadron at Warren from 1958 to 1965 Crew LO-3 of this unit were the first to launch a ICBM without Convair involvement. No cabinets or panels on the launch site were BOI'd (Break of Inspection) sealed by Convair.

**7-Level** - the common name for the small screw driver often carried by maintainers in their shirt pockets. (Officially the term 7-level referred to the third of four skill levels attainable by enlisted people (3, 5, 7, and 9)

**90 Day Activity Inspection** - An inspection conducted by the Wing Quality Control Section every 90 days to determine the readiness state of all the hardware at an Atlas D E and F site

**APCHE** - Automatic Programmed Checkout Equipment. (Before MAPCHE)

**A&M** - Assembly and Maintenance, or the A&M build-

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**Glossary (Cont)** - ing where this was accomplished.

The A&M building could house two missiles with a mono-rail above with two hoists to aid in the assembly and dis-assembly operations (BOMARC)

A-Paging - Task of verifying the accuracy of every page in a TO using the latest change. Very important all the time, but especially true for 3901SMES visits!

ATRAN - Automatic Terrain Recognition and Navigation map-matching radar guidance system used in a Mator variant (TM-61B) and the Mace.

AVE - Aerospace Vehicle Equipment

**Bear trap** - found under floor in capsule- either at LCF or LEB — used to drain away water seeping into site - you dont want to get caught in it

BFT - Big F\*\*\*\*\*, or Fancy Truck. Used to notify PT drivers that a big rig is about to pass the weapon convoy

BMAT - Brooms, Mops, And Trash

BMAT - Ballistic Missile Analyst Technician - the general enlisted expert of the early missile systems. He assisted other maintenance personnel in trouble shooting and repair, and was also part of the Launch Crew

BMT - Ballistic Missile Transporter

BOI Seal - Break on Inspection seal by contractor on new equipment and later used by the AF to ensure equipment was not opened without authority.

Bomb Swap - Replacing one or all of the warheads on a MMIII or the RV on earlier MM

Boot - new guy in shop

Broken Arrow, Bent Speer, Dull Sword - Nick names for accidents/incidents involving nuclear weapons. Broken Arrow was the most serious, and indicated the possible loss or destruction of a nuclear weapon.

Burger Shack - A locally-owned hamburger/ice cream stand in Mohall, ND frequented by Minot's November-01 crews on the drive home from alerts

**C-163 Control monitor** - AGE test equipment used to locally start up/shut down or poll status of a Wing 6 (Grand Forks) or Wing 1 Squad 4 (Malmstrom) LF and missile

CAFI - Commander's Annual Facilities Inspection. A great chance to watch Lieutenant Colonels on their hands and knees, scraping wax off the floor with razor blades.

Carry all - we now call them Suburbans

C/C - Coordinate Converter (BOMARC)

Cherry Picker - The high lift bucket used to work on the Jupiter Guidance Set while the missile was in the vertical position, or a high lift device used in many systems

Clamshells - protective sleeves installed on the personnel

access hatch cover actuating rods at Minuteman sites to ensure that the hatch did not close prematurely while people were inside.

Code 55 - The date a 4-year controlled missile tour ended and someone was available for reassignment.

Cooler - the Minuteman ground chiller unit for keeping the can cool while in the silo

Cops or copper - site security detail (also known as guards)

C/S - Command System (BOMARC)

**DEW** - Distant Early Warning (Network) DEW Line. (BOMARC)

Donkey d\*\*\* - there was a technical name for this but it was a jumper plug found on one of the racks on the upper lever of the of the LFs that you had to remove & reinstall (cycle) to reset IZ security —before Rivet Mile mod

DSAP - Data Storage and Processor unit in the earlier Minuteman LCCs - equivalent to the MPCU in the later MM systems, but not as sophisticated.

DSCS/SCS - Digital Safety Control Switch/Safety Control Switch, Manually safes the LF when maintenance team is in the LER

Dutton Zero - The diner at Dutton, MT closely situated to Sierra-0 and Romeo-28 (the training LF). They had the best sticky buns west of the Mississippi and absolutely no atmosphere.

**Eddy's Corners** - Regular stopping place for Minuteman troops on the way to and from Echo, Kilo, and Mike flights, at the intersection of High

way 87 and 191, about 80 miles east of Malmstrom.

EMMCC - Erection Mechanism Motor Control Center, a panel located in the electronics room of a Atlas-D launch pad. Used to manually control erection cycle

EMT- Electro Mechanical Team member (or 316er), ground maintenance personnel for Minuteman, often jokingly called upon to do "Every Mother — Thing".

A two man team that was basically jack of all trades in early Minuteman days. They worked on electronics, environmental control systems, power production, security systems and anything else that needed work. A lot of the items they worked on were later branched out to specialized teams. They were dispatched to launch facilities when missiles went off alert. These teams also often performed tasks that didn't fall into any other team's area of responsibility (translation: general gofers)

Escape tube - in MM LCCs, a supposed way for the crew to get out of the capsule after everything else was destroyed. That is, if they could open the hatch with a

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**Glossary (Cont)** -huge wrench, don Chemox, drain the sand, and dig out the rest of the way with folding shovels. No one seemed to know where the top end was, but folklore put it someplace under the sewage lagoon.

Esthetic curtain - The privacy screen around the toilet in the back of a MM Mod capsule. The larger Deuce capsule had a wall there.

E-Van - Electronics Maintenance Van - Used by EMT to transport test equipment for testing the electronic racks in early Minuteman days. It had a lighter duty hoist than the M-Van.

Expo - Ford Expedition used to ferry missileers, MAF chefs and FMs to the MAF.

Express - coming very fast i.e. when a maint guy tossed down a box of rags from top side of the LEB he yelled "express" to warn the guys below (there was also the "L-Van Express" that got you back home)

Facility Manager - NCO in charge of the LCF/MAF

**FCO** - BOMARC Functional Checkout equipment that checked out the entire missile in the assembly and maintenance before loading the missile in a shelter. There was also a functional checkout van to check the missile-shelter compatibility and for system troubleshooting in the launch area

FCS - BOMARC Functional Checkout Set. Equipment used to perform the missile confidence checks

Fish Bowl - under the floor, usually contains the Bear Trap in the bottom

FLFS - Free Launch Free Impact Schedule, complex launch timing documents that caused more than one crew to fail a check.

Foil packs - SAC's answer to TV dinners: food prepared in a central kitchen at Warren, then frozen and sent to LCFs everywhere. Do you remember what a #39 was? And could you tell the difference between it and a #52?

Force Mod - Informal name for the Minuteman system upgrade program that took place in the mid-60s

Forty-Eight - 48-hour alert usually caused by excessive snowfall preventing your relief crew from arriving when they were supposed to. At Minot AFB it earned you a "48" pin from your squadron

**Gag Bag** - Emergency breathing apparatus carried whenever you entered a Titan II silo

GAT- Ground to Air Transmitter. Used during the cruise phase of the Bomarc to guide it to the target area. Once locked on to the target the Bomarc was in control of its own intercept.

G&C Coupler- the ground equipment unit that interfaced with the can

GCO - Guidance Control Officer, second officer on a Titan I or Atlas D crew, responsible for the radar guidance system

GFE - Government Furnished Equipment

GMT - Greenwich Mean Time, or Zulu Time

Groobers - a musical group composed of crew members from Warren — famous for their 1975 Olympic Arena rendition of "...and nothin's too good for the missilemen

Guillotine - The panel that sealed the collimator window before a launch. Part of LECS

**HD&R System** -Hold Down and Release system

HICS - Hardened Intersite Cable System. The cable system that connected all LFs and LCFs in Minuteman

House Mouse - What the FM was sometimes called

House—support shop that you work out of e.g. FMT

**IAC** - pronounced eye ack— instrument air compressor

IFs - In-flight lunches. Staple diet of Minuteman maintainers in the 60s and 70s

IMIDT - Interceptor Missile Interrogation Radar Decoder and Terminal (BOMARC)

IMPCE - Interceptor Missile Prelaunch Control Equipment (BOMARC)

IMSOC - Interceptor Missile Squadron Operations Center. This was the electrical/electronic nerve center, located in the composite building that also housed supply, motor pool shops, offices, heat and power generation and most other support services. (BOMARC)

IMSSCE - Interceptor Missile Squadron Supervisors Control Equipment (BOMARC)

IMSSS - Interceptor Missile Squadron Supervisors Station. Monitored status of missiles, located in IMSOC. (BOMARC)

IMU - initial Measuring Unit (part of the can)

ITOR - Intercept Target Optical Recorder (BOMARC)

IRFNA-Inhibited Red Fuming Nitric Acid-The Bomarc A booster oxidizer

**Jacked up** - what happened when some one used the duress word or misauthenticated - you usually got a visit from the cops - sometimes resulted in "spread-eagled"

Jet-butt - Term of endearment and admiration local Montana residents had for our men in uniform.

**Kibby's Corners** - Regular stopping place for Minuteman troops in Stanford, 50 miles east of Malmstrom

Kluge - An unauthorized jumper wire used to keep a missile in the green.

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**Glossary (Cont)** - Knuckle draggers - Slang term for Four-Fours (443x0)

**LASO** - Lower Altitude Search Option. The Bomarc could cruise in its target search at low altitude, or high altitude depending on commands from the SAGE center.  
**LCCFC** - Launch Control Complex Facilities Console, the nerve center of the Titan II site - according to some, where the MCCC slept.

**LCO** - Launch Control Officer, early name for a missile combat crew member who manned the launch console

**Lead Logs** - Counterweights put in the flame deflector of the launcher on Atlas F for PLX using Nitrogen instead of LOX

**LECS** - Launch Environment Control system The modification to Minuteman LFs at Vandenberg which allowed repeated hot launches, including range interface equipment, LF survivability modifications like the gullotine and lots and lots of pockey.

**LECS** - Launch Equipment Checkout Set (BOMARC)

**LFT** - Liquid Fuels Technician. Liquid fuel - term used by MM crew for Titan (and earlier) systems and crew members. The opposite, of course, was "solid fuel".

**LO** - Lock-on

**Lolly Pop** - those strange looking antennas top side of the LF that provided OZ security before the rivit-mile mod.

**L/S** - Launcher Site. Usually composed of one BOMARC flight (28 missiles) or detachment (56 missiles) also included warhead storage (armament building) and a security gate building.

**LSM** - Launcher Status Multiplexer (BOMARC)

**LV** - Launch Verification, a process that simulated the launch sequence in Titan II, up to and including dumping water through the Sound Attenuation System into the "W" (see below). Since the launch duct had no drain ports in the "W", after every LV, two crew members at a time would take turns scooping water out, barefoot in cold water, with Whites rolled up to their knees - not one of the more glamorous Titan II tasks.

**L-Van** - maintenance vehicle (covered pick up truck)

**MAB** - Missile Assembly Building.

**MAZH** - Missile Azimuth Heading (BOMARC)

**Malfunction Junction** - The slang term for Malmstrom

**MAMS Building** - Missile Assembly and Maintenance Shops building

**Mezzanine** - A second level electronics room located on an Atlas-D launch Pad

**MFT** - Mighty Fine Technician (Missile Facilities Tech)

**MGACG** - pronounced Ma-gack - the Missile Guidance Alignment Checkout Group, a 6 by 9 foot computer in the Titan II LCC use to feed targeting to the missile. A mysterious console that only the BMAT understood - and made others afraid of computers forever.

**MHSU** - Mobile Hydraulic Servicing Unit. Provided hydraulic pressures of over 3000 Psi to test the missile hydraulic systems. (BOMARC)

**MHT** - Missile Handling Team (Minuteman). Four-person teams that drove the TE (transporter-erector) and replaced the missile downstage

**MIE** - Mobile Inspection Equipment (BOMARC)

**MIGSERT** - Missile Ground Support Technician in Atlas D,E and F

**MIRV** - multiple independently targetted re-entry vehicle  
**Missile Target Seeker** - The BOMARC missile radar for target acquisition, terminal guidance.

**MIU** - Mobile Inspection Unit. A large semi trailer with the FCO and LECS equipment taken to the missile shelter to test the missile and its systems (BOMARC)

**MMT** - Missile Maintenance Team (Minuteman). Six-person teams that changed RVs and G&C cans.

**MOCP** - Missile Out of Commission, Parts - became NORS

**MORS** - Missile Operational Reporting System, similar to VRSA but reporting was done through code numbers

**MPCU** - Message Processing and Control Unit. That was the very simple-minded computer in each LCC that ran the Sylvania WS133B "Deuce" system, before the days of CDB and the WSC. Anyone's basic Palm Pilot of today has many orders of magnitude more processing power than the MPCU

**MPP** - Minuteman power processor- monitors & controls commercial and stand by power on site (that funny blue box with all the blinking lights in the LEB or LCEB)

**MSAs** - Mine Safety Appliance Airpacks. Just like Scott Air Packs, different manufacturer

**MSAT** - Missile Systems Analysis Technician - early name for BMAT

**MSR** - Maintenance Status Reply. Was a defect code sent to the LCC from the LF indicating an equipment or systems failure or an alarm.

**MTP** - Missile Transfer Panel, located in missile bay of Atlas-D coffin. Used when transferring the missile between trailer and launcher. M-van or b-van - maintenance vehicle usually a 2.5 or 5 ton box truck

**MV** - Missile Verification, a Titan II process that exer

(Continued on page 10)

**Glossary (Cont)** - cised the bird itself, including the Stage I engines, but not firing the squibs. During Standboards, both an MV and an LV were performed.

MXU-345/E - the official designation on the nameplate of the folding bed that was at the back of Deuce (maybe also Mod?) capsules, for emergency use only. In the days when sleeping on alert was forbidden, it was said that some crew members would "inspect the MXU-345/E" very closely and at great length.

NCU - nozzle control unit No Lone Zone ù areas containing nuclear weapons in which the presence of a lone individual was not authorized

NG - no go

NOD - T/S Antenna Pointing Angle (BOMARC)

No Lone Zone - area where the two man policy applied

NORS - Not Operationally Ready, Supply

NTCU - Nose Temperature Control Unit.

**OST** - Operational Suitability Testing conducted on Matador and Mace missiles

**Pad Refurb** - The maintenance team at Vandenberg that refurbished LFs after every launch. These guys applied the pucky

Peacekeeper - (besides the well know weapon system) that green armored truck with all the pretty colored lights and sirens on it used by the cops

Pipe Pusher - other half of the Deaver Mule

Pissem-6 - Informal acronym for the PSM-6 multimeter used by maintainers everywhere

Porno drawer - an equipment rack drawer in the MM LCC that contained no electronics, but could be opened to store, um... reading material for the crew

PT - Payload Transporter

PVD - Propellant Vapor Detector; also carried by every team entering Titan II silo.

**RATO** - Rocket Assisted Takeoff solid rocket booster used by Matador and Mace

R/B or RB - Roll Bulkhead. It supported the T/S and stayed relative to the earth's surface when the missile rolled.(BOMARC)

Red Bed - Facing both capsule chairs towards each other in a Minuteman capsule, reclining one and putting your feet up on the other to simulate a Lazy Boy recliner.

Red X, red W, red diagonal - symbols used on maintenance forms (209, 210) to indicate the seriousness of a malfunction. Red X was the most serious and indicated that the equipment could not be used.

Rivet Mile - upgrade of Minuteman sites in late '80s

RON - Remain (Rest) over night; described staying at a Minuteman LCF over night, either planned or whenever you couldn't make it home due to a number of reasons. The problem with RONing was it made the maintenance team vulnerable for dispatch to another LF rather than return home after their first job was complete.

RON bag or kit - contained comfort items in case you had to RON at the LCF (ouch!!)—some of us carried an anti-RON kit that contained hard to get items so that you and your team would not RON

RV adapter - The adapter on the top of the Atlas-D tank section where the RV was mounted

RV - reentry vehicle

**QA or QC** - Quality Assurance or Quality Control eval team - you didn't want to see these guys waiting for you at site - the odds that your team would RON was extremely higher with these guys around

**SAFO** - Safe Altitude Fuzing Option (BOMARC)

SAGE - Semi-Automatic Ground Environment, developed to monitor all airborne threats and control intercepts to counter these with the BOMARC, Nike and Air Defense Command interceptor aircraft

SAS - it had two meanings - early in the life of missiles, it meant sealed authentication system (the "cookies", or documents crews used to authenticate messages. In Minuteman, it also was a new electronics mod called the Secure Authentication System

SATE - Semi-Automatic Test Equipment, semi-trailer based test set to check out Atlas D Airborne Guidance Set, consisting of the Rate Beacon, Pulse Beacon and the Decoder. It was supposed to be pulled to the Complex, used to check out the guidance and then returned to the base. Warren never did pull it to a complex because if moved inside the MAB it normally took several days to get a good self test.

Sector Commander - In Titan II, each squadron had three sectors of three missiles each, with a major or lieutenant colonel in the position.

Sheriff or Sky Cop - The armed Security Police escort for a dispatching team

SMUT - Site Security Maintenance Teams

Sniffer - Draeger gas detector used to sense traces of MMH or nitric acid. Used with MMIII to detect reentry system leaks.

Sunflake - an image that was half-sun-half-snowflake, this was the logo of the Grand Forks Chamber of Commerce. It was frequently printed with the slogan, "We

(Continued on page 11)

**Glossary (Cont)** - live here because we like it here."

321SMW personnel might not have been convinced

Strat Alert - Short for Strategic Alert. One of several modes of Minuteman readiness for launch.

SRC - System Readiness Check-A total system check of the missile and shelter before placing the missile in Ready Storage status. At GLCM bases, the SRC was the part of the wing battle staff that kept the base operational - the survival recovery center

SMSB - missile support base (also called home)

SCS - see DSCS

SM-80 - Original designation for the Minuteman missile

Stretch - Putting an Atlas missile in physical stretch whenever one or the other of the fuel and oxidizer tanks were depressurized, for various maintenance tasks.

SCS - safety control switch, the first switch you would secure when you entered the silo to make sure the missile could not launch while you were down there!

SHANICLE - Matador Short Range Navigation Vehicle guidance system employing a pair of "master" and "slave" microwave ground stations to generate an azimuth for the missile's flight to the target, and a second pair of master/slave stations to generate the distance to the target.

Seventy-Two - Similar to a "48", but longer

TAT - Targeting and Alignment Team (Minuteman). Three-person teams that lined up the missile so that it knew where it was before launching. Name later changed to CTT, Combat Targeting Team, to enhance the stature of the officer team member.

Tank Watch - Monitoring the fuel and oxidizer pressure gauges on an Atlas, either in the MAMS on the trailer or at the launch site.

TCC - Trip (or Transportation) Control Center. Transportation Squadron's version of Job Control. They kept track of vehicle arrivals and departures and timed vehicle movements from point to point. Occasionally they called the squadron commander with an opinion that a vehicle may have moved too fast from point to point.

TEAD - Technical Engineering and Analysis Division - later became TEB (Technical Engineering Branch). Officer engineers and enlisted people with electronics backgrounds, working as 2 man teams, 1 officer and 1 NCO. Initially had to be at least a TSgt to get into TEAD, later waivers allowed SSgt's. High level trouble shooters for all Minuteman able to use contractor documents for troubleshooting (other maintenance teams could not use anything but the standard AF Tech. Orders)

TIC - Trainer Instructor Console, which controlled the MM MPTs. Located on a raised, enclosed platform that looked down on the crew being trained or evaluated. TIC operators also had to play the part of everyone that the crew could talk to on any means of communication

TJ & the Bullfries - a musical group composed of crew members from Grand Forks — famous only for their appearances at Bump's Bar in Arvilla, North Dakota

TRUD - Time Remaining Until Dive (BOMARC)

TRUT - Time Remaining Until Transition (BOMARC)

T/S - Target Seeker. Radar unit in nose of missile (BOMARC)

TTB - Team Training Branch. The maintenance training folks responsible for post tech school on-site and recurring training.

Top side - were the sun light shines (whats that?) on a missile site

UDMH - Unsymmetrical Dimethyl Hydrazine - it made the big red cloud in Titan II if it leaked.

Uff-da! - all-purpose exclamation, the exact meaning of which is known only to residents of North Dakota

UH-1 ("Huey") - helicopters that transported personnel and equipment from the base to LFs/LCFs

Vandenfog - Typical weather at Vandenberg

Vandyland - The slang name for Vandenberg AFB

VRSA - Voice Reporting Signal Assembly, the Minuteman unit that would aurally report missile and ground equipment faults

V-Van - RV G&C van

VRSA - Voice Reporting Signal Assembly. Used in the Minuteman 1 & 2 LFs to verbally report faults to the LCF.

WSCE - Weapon System Calibration Equipment. Used for verification testing of the mobile test equipment. (BOMARC)

ZULU - Zulu or Greenwich Mean Time

**Reunions (Cont) - 44BG/BW/SMW** - 15-18 Oct 2001, Bossier City, LA. Contact Mike Yuspeh, 504-283-3424, [mikeyuspeh@worldnet.att.net](mailto:mikeyuspeh@worldnet.att.net)

**341SMW EMT** - 18-20 Aug 2001, Great Falls, MT. Contact Tom Pritchard, 541-745-6340, [tfpritchjr@home.com](mailto:tfpritchjr@home.com)

**Looking for your Story?? - We have gotten many great articles from members recently - be patient and yours will be in an issue soon**

**Vision (Cont)** -the familiar civil defense relics, such as the crackling radiation detector, sit opposite the panel. While this site is not an official museum, everyday it becomes more and more like it. Deeper into the complex there are round, dimly lit access tunnels leading to the crew quarters, control room, generator chamber, kitchen, and other spaces. These areas are currently filled with the county's archival records. When in operation the entire site was self-sufficient, having a source of water and a generator that was designed to run indefinitely with minimal maintenance. The temperature throughout the site never goes above eighty or below forty degrees due to the insulation provided by the ground.

Even back when it was operational, the missile didn't really pose a threat to the men stationed there or the nearby community. This site is able to survive a one-megaton blast from a mile and a half away. It can withstand up to twenty-five pounds of pressure per square inch. The crew had an escape hatch in case anything should go wrong. There were a number of safety redundancies that ensured the powerful bomb had no chance of exploding either in its bunker or anywhere short of its destination point. Even then, the missiles had a failure rate of approximately one in three.

Now nuclear defense is an entirely different story. Two people can send up to ten missiles in under a minute. Minuteman missiles carry three one-megaton warheads, and can be housed in less than a quarter acre of space. Ambrose has taken active steps to make sure people know what it was like back in the time of the Atlas E. His goals include getting old relics belonging to the site, spreading the word out about the site, and increasing the tours given. Three statewide network affiliate television stations have been out to visit the site and have done informational segments on the progress of the restoration and the history behind this project. Currently, there have been two open houses, each attended by more than three hundred people. An estimated five hundred people have also taken the tour independently. The tour is free and available to who asks. One man, with a vision and the support of the county he works for, has accomplished all this.

**564MS (Cont)** -gram replaced the entire force of Minuteman Is with Minuteman II ICBMs and added the final 50 missiles at Malmstrom. The 564SMS, a WWII bomber squadron and Atlas D missile unit at Warren AFB, brought the 50 Malmstrom Minuteman IIs online and completed the 1000 missile Minuteman force. The 564MSquadron toasts its heritage annually at a dinner to honor those who have

served in the squadron. The 2001 event will be at Club Malmstrom on 20 October, honoring Crew S209 and its many accomplishments. Col (ret) Walt Skrainy is the guest speaker. See the Reunion section for details.

**Moore Missileer?** One of our members inherited the Missileers pin shown below, circa 1959 with the name of "Moore" on it. Anyone with information on this pin is encouraged to contact AAFM or member Jim Maclean.



## AFSPC Enlisted Recognition

Life Member Jerry Strong made a significant contribution last year that began our involvement in the annual Space Command enlisted program. Jerry made the donation in memory of his wife, and his generous contribution has been joined by gifts from other members. Thanks to the Jerry and several others, our new Enlisted Recognition Fund provided \$1,200 for the 2001 program. In April, Jerry and AAFM President Jay Kelley participated in a number of activities during the week-long program in Colorado Springs. AAFM thanks Jerry for letting your association help recognize our outstanding enlisted missile and space people.



Jerry Strong and some of Space Command's outstanding noncommissioned officers