



### Minuteman Comes and Goes



The Warren Team

### Last Grand Forks Minuteman III Silo Destroyed - From an AF News Release

With the force of 800 pounds of explosives, contractors imploded Minuteman III missile silo H-22 at 11:13 am. on August 24th near Petersburg, ND. It was the last silo of the 450 intercontinental ballistic missile force requiring destruction under the Strategic Arms Reduction Treaty I. The first silo implosion at the Grand Forks missile complex took place October 6, 1999. Contractors imploded 13 more that year, then 86 silos in 2000, and 49 this year. (Photo by Tech. Sgt. Mark Bucher)

### Minuteman Returns to South Dakota - By Staff Sgt. Melissa Phillips, 90SW Public Affairs

The term "wrench turner" equals freedom for many Americans, mainly the peace of mind to travel the highways in a serviceable vehicle without the fear of being stranded along the roadside. In the Air Force, when the term "wrench turner" pops up in casual conversation, most people automatically think of an aircraft mechanic. However, there is another specialty of "wrench turners" who are often forgotten: the Intercontinental Ballistic Missile maintainers. They spend 16 hour days turning wrenches some 80 feet under the ground in missile silos located in desolate areas of Colorado, Wyoming and Nebraska.

On June 14, twenty-seven of these "wrench turners" and support personnel from Warren AFB, WY., were invited to Ellsworth AFB, SD, home of the 44th Missile

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Implosion of LF Hotel-22

#### 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

**2002 Meeting** - The first registration for our next National Meeting is on the cover - get yours in early for our special 40th Anniversary of Missileers involvement in the Cuban Crisis.

**"13 Days"** - Speaking of the Cuban Crisis, if you have seen the film with Kevin Costner, did you notice the scene of the Titan I and B-52, filmed at Beale, the Atlas F ready for launch and the Titan II? And how about the B-52 with four Skybolt missiles under the wings?

**Newsletter Printer** - Leesburg Printing did a great job on our June newsletter, but board member Bob Kelchner said he would prefer to do the job for us - so Bob and his Allegra Printing are back as our printer.

**Stories and Articles** - You will notice that we have a lot of authors for this issue - I mentioned in the last newsletter that I had a lot of good submissions, and they continue to come in. This issue features stories, articles and letters from 20 missileers - almost all of you have some good stories or some great technical articles - keep sending them and they will be included in future issues.

**Museums and Grants** - The 2001 grant applications went to museums in July. As a side issue, the SAC museum has changed its name to the Strategic Air and Space Museum - something many folks disagree with. AAFM

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**Printer** - Allegra Print and Imaging, 20905 Western Ave  
Torrance, CA 90501, 310-212-7727

*Association of Air Force Missileers*

**PO Box 5693, Breckenridge, CO 80424**

AAFMM@afmissileers.org www.afmissileers.org

Phone/fax 970-453-0500

will continue to be a strong supporter of the museum, but we did voice our concern about deleting "SAC" from the name.

**Board Members** - We will elect four board members in the spring - the terms of Dayna Castro, Dick Keen, Mike Lehnertz and Tom Neary expire in 2002. If you would like to serve or to suggest someone, let AAFMM know. The 2002 ballot will be part of the March newsletter.

## 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.

**Missile Glossary Additions** - Several members sent new terms and corrections to our two-part glossary issue

**Handover** - Each Titan I site had three silo-stored missiles and two silo-stored guidance antennas, and there were three sites per squadron typically 30 miles apart. The ground guidance system at each site contained targets and coordinates for the location of all nine of the squadrons missiles. If incoming missiles and launch catastrophes destroyed both guidance antennas on a site and the site had remaining missiles to launch, then the guidance officer could telephone (via buried cable) his counterpart at a site which had completed its launches and identify his next missile to be launched. The second site would slew its guidance antenna to point toward the missile to be launched. Upon launch a Handover signal went on a dedicated underground telephone line to the second site, automatically commencing the process of acquiring the missile as it rose over the horizon and guiding it to target. *Gary Hoselton, mbrno L138, Portland, OR*

**Note** - *I remember early testing of the Handover concept at Mt Home - a helicopter taking off from C-Site and using the A-Site guidance system to lock on to a receiver in the helicopter - your Executive Director*

**BFRC** - The reference made to the BFRC in the newsletter brought back a memory or two. There were also BFBCs that were blue clouds composed of UDMH (unsymmetrical Dimethyl Hydrazine), which was the fuel for Titan II. The red clouds were nitrogen tetroxide, the oxidizer. What you really did not want to see was a BFRC nearing a BFBC, because the two were hypergolic! We used casual references to the various BFxCs when we were on the main base at Vandenberg to deter undesired site visitors. At that point in time I was a quasi-member of the SAC acceptance team for that missile. *Chuck Reynolds, mbrno L180, Salado, TX*

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**Letters (Cont) - PAL** - The Permissive Action Link (PAL) that was used to protect the warheads on the MACE in the NATO environment. Of course, you could always include the AAL - Authorized Acronym List (tongue in cheek). *Robert G. (Gill) Goering, mbrno A0071, Clinton, NY*

**IMU** - IMU has a typo INERTIAL Measuring Unit - not 'initial'. *Chuck Dwyer, mbrno A1164, Endwell, NY*

**Some Added Terms** - SACumcized - To become indoctrinated with the SAC way of doing business. Usually said by someone coming from another Command.  
 North Dakota TDY - To spend at least one night TDY in North Dakota. People would refer to it as: "Oh yes, I've been there! I spent a week there one night!"  
 Greenbaum U - The South Dakota State Master's Degree Program at Ellsworth. Professor Greenbaum taught so many courses there that people started to call it Greenbaum University.

Boondoggle - A TDY trip to anywhere outside Minuteman Country. A trip to Vandenberg during the winter was an extra special boondoggle. It meant you could take your golf clubs with you, the ones you had stored in the basement for months.

New Underwood Expressway - The gravel road north of Interstate 90 that you took to get to the 67SMS. It was the scene for many races because the lead vehicle didn't get any dust in their faces. The tread marks of Major Austin Wade, the A. J. Foyt of the 44SMW, can probably still be seen. He usually won most of the races, especially when he had the V-8 station wagon that crews pulled rank to get to drive.

Fly-or-Drive - The complicated decision process to determine if crews would fly or drive to their alert tours. It was usually a hurry-up-and-wait process because the helicopter utilization rate was the primary factor. Who can forget those phone calls: "We're delaying pre-departure briefing three hours to see if the weather clears." These were always followed by an "Aaaaaaughhhhhh!" from the crew members, especially those out on alert. Once you got to the Missile Building, you knew you'd be leaving by vehicle at 1500 hours. *Chuck Gordon, mbrno A1954, Englewood, CO*

**UDMH (Again)** - UDMH does not make a red cloud, that is Nitrogen Tetroxide, the oxidizer. UDMH is one

component of the fuel, a 50-50 blend of UDMH and Hydrazine, called Aerozine 50. The Titans still use these propellants. Nitrogen Tetroxide is also referred to as N2O4, where the numbers are the subscripts of the chemical formula. *Jim Tegart, mbrno A1897, Littleton, CO*

**UDMH (More)** - Just a brief observation by a Titan II veteran. UDMH is sneakier than implied. It leaves the colorful BFRC characteristic to its N2O4 (Nitrogen Tetroxide) oxidizer counterpart. Relatively colorless but not odorless UDMH just floats into the unwary and kills him/her as a nerve agent (N2O4), on the other hand, burns out the lungs, etc by joining with body water to form a very bad form of Nitric Acid). *Stan Roadarmel, mbrno L164, Santa Maria, CA*

**INST** - In 1966 I was chosen as an Instructor MCCC in the Titan II system at the 381SMW, McConnell AFB. I was given a blue baseball cap with "INST" in big white letters on the front. One of the other instructors said to me, "Now, the INST doesn't stand for Instructor, it stands for 'I never said that', in case somebody comes back from flunking a Standboard after you have trained them." *Robert A. Dreyling, mbrno A1385, Cypress, CA*

**564SMS** - I read with interest the article, '564MS Heritage' and would like to offer a different slant than the provider of the information in the article. One, S209 was never in danger of not being replaced that first day due to lack of qualified crews. There were 6 or 7 crews that were qualified and all had gone through the same training program together with S-209. My crew was qualified and replaced them the next day. The launch panels, keys and EWO documents were brought out on our tour thus I had the privilege of calling the command post that "Papa was combat ready". Two, we had complete and adequate crew TO from day one. Remember Grand Forks (I sure hope you do) was essentially the same system and the check lists we had were probably the same, maybe with slight modifications. I may have to go to the 564th reunion in Oct. just to make sure that Walt Skrainy tells it like it really was. *Jim Wilson, mbrno L0028, Austin, TX*

**GC2001** - Was very pleased to see your coverage in recent E-mail/member newsletter. However just a tiny reminder that those of the 576th Flight Test Squadron

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**Letters (Cont)** -(with a very long history) are the pre-competitors in most of those events. Working with 20AF judges to set the times and prep the 576FLTS sites for the competition. The oft unsung behind the scene support. *D. Rhett Ferguson, Commander, Generation Flight, 576FLTS*

**Malmstrom Visit** - I recently returned from a vacation to Montana that included a visit to Malmstrom AFB and trip to MAF A-01. I was a 10SMS missile combat crew member in the '60s and was very curious to see how missile ops had both changed and remained the same over the past 37 years. The AAFM Executive Director made the original contact for me and I was telephoned directly by Capt. Mike Gallucci to make arrangements for a refamiliarization tour. I was given the opportunity to visit with the officers of the 10MS before heading out to alert. I also briefly addressed the Wing crews at pre-departure briefing and was given a personal guided tour of A-01 by Capt. Gallucci. I was extremely impressed with the caliber of today's missileers and their demonstrated professionalism - reminiscent of the Strategic Air Command days of old. I felt a strong sense of pride that our young Air Force officers and enlisted men and women are still performing alert duties with the energy and spirit necessary in maintaining world peace. I especially want to say thanks to the individuals who made the tour possible - Maj. Matthew P. Groover (10MS Ops Officer), Capt. Mike Gallucci (Overall tour coordinator and guide), Capt. Matthew A. Marano and 1Lt Zachary D. Owen (on-duty crew), Capt. Gregory S. Nowlin (Assisted Capt. Gallucci), 1Lt Marie K. Knelange (helped with the dispatch), SSgt Craig Wines (10MS Flight Security Controller at A-01), SSgt Michael Grainger (A-01 Facility Manager), SrA Krissa Takatsuka (A-01 chef) It will be an experience long remembered.. *Joe. Lazzaro, mbrno L0011, Auburn, WA*

**Memories of Atlas** - I was a BMAT at Schilling AFB in the 550SMS. Reading over the definitions I got the distinct impression that a lot of people had a lot of fun. I just don't remember it that way. From the time we started buying the silos from the contractor it was a lot of hard work. Most of us were right out of high school and being in charge of the most terrible weapon ever conceived by man was terrifying at the least. I can never remember doing a PLX where LN2 was substituted for LOX. All we did was remove the RV and the SPGGs, receive the message for the count and go through abort with about 20 people

people in the LCC. As some of us remember we lost two Atlas F holes in Roswell due to a tanking problem. That's when the LOX tanking panels were moved from level 3 in the silo to the LCC. Then part of my job was to watch the timing on the open/close cycle of the fine load valve for pre-chilling the LOX lines. During an ORI/PLX. I remember calling for my MCC to abort 10 seconds into the count, then after abort, explaining to a 2 star out of 15AF why it was necessary and trying to show him all the logic circuitry behind the problem. Talking on the intercom system was fairly well controlled because we were checked on that during standboard checks, among other things. All in all I have great memories of my crews MCC-R53 and MCC-R48. My first DMCC was Joe Langston. Thanks for the memories. *A2C(7 Level) Mikel D. Randleman BMAT, 550th SMS, mbrno A1485, Bellevue, WA*

**LN2** - Reference the LN2 for Atlas F; yes, it was used for PLXs after the problems at Roswell. We had to drive the missile to launch position so heavy lead logs which were added to the Launch Platform to compensate for the difference in weights between LOX and LN2. So our ORIs took quite a few days. Matter of fact, we had LN2 on board when we hung our missile in the full up position during an ORI PLX. I never stared at three gauges so hard in my life. *Joe Langston, mbrno L167, Cedar Park, TX*

**GC2001 Visit** - Thanks for the help with the ticket to the score posting and Santa Maria cookout. It brought back many memories and I renewed some old friendships. I competed in Ops from Little Rock in 72-75-76-77-78-81. 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 belly and got everyone stirred up. *Bob Sullivan, mbrno A1787, Huntsville, AL*

## Reunions

**Matador-Mace** - 3-6 October 2001 at the Delta Orlando Resort, Orlando, Florida. Contact Joe Perkins 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  
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**SD Missile (Cont)** - Wing until it closed in 1994, to welcome home and tuck-in a 76,000 pound old friend.

About a year ago, Warren was asked to place a 59 foot 10 inch static display Minuteman II missile back into an empty silo to create the Minuteman Missile National Historic Site near Wall, SD. The silo had been empty since the 44MW was inactivated due to the Strategic Arms Reduction Treaty.

"Whether or not you agree with America's nuclear deterrence policy, no one can deny the impact the Cold War has had on the lives of American's for the last 50 years," said Tim Pavek, Minuteman II Deactivation Program manager at Ellsworth. "One hundred and fifty of these missiles were on alert for 30 years, and helped preserve the freedom and peace we enjoy today."

In November, the National Park Service will accept control over the static display missile, its silo and the accompanying Launch Control Facility, which is a building that housed personnel and equipment needed to maintain each missile, at a commemorative ceremony.

The two sites plus a projected visitor's center are expected to attract more than a million visitors a year, and are scheduled to open to the public in three to five years, according to Marianne Mills, Acting Site Manager for the Minuteman Missile National Historic site.

The National Park Service, with guidance from the Air Force, plans on making the LCF into an interactive guided experience where visitors can see many of the daily activities that went into maintaining a missile site. The missile silo will be an unguided experience, and visitors will be able to

walk onto the site and look down into the silo to see the missile.

Coincidentally, four members of Warren's team were stationed at the 44MW during its tenure at Ellsworth from 1963 to 1994.

"It's an honor to come back here," said Colonel Robert Mansfield, 90th Logistics Group commander at Warren, who was stationed at the 44MW from 1990 to 1992. "This site pays tribute to the many men and women - the unsung warriors, who work with little recognition - for all their hard work."

"I started my career at Ellsworth on this system," said Staff Sgt. Kevin Jones, a missile maintainer team chief at Warren. "I was there to deactivate the Minuteman II, so it was a great feeling to put one back."

For many, it was as hard as saying goodbye to an old friend, as it was to leave the very weapon system that they had so much faith in.

"I cut my teeth on this weapon system," said Lieutenant Colonel Mike Vaughn, commander of Warren's 320th Missile Squadron, who pulled his last alert duty at the LCF. "Yesterday, I traveled to the LCF. When I saw pots and pans in the kitchen and the coffeemaker in the exact same place we left it, it almost felt like the site was still on alert.

"When I pulled my first alert at 23, I remember thinking this is what is all about. Our mission was and still is the first line of defense against a nuclear attack. I will always get goose bumps when I remember that first alert," said Vaughn. *(Continued on page 6)*





**SD Missile (Cont)** -About a 100 spectators filled the stands as the maintainers placed the missile into the silo. This missile was never on alert at Ellsworth. It was used for training, but looks like any other Minuteman II.

Retired Technical Sergeant Glenn Dieball, a Box Elder, SD, resident was a missile maintainer at Ellsworth in 1991. "This is like a homecoming. I worked in this very silo. What they are doing here today is history in the making... This event shows me that all of our hard work hasn't been forgotten. The missile program is still a necessary deterrent. It has made the free world what it is today. It is one of the reason we haven't seen WWII - and I hope we never do."

For Pavek the process to get the many government agencies involved to turn the missile into a static display museum has taken close to 10 years. But, it has been a labor of love - or more correctly respect. "The Minuteman II was one of the most significant strategic weapons in US history. With the turn of a key, the missile could deliver its nuclear weapon to a Soviet target in 30 minutes or less," said Pavek.

Pavek isn't alone in his admiration for the missile and preserving its history. "I am proud of what I did here today," said Staff Sergeant Javier Cruz, a missile handling team chief at Warren. "I want to bring my grandchildren here, when they get bigger."

"For years, countless travelers have driven across Interstate 90 in western South Dakota, enroute to Mount Rushmore or Yellowstone, not realizing they had passed within sight of nearly a dozen nuclear missile sites that had so impacted their way of life." said Pavek.

With the help of many government agencies, Pavek's drive to honor the men and women who have

given so much to maintain this weapon system and the sweat and expertise of Warren missile maintainers, these two sites will allow American's to see a significant period in history. By bringing this missile home to its final resting-place, once again the High Plains warriors have become a part of United States history. Only this new breed of warriors, missileers, are from all races and backgrounds - all possessing one common bond: pride and service in the United States Air Force. Instead of defending their land with bows and arrows as the Native American Indians did on the High Plains, these warriors defended and continue to defend America with wrenches and computer consoles deep within the High Plains. In the near future at exit 131, Cactus Flat, on I-90 located in the desolate plains of South Dakota, President John F. Kennedy's "ace in the hole" will remain forever frozen in time - a reminder of the Cold War.



## THE FIRST MINUTEMAN V-1 REPORT

- by LtCol (Ret) Pat Napolitano, mbrno L0015.  
Pat lives in San Antonio

The time, October 1962 - the Cuban Missile Crisis is upon us, many US military units are in a high state of readiness. SAC, in particular, is on increased alert. Ground alert B-47 and B-52 bomber crews are briefed and ready to go from CONUS locations. Some B-47 units are deployed to overseas locations (Reflex) and some B-52 units are flying airborne alert missions. Atlas and Titan missiles are brought to a higher state of readiness. And for the first time, the nation's "Ace in the Hole" the Minuteman missile system, is brought up on alert at Malm-

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**V-1 (Cont)** - strom AFB, Montana. As each Minuteman missile achieves alert status, it is entered into the complex SAC status monitoring system which keeps track of all alert bomber and missile sorties. V-1 is the designation of the bomber and missile alert report. Keep in mind, although strategic missiles have been around for awhile, their workings, procedures, and nomenclature are still a mystery and more than just a little foreign to the flying Air Force.

Place and Scene: The 341SMW Alternate Command Post (ACP) Kilo-01 capsule. On duty are a young Captain MCCC and even younger First Lieutenant DMCCC. They are very much eager to do their fledgling unit proud by performing all their duties by the numbers. Communications problems between the Wing Command Post (WCP) and SAC HQ have caused the 341SMW ACP to take up reporting duties for the wing. The missile crisis has forced SAC to quicken the rate of posturing of the 150 missiles at Malmstrom; a portion of these missiles are hurriedly brought up on Strategic Alert. The following exchange takes place over a special SAC communications system used between the headquarters and command posts at all units:

K-01 MCCC: "Uh, Dropout, this is Malmstrom Alternate with a V-1 report."

SAC HQ Duty Controller: "Who is this again?"

K-01: "Dropout, this is the Alternate Command Post at Malmstrom AFB in Montana, home of the nations "Ace in the Hole!!"

SAC: "The nation's what hole? Who is this really? Is this you at the club again, Fred?"

K-01: "No, no, Dropout, this is really Malmstrom AFB and we are the 341st Strategic Missile Wing trying to pass some very important information to you.. Don't you watch TV? We were just featured on the Cronkite show last Sunday."

SAC: "Guess I missed that one, been on the console here at the underground seems like forever. Look, Malmstrom, what do you need? And be quick about it, we're pretty busy here you know, we have 47s reflexing back over the pond from Europe, we have 135s refueling 52s on airborne alert and all sorts of other activities going on with this Cuban thing. And besides, wiseguy, its Dropkick, not Dropout!"

K-01: "Sorry about that, Dropkick, but I have an alert status report for you...we lost a missile."

SAC: "Damn Sam, kid! How did ya lose one of

those things? I'm not real sure what they look like, but aren't they pretty big?"

K-01: "No, no, Dropkick, we didn't actually lose it, we were just directed by SAC HQ to get our missiles on alert and we did, but one has a malfunction and is now a NO GO."

SAC: "Oh, I see Malmstrom, what happened, a LOX pump break or something?"

K-01: "No, no, Dropkick, there are no LOX pumps on the Minuteman. Don't you know its a solid fueled, hardened and dispersed, highly accurate missile system with an instantaneous response time, capable of.....?"

SAC: "OK, OK, kid, I get the picture. Hurry up and tell me what's wrong with this thing, I got a real hot one here. The Mountain Home Wing Commander just brought a B-47 back from England with an MG in the bomb bay. The Customs Agent he was expecting to be on duty got sick and the replacement agent won't let him keep the car. So this O6 wants SAC to reimburse him for it! Some nerve, huh kid?"

K-01: "Well, Dropkick, we don't have those kind of problems in the missile business. Look, I am reporting that sortie 10SMS B-05 has a VRSA Channel 9 shut down and is off alert."

SAC: "A VRSA whatsit? What kind of language are you talkin, kid?"

K-01: "Its really pretty simple Dropkick, the missile's self check system has sensed an anomaly in the gyros of the guidance and control unit which could cause the missile to veer off course if launched; so the missile shut itself down. A missile maintenance team must now be dispatched from base, travel out to the missile, repair the problem and start the missile up so it can be placed on Strategic Alert again."

SAC: "How about that, shut itself right off, huh? Boy, what will they think of next? I was a B-36 Engineer, kid, used to be able to tear apart most of an engine and put it back together in flight. No calling someone to come up there and fix things like you missile people, we took care of things ourselves in the ole B-36."

K-01: "Well Dropkick, welcome to the missile age, computers are taking over."

SAC: "That's what I'm afraid of, kid, guess I just miss the sound of those big Pratt and Whitneys on the B-36. OK, enough chit chat kid, when will you get this VRSA whatsit thing fixed on B-05?"

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**V-1 (Cont)** - K-01: "Well, B-05 is pretty close in, we should be able to get out to it in a few hours. Our maintenance control is listing the Green time as 102400Z."

SAC: "Green time!! Boy, you missile guys do have your own language, don't you. OK, Malmstrom I copied, anything else?"

K-01: "Yes, Dropkick, can I have your initials?"

SAC: "My initials! What do you need my initials for, kid?"

K-01: "To prove it was you I really talked to, Dropkick, and besides it is an mandatory entry in my crew log."

SAC: "Wow! We don't trust anybody anymore do we? It's just not like the old days, we knew who we were dealing with in our B-36 units. Look, kid, my initials are Delta Foxtrot, and if you would like, I could also send you an autographed photo of me at the console here?"

K-01: "Uh, no thanks Dropkick, the initials are good enough. Malmstrom out."

SAC: "Roger kid, Dropkick out."

## Where Can I Find a Matador? - by

*Andrew Hernandez, mbrno A1781, Satellite Beach, FL*

Have you ever wondered where some of our Matador and Mace missiles ended up? Here is list of missiles in the USAF Static Display Program and the USAF Museum Loan Program.

Matador Missiles - Hawkinsville City, Georgia, Patrick AFB, Florida, Robins AFB, Georgia, the National Atomic Museum at Kirtland AFB, New Mexico.

Mace Missiles - Flagler City, Colorado, Panama, Florida VFW Post 4538, Wildwood, Florida, American Legion Post 18, Patrick AFB, Florida, Eglin AFB, Florida, Robins AFB, Georgia, the National Atomic Museum at Kirtland AFB, New Mexico and Mildred, Pennsylvania American Legion Post 452.

This information came from Patricia Ochs at the USAF Museum, Wright Patterson AFB, Ohio.

*Note: there are a few others around - a couple of years ago some Martin Company veterans refurbished one that is in a park in the Denver area.*

## 2000 Space and Missile Award Winners - by the AFSPC Directorate of Operations

Air Force Space Command has named the winners of the 2000 Space and Missile Operations Awards honoring the command's most outstanding operations units

and people. The awards were presented by the Commander of AFSPC, General Ed Eberhart, at a commander's conference in May.

Colonel Lee R. Williams Memorial Award for Best Space Wing with an ICBM Mission: 91SW, Minot

General Robert T. Herres Award for Best Overall Space Wing with a Space Mission: 30SW, Vandenberg.

Colonel Lowell F. McAdoo Award for Best Operations Support Squadron with an ICBM Mission: 341st Operations Support Squadron, Malmstrom.

CMSgt Edward W. Weaver Award for Best Operations Support Squadron with a Space Mission: 30th Operations Support Squadron, Vandenberg.

AAFM's General Samuel C. Phillips Award for Best Missile Squadron: 742nd Missile Squadron, Minot.

General Seth J. McKee Award for the Best Space Warning Squadron: 2nd Space Warning Squadron, Buckley.

General Donald J. Kutyna Award for Best Spacelift Squadron: 2nd Space Launch Squadron, Vandenberg.

General Richard C. Henry Award for Best Overall Satellite Operations Squadron: 1st Space Operations Squadron, Schriever.

CMSgt Robert G.V. Pecqueur Award for the Best Space Surveillance Squadron: 1st Command and Control Squadron, Peterson.

ICBM Instructor/Evaluator of the Year, Capt. Devin R. Pepper and Capt. William A. Deeb, 91SW, Minot.

Space Instructor/Evaluator of the Year, Officer, Capt. Sabine Slover, Data Masked Unit, 21SW, Peterson and Capt. Todd M. Hoover, 50th Operations Group, Schriever.

Space Instructor/Evaluator of the Year, Enlisted, Staff Sgt. Jayson L. Stillabower, 5th Space Surveillance Squadron, RAF Feltwell, UK, and Staff Sgt. Jason Cinicola, 18th Space Surveillance Squadron, Edwards AFB, Calif.

AAFM's Colonel Edward Payne Award for Missile Maintenance, 341st Maintenance Squadron, Malmstrom.

## Predeparture Wake-up - by LtCol (Ret)

*Paul April, mbrno A0421, State College, PA*

It is high time this story is told, and the culprit finally exposed. It should bring a chuckle to all AAFM members, but will stir especially fond memories for readers who were among the 18 Titan II crews present that morning in mid May 1968. It was the 390SMW predeparture briefing at Davis-Monthan, and it marked this MCCC's LFA (one of the acronyms we missed - for Last F\*\*\* Alert) tour. Never before early for one of these

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**Wake-up (Cont)** - boring, mundane briefings, I was the first to arrive on that special day. Alone in the room, I dropped my gear at the assigned crew table and proceeded directly to the slide projector at the rear. Once there, I removed the last briefing slide from the carousel, moved it back one slot, and inserted a slide of my own in the newly emptied position. The room filled with glum faced, sleepy eyed crewmembers that graciously sat through the usual drab 20 minute briefing.

I grew nervous with eager anticipation while the briefer clicked ever closer to the last briefing slide - one containing the SMW crest and the bold faced heading "Commander's Comments". As luck would have it, the briefer that morning was an extremely conservative LtCol from Wing staff, who was known to be a very religious lay minister in one of Tucson's fundamentalist Christian congregations. As he finally brought up what he thought was the last slide, he smiled, looked straight at the Wing Commander, stepped back, and mouthed the usual, "commander's comments sir". The room immediately rocked with uproarious laughter, many struggling to avoid falling from their chairs. Projected big as life on the screen behind the briefer appeared a splendid color shot of a very buxom, very naked, blond bombshell. The Colonel quickly turned to see what the commotion was all about. As he caught sight of the screen, he gasped, dropped his mouth wide open, and exclaimed, "Oh my goodness", then lunged for and fumbled nervously with the remote to advance the next slide, all the while apologizing profusely to the Wing Commander. More uproarious laughter.

The Wing Commander, now smiling from ear to ear and barely able to contain himself, made some remark to the effect that any further comment would be anticlimactic and certainly inappropriate. The crews headed off on alert, more alert than usual that morning!

## The Vulcan and the Skybolt - by

Geoff Goodchild, mbrno SA045, Ringstead, UK

The Vulcan was in use as a platform for the Mk. 1 Blue Steel standoff weapon. (a nominal 100 mile range). In March 1960 the UK government decided that although progress was still being made with the Blue Streak land based MRBM (destined to replace Thor and itself later cancelled), greater capability could be obtained for less cost by the purchase of Skybolt. Skybolt was lighter than Blue Steel, (11,500 pounds against 15,000 pounds) and

also narrower, making possible the carriage of a number of weapons on under wing pylons, rather than just the single, centrally slung Blue Steel. The aircraft manufacturers had not been in any way consulted before the decision was taken by the UK government to order Skybolt from the US and so the slide rules went into overheat mode as both Avro (Vulcan) and Handley Page (Victor) battled to show that their aircraft could carry more Skybolts than the competition. Avro demonstrated that underwing pylons for two or four missiles could be achieved immediately with potential for further capacity. (Vulcan B Mk. 3 with a phase 6 wing and uprated engines. The "new" aircraft would have carried up to six Skybolts.)

Encouraged by the calculations of Mr. Avro, the dear old Air Ministry decided to cut back immediately on the production of the Victor, which was later shown to be something of a short sighted move, and also added to the problems of the Handley Page company whose financial problems were already serious.

Three Vulcan B Mk. 2's were seconded to the Skybolt development programme. Airframe XH563 went off to Douglas at Santa Monica for electronic compatibility trials and airframes XH537 and XH538 were fitted with the Avro pylons and were flown to Florida for launch and separation trials. Despite its rapidity, the programme was reported as successful but, as we know, at the end of 1962, the JFK administration cancelled the Skybolt programme.

This turn of events caused the UK government to completely rethink its deterrent strategy and it was decided to place the emphasis on the Royal Navy using

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**Vulcan (Cont)** - Polaris. Whilst the Polaris force was being assembled and brought into service, the RAF carried on with the blue Steel. The original strategy with Blue Steel was to launch from around 35000 to 40000 feet, but with the increasing capabilities of the Soviet air defence system, it was decided in the after part of 1963 to shift to a low level strategy. which required a modification of the Blue Steel for a launch altitude of less than 1000 feet. It was at this time that the V bomber force was painted from its white anti flash scheme to grey / green camouflage.

## You Ain't Nothing but a Hound Dog!

- by Col (Ret) Francis H. Potter, Spokane, WA

The 1960's were great years. Elvis was king and was belting out his "hits" and packing money off to the bank. One song he made very popular was his rendition of "You ain't nothing but a Hound Dog." He'd belt this song, wiggle his pelvis, gyrate back and forth and two-thirds of the girls in the audience would jump, scream and just know they couldn't live another day without him. The other third had already "frenzied out." Such was the effect his hound dog singing had on our younger generation. What a great era!

But for the Air Force, another Hound Dog was being developed and deployed. These were sinister, deadly dogs definitely not designed to titillate, inspire or affect mankind except in a very deadly way. This Hound Dog was the supersonic GAM-77/AGM-28. Developed and built by the North American Aviation, later Rockwell International, they were intended for use by the Strategic Air Command's all jet bombers, primarily the B-52.

I was an Aircraft Commander/Instructor pilot in the B-52 from early 1957 to many years later. I was assigned to the 92nd Bomb Wing (H) Fairchild AFB. where we had three B-52D squadrons. Besides flying training missions on a frequent and regular schedule, we maintained an around the clock alert force. A percentage of our aircraft were "loaded and ready to go" constantly. Assigned flight and ground crews slept near their aircraft, with the required "off the ground time" being measured in minutes.

This was the COLD WAR era. We had two super powers in the world. One we considered good and worthy of that honor and one we felt was dedicated to the destruction of the way of life we had come to expect,

love and protect. President Reagan later referred to that other power, Russia, as "the evil empire." Since the cold war showed no signs of ending and oscillated from hot to at best just cool, everyone wondered how it would eventually play out. I don't think anyone could hazard much more than a guess and they aren't too accurate. Looking back, it was a certainty neither our diplomats nor theirs had the answers. All were so intent on playing the game and keeping us even that very few reliable, workable long range plans were formulated. With this background and with our intelligence people telling us how far we were behind, how advanced they were (they put up Sputnik first, didn't they?) our Research and Development people were going full blast. The media was always there to make headlines and to keep the people informed.

We were working under the TRIAD system of defense. The three forces at their disposal were land, air and under water. Massive ground based static missiles were in their hardened silos and fairly well protected. Submarines comprised the underwater portion and with their stealth were considered almost invulnerable. The third leg, the air delivery system using subsonic jet bombers was at the highest risk. Not only were advanced supersonic fighters developed and deployed, but Russia was defending many of the targets we considered prime with multi-rings of ground to air missiles that had an accuracy that would make any sane person stop and think. So what could we do, since it was felt airborne bombing was an absolute necessity, if it ever came to that.

About then Gary Powers proved that even 80 odd thousand feet up wasn't enough protection. With the B-52's operational limit at less than 50,000 feet, something had to be done. The brainy ones came up with the big idea. If we just had a "something" we could stand way back and toss at them from the air, think of the advantage we'd have. So the airborne missile concept came into being. At one time it was called a "standoff" missile, since you need approach a target only within the range limit of the missile to "let 'er go!" It would hit the target long before you arrived to, hopefully, negate the defenses considerably.

The Hound Dog, a 42 foot long, 10,140 pound missile with a W-28 warhead capability of up to four megatons became part of SAC'S atomic munitions in 1961 and remained active until 1976. It was the first airborne missile to be operational. With a service ceiling of 55,000 ft and a range of 700 miles at a speed of 2.1 Mach, it was

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**Hound Dog** (Cont) - a real addition to the SAC's arsenal. It could be programmed for low level, tree skimming flight as well as for high altitude delivery. Its inertial guidance system could be updated just prior to release by the aircraft's onboard system. Its jet engine could be used for additional power for take off and the fuel tanks "topped off" prior to release. For those of us with targets assigned deep within "the evil empire", they were a welcome addition.

By late summer 1962 construction was completed on the new maintenance building at Fairchild to provide for and maintain the Hound Dog. Adapter kits were installed under each wing of our B-52s to enable us to carry one missile under each wing. Toward the end of the year, the powers to be thought we were sufficiently ready and directed the wing to begin receiving its allotment of missiles. Our crew had earned Select Status with primary duty in the flying Standardization/Evaluation section of the wing. In early December 1962 my crew was picked to fly to Eglin to pick up and return two AGM-28s to Fairchild. We arrived at Eglin on 2 Dec 1962, completed a ground course on inflight procedures and were qualified to fly carrying missiles. This made us the first aircrew from our wing to be so qualified. Our return trip was on Pearl Harbor day. We delivered, by air, the first two airborne missiles ever based at Fairchild. It didn't take long until others arrived (how, I'm not real sure) but the first two were obtained by my crew and they arrived by "B-52 air express".

We were told we'd "never know they were on board" as far as the aircraft's flying characteristics were concerned and that was correct. No buzzing, vibrations or anything. Just the extra weight to consider when doing the weight and balance computations. We never needed the additional power from their engines for take off, so never used them. Also, being so low to the ground, their engines worked like excellent vacuum cleaners, sucking up every bit of debris from the runway.

The Radar Navigator and the Aircraft Commander each had a control box by which we could "arm" the weapon's nuclear warhead in flight. It required switches at both stations to be activated within a very short time frame. Remember the "Two Man" principle? It took two equally qualified individuals to do anything to or with an atomic weapon. The R/N also had a guidance control box, to set, update or change in flight the missiles target coordinates. It proved to be a very reliable weapon system and gave us very little worry. The only "ready to use" ones I ever carried were on our airborne alert missions during the more

heated phases of the cold war.

The Hound Dog was a very versatile weapon system. It could be launched from low level, going all the way low level, or it could be programmed to "pop-up" to any altitude prior to detonation. It could also be launched from hi-level. Its 700 mile range made it an ideal "stand-off" weapon, or as we were programmed to use it, as a weapon to help us penetrate. By launching 60-70 minutes before our OTT. (over-the-target-time,) we hoped the defense system around our target would be severely downgraded. Of the 772 missiles known to be constructed, 600 are known to have been deployed. To effect a launch, after receiving the properly encoded message, we were to check and update the launch position, and the intended target position. After these settings were made and verified, we would start the engines, cause the warhead to "arm" and the weapon would be ready for launch. I never launched one, but my understanding is that they would drop slightly, then speed away, going supersonic (2.1 mach) on their way to the programmed target. I don't believe their speed could be varied or controlled.

Having them in the inventory gave us another ground school item to keep up with and another element for all kinds of nialfunctions to cope with in the simulator. But this was good. Repeated training makes safer crews. That is what helped our wing maintain and safely use these missiles until they were phased out in 1976. As far as I know, we never had a reportable accident with them. I know that none were ever accidentally dropped from any of our planes.

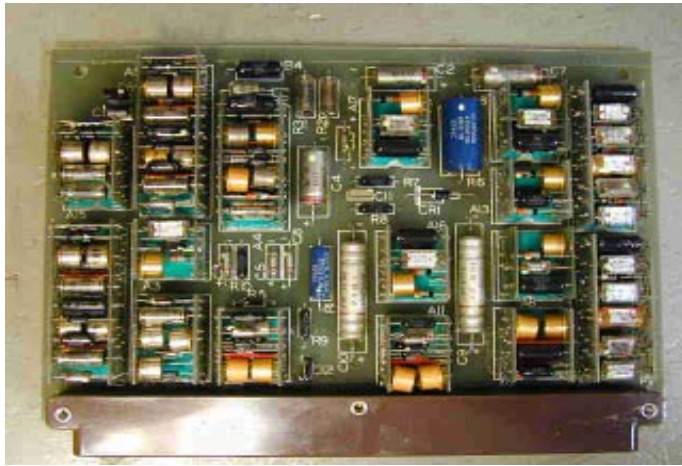
So, here's another bit of history from the life of the now disbanded Strategic Air Command, the force first entrusted with atomic weapons and with such knowledge helped WIN the cold war. My surviving crew members and I are probably the only ones who know that we delivered the very first two airborne missiles, a pair of Hound Dogs to Fairchild. To mention it to others now brings a "so what" type of response.

## **New & Improved Version!** - by Maj

(Ret) Gene Slegel, mbrno A1241, WinterPark, FL

The Matador Test Squadron had recently (1951) moved to Patrick from Holloman and received the new improved missile and launcher. We were doing a demonstration for some Pentagon Brass. The missile was erected to the firing elevation, the engine started, when

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## Do You Know What this Is? - by Col (Ret)

Charlie Simpson, AAFM Executive Director

Gene Yee has a circuit card, shown in the photo, that he is trying to identify. He was told that it is from a non-tactical radio receiver found in green cabinets with transmitters, receivers, and power amplifiers from a Grand Forks (321SMW/MW) missile launch site. The card is stamped ASSY 25-43933-12 0001101, B2 SQC 156, B2 SQC 70, July 1969. The cabinet that the card was taken from had this information: Radio Set AN/GRG-225 (or GRC, Boeing Company Contractor # F42600-85-C-1737 81205-25-44-44221-15 CL 05713.

Some of you who are Minuteman equipment experts can probably identify the card - my guess is that it was from the Medium Frequency radio system at the LF. If you know what it is, contact AAFM or Gene Yee, PHD, 5 Kew Ave, East Northport, NY 11731, phone 631-393-5089 (day) or e-mail geneyee@earthlink.net.

**Matador (Cont)** - it reached 100% power the missile lurched forward and fell nose first off the launcher (A revolting development). After investigation by Air Force and Martin personnel we determined the new centering cones on the launcher frame were causing the erector to spring forward just slightly, but enough to distort the hold back bolt allowing it to break at 100% power. For those that are not familiar with the device, the bolt did as it's name implied, held the missile when 100% power was applied, but sheared when the JATO bottle was fired allowing the missile to take off. Corrective action: Grind off the cones, problem solved.

Several (over 20) years later history repeats. A new improved launcher for the Army's Pershing missile was being tested (No Brass present this time). The Pershing is

transported horizontally and launched vertically. There was a device called the azimuth clamp which held the missile to the launch pad during transport and erection and removed manually prior to launch. The improvement was to remove most of the clamp prior to erection then have a spring hold the last part to the missile till the fire command was given. It sounded good, but the spring deflected during erection causing the missile to become jammed between the erector and the launch pad. (What a mess.) With the help of two cranes the missile was recovered. Back to the drawing board. The spring now removes the clamp section which is held in place by a retractable stud that is retracted when the firing mast is ejected. Oh well, the Pershing and the Matador are both retired, like many of the rest of us.

**Reunions (Cont)** - 564SMS crew to pull an alert, will speak. Contact Capt Francis Doiron at 406-731-7162 or email francis.doiron@MALMSTROM.AF.MIL.

**44BG/BW/SMW** - 15-18 Oct 2001, Bossier City, LA. Contact AAFM for information

**487TMW (Comiso)** - GLCM vets from all units welcome, , 12-14 October 2001, San Remo Hotel, Las Vegas, contact Don Hardison at 215 Pretty Sunset Terr, Henderson, NV 89015 or e-mail airdrop@earthlink.net

**455SMW (Minot)** - Courtyard by Marriott in Santa Fe, NM, 24-28 April 2002, contact Ken JuVette, 632 Superstition Dr SE, Rio Rancho, NM 87124, email Dkjuvt@webtv.net, phone 505-896-4826

## Taps For Missileers

**Col (Ret) John Bacs**, who was commander of a GLCM wing and at SAC Hq in maintenance

**Col (Ret) Raymond H. (Hal) Cleveland**, an AAFM member, who lived in Warner Robbins, GA. Hal was on a crew and staff in the 321SMW at Grand Forks, at SAC Headquarters, 3901SMES, 4315CCTS and was commander of the 91SMW at Minot.

**Col (Ret) Robert M. Hansen** commanded two wings and was at Little Rock, and lived in southern California  
**LtCol (Ret) Bruce Platner**, whose tours included time at 15AF Hq

**Col (Ret) Joseph Schaffers**, an AAFM member, lived in Utah and passed away earlier this year. Joe served in maintenance at Lowry in Titan I, at McConnell in Titan II and Malmstrom in Minuteman, and at Ogden