



### Missileers and Our Uniforms

#### AAFAM National Meeting - by Col (Ret)

*Charlie Simpson, AAFM Executive Director*

Our fourth National Meeting, in Colorado Springs 17-21 May, was an outstanding and enjoyable event. A total of 199 members and guests took part, and the Doubletree Hotel was an excellent setting for our meeting. The folks at Air Force Space Command gave us exceptional support.

We began with registration and an opening party Wednesday night, with over 100 people there. Thursday morning, we met for breakfast before beginning tours. Following a walk-through tour of the Hartinger Building, headquarters for Air Force Space Command, Captain Scott Hamilton gave a superb briefing on the command mission and its activities. Scott delighted those present by removing his Space Command patch on his one-piece blue uniform and replacing it with a SAC patch - stating that he started his career as a SAC missileer.

*(Continued on page 6)*

#### A Mace Launch Crew in 1962

Member Jerry Strong is 2nd from right kneeling



Titan II Launch Crew in Whites

#### Green, White and Blue - The Uniforms Missileers Wear

We started in the olive drab and pinks and greens of the Army of World War II, and we have progressed through many changes of clothing in the last fifty years. In the early days, we wore one piece fatigues, and then fatigue pants, shirts and jackets. Some of us worked in long sleeved khaki shirts and pants or blue wool uniforms. We tried silver-tans, 505s, 1505s, and several varieties of the utility, or fatigue uniform over the years. Operators, maintainers and munitions technicians all wore white "painter's" coveralls at one time or another, and we progressed from green fatigues to camouflage BDUs, most in the forest pattern but some wearing desert tan. Crewmembers and some specialists wore two piece blue fatigues (crew blues) and we finally progressed to the current one piece missile and space uniform (fondly called the blue bag) worn by operators throughout Air Force Space Command. Others wore flight suits (green bags),

*(Continued on page 4)*

#### 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

**Reunions and Our National Meeting** - One of the topics discussed at our recent board meeting was the growing number of unit reunions - a look at the list on page 12 tells you that a lot of missileers are getting together. AAFM has been encouraging meeting organizers to combine their unit reunions with our biennial National Meetings. In May, we had a number of former members of the 485TMW, a GLCM wing, as part of our meeting. We are working with a couple of other units for our 2002 meeting in Santa Maria. If you are involved with a unit reunion, consider holding your meeting in conjunction with our National Meeting - it will make your task simpler, it will probably attract more attendees and we will assist with your preparation. Our next meeting will be the third week of October, 2002 - join us with your unit. Contact AAFM now if you would like to combine your reunion with our meeting.

**Executive Director Duties** - The March issue discussed some of the tasks accomplished by the Executive Director and asked of some assistance - we got a good response. Kevin Mortensen, an active duty AAFM member at Warren AFB is taking on some of the record keeping and database duties beginning in July. Kevin will handle all the renewal notice mailings and will be

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the point of contact for members who want listings of those who served in specific units or systems. You will still send your dues checks to the AAFM address, but for member listings, either write to Kevin Mortensen, 90 Ft Warren Ave, Cheyenne, WY 82001 e-mail him at MM3SeniorCrew@aol.com or .

We are working with another member who will take over the newsletter editing - he should be involved with the September issue.

## Letters to the Association

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

**Another LCC** - The March 2000 newsletter states only one LCF has been retained at the three closed Minuteman wings - there is a second surviving launch control center. Oscar-One at Whiteman is still being maintained by the 509th Bomb Wing. It is still available for public tours, although they have to be scheduled in advance. **Bill Huey, mbr no A0376, Montgomery, AL.**

**Missile Defense** - I'm in the flight test program of National Missile Defense (NMD) where Minuteman is alive and well. We are using Glory Trip operational tests from Vandenberg to exercise the space- and ground-based sensors and Battle Management Command, Control and Communications portions of NMD. We test everything short of actually shooting at the RVs. This gives us a great opportunity to reduce the risk of the actual intercept tests by checking hardware and software interfaces and operational capabilities against a real-time target. Minuteman is also very important to the intercept tests. The target RVs are launched out of Vandenberg on a Minuteman II booster toward a broad ocean area northwest of Kwajalein. The interceptor booster, launched from Meck Island in the Kwajalein Atoll, consists of the second and third stages of a Minuteman II carrying the Exoatmospheric Kill Vehicle (EKV). Lockheed-Martin is building a new three stage interceptor booster that is scheduled to be ready to fly early next year. **Jack Royster, mbr no L181, Huntsville, AL.**

**Locator** - I'm trying to find MSgt (Ret) Terrie Cain. We were stationed at Little Rock AFB in Titan II. **Dan Woltjer, Sacramento, CA, (Contact AAFMM if you know him)**

**Early Programs** - Were any members involved with "Project 437"? It used the Thor IRBM, launched from Johnston Island, in the Pacific. I think I was the last

(Continued on page 3)

**Letters** (Cont) - person to have been qualified in the system at Cheyenne Mountain. I think some stories about that project would be very interesting. I was a Space Weapons Officer (2035B) when doing duties in that system. Another system that may make interesting reading is DMSP, formerly known as the 4000th Support Group. I was with a detachment in the late sixties, after my Titan II days. The 4000th "drafted" several Titan troops, if they had a math background. Officers here were also 2035Bs. DMSP (Defense Meteorological Space Program) used the payloads, and the missiles were the vehicle that got them into space. I have helped in trying to locate scattered members. We had a reunion two years ago in Omaha, and I understand another is planned for September in Colorado Springs. Ted Zambos put together a web page about the 4000th and DMSP ([www.zianet.com/tangoz/fourgrnd](http://www.zianet.com/tangoz/fourgrnd))  
*Don Stone, mbr no A1571, Amarillo, TX*

**Archives** - Should we consolidate the missile systems histories into a single volume? Folks with first hand personal knowledge of the early days are beginning to thin out. I was one of the SAC representatives on the operational testing of the Rascal, Hound Dog, and Quail, and a member of the first SAC unit to go operational with both. Later I was assigned to the Atlas F at Plattsburgh and helped bring 12 missiles on line. I was OIC of the Electrical & Electronic Section and Sector I Maintenance Officer. When the unit deactivated, I was one of the two officers left to assist in the preservation and "baby sitting" of the silos until removal and salvaging of the equipment. *Robert Bush, mbr no A0737, Swansboro, NC*

*We included some of the histories in our Turner Publishing Air Force Missileers. Reprints of newsletters are available in printed form and on a CD-ROM.*

**Missing Names** - I was disappointed with the "Missileer Yearbook". The content was interesting and I enjoyed the stories immensely. However, one reason I purchased the book was to show my family that I was a part of this very important history. I looked through all of the lists of members and other missileers and my name was not mentioned. I've been a member of the AAFM for almost two years now, longer than some members that I know, who did show up in the book. I was tempted to return the book, but it does have a lot of great information that I can show to my kids. *Joe Mezzatesta, Mbr No*

*A1655, Lansdale, PA.*

*Work on the book started in 1997, and the names we sent for publication were all that we had either as members or on other lists at that time. Unfortunately, anyone who joined about that time or later would not be included. Turner is reprinting the book - we sent over 500 names to add.*

**Drones** - September 1998 had an article "Drones in Arizona" that was very interesting. The author said "Too bad we didn't have the foresight to install the camera pointing down to the ground". The Firebee drone was indeed outfitted with such a camera. In 1965, I was stationed at Davis Monthan AFB. We had the "Lightning Bug", which was a converted Firebee. Crews were rotated in and out of Viet Nam on a ninety day cycle where the "Lightning Bug" was used for filming behind enemy lines. *Lee Cox, mbr no A0939, Seattle, WA*

**Missile Badge** - For three years I maintained communication links between command centers and Mator launch centers, from the launch centers to the launch pads and from the launch shacks on the pads to the missile technicians on the bird. (Germany, 1956-1960), For five years I tested inertial navigation platforms and components for various missiles that traveled into outer space, including the one that carried "HAM" into space. (Holloman Research Center, 1960-1965) During these two assignments, I had more to do with missiles than many men I saw wearing the "Pocket Rocket", but I never qualified for the missile badge. The only reason I was ever given was that I held the wrong AFSC. I did the jobs that were absolutely necessary to the success of the missile programs I supported. To every man who wears the Missile Badge, I say "wear it proudly". I would appreciate any logical explanation that would justify why I am not wearing one as well. *Mack A. Powers Sr.*

*Throughout the life of the "Pocket Rocket", people have complained that they did not qualify to wear the badge even though they worked on missile systems. As Greg Ogletree's "History of the Missile Badge" explains, the criteria changed many times, and the decisions weren't always fair. There were some short periods where almost everyone in a missile unit got a badge, and others where the rules were very stringent.*



321SMW Competition Crews in two-piece blues, 1969. BGen (then Colonel) Fall, wing commander, on left.

**Uniforms** (Cont) - especially those in the airborne launch control business - and some in other systems.

Dressing for alert duty in the early days, especially in the cold north, was a real chore. If you were lucky enough to fly to your site in a chopper, you started with Air Force issue long johns, topped by the stiffly starched white coverall and colored scarf. You then added the big white "bunny boots", the Air Force parka with the wolf fur hood and snorkel, the parka pants and at least two layers of gloves and mittens. All this dressing so when you arrived at the LCC and closed the door, you could change into a sweat suit while you were "alone" (the two of you) on alert.

The two piece missile blues came on the scene in late 1967 - they were basically the same uniform many of us saw being worn by some aircraft maintenance specialists - especially transient alert people who met arriving aircraft at base ops. They were basically blue fatigues - first in cotton and later in cotton/polyester. Some of us found we could buy similar "work" uniforms at places like Sears (just like your friendly Studebaker mechanic wore). At Grand Forks, we customized these Sears uniforms with embroidered names and rank, instead of using the standard blue name tag. In 1970, some of us were told we should not wear the Sears variety of uniform because "it caused static discharges". During that same period, some special versions of the crew blues, plus some unique uniforms, turned up at Olympic Arena. Warren was especially innovative - the competition crews from there sported baby blue or red jump suits in a couple of comps.

In 1988, the Air Force introduced the new one

piece missile blue uniform - still worn today, but maybe on the way out. Recent discussions at Space Command indicate that either BDUs or flight suits will replace the "blue bag" in the future.

Missileers who served in maintenance have worked mostly in fatigues, utilities or BDUs over the years, but there have been some exceptions. Some wore the same white coveralls that crews wore in the late 1950s and early 1960s. A few specialties wore the blue fatigue two piece that became the crew uniform in 1967. And, of course, there were some special purpose items like the Titan II RFHCO suit. Those of us who served in GLCM, in ops, maintenance, munitions, comm, security or support learned to love the charcoal lined chemical suit that we wore over fatigues or BDUs. Early in the GLCM life cycle, only the "deployed" troops (flight members) wore the BDUs - others wore the plain olive green fatigues.

Of course, we have worn many items with our work clothes - dickeys, scarves, colored caps, a wide range of patches, cold weather gear, safety equipment and more. Let us know about some of the unusual uniforms you had, and we will continue the story in the future.

A number of our members responded to our request for uniform stories - here are some of them.

**The Matador Days** - by Dick Boverie, mbr no L0070, West Palm Beach, FL

If I recall correctly (and I may not), when I was with the Matador from 1954-1959, officers and enlisted simply wore regular Air Force fatigues when we were deployed in the field as launch crews in Germany. Officers wore regular khakis when in training at Lowry AFB, at Orlando AFB and the Cape, in launch operations trailers in Germany, and at guidance sites (MSQ, Shanicle). The enlisted folks always wore fatigues.

**Mace Launch CrewWear** - by John Cunningham, mbr no A1674, Lompoc, CA

I was on a Mace Launch Crew in the 71TMS at Bitburg AB Germany from 1966 to 1969. We wore fatigues with red baseball caps, red ascots and bloused our boots. We fell-in for inspection at 0630 or 1830, depending on the 12 hour shift, in the hallway of the admin area of the barracks. The crew commander did the inspection - there were four crews going on duty. After inspection and a short briefing we collected our gear and boarded the bluebird bus, one to Idenheim and the other to Rittersdorf. The ascot was the first thing to go upon  
(Continued on page 5)

**Uniforms** (Cont) - entering the site, then the blousing and whatever else it took to be comfortable in the "Quonset hut" buried under ground that was the Launch Control Center/Crew Ready Room/Power Production Room.

Those who served in Bitburg will remember the American Legion Club between Bitburg and Spangdahlem that was open all night. Many a muster was made 10 to 15 minutes after getting in the barracks after being at "the legion" all night. The very worst thing about that was the sites converted over to a new voltage regulation system that periodically and chronically shut down all 8 missiles at the site just before shift change. The crew going on faced 12 hours of hard work bringing the 8 birds back up to alert status. Add to that the fact that you were out all night ... you get the picture. But that was alert duty - you hung in there and got the job done.

Gill Goering, mbr no A0071, Clinton, NY, agrees - he sent the following - Reference Mace uniforms. At Bitburg AB from 1964 to 1967 we wore the standard AF Fatigue uniform. Sometimes with bloused boots and sometimes without. We had squadron ball caps (Red) and sometimes wore the "dickey scarf" with the fatigue shirts.

**Minuteman Whites** - by Bill Huey, mbr no, A0376, Montgomery, AL

It wasn't only the Atlas guys who wore the stiff white coveralls. I was in Minuteman at Whiteman from 1964-68, and I wore the "stiff whites" on every one of my 300+ alert tours. The Wing had the coveralls laundered for us, and the only choice of starch was Heavy. But you know, that was back in the days when we were wearing 505s during the summer when we weren't in the hole. I am sure you remember that the only way to look presentable after 1000 hours in a set of 505s was to have them starched as rigid as possible.

In March and April of 1964 so many new crew members were in training at Whiteman for the soon to be operational Minuteman wing that Base Supply gave out of crew-white coveralls. As a solution, the missile wing purchased a quantity of white painters coveralls from a hardware store in Sedalia. I still have a copy of the Wing Operating Instruction on crew uniforms that reminded us that the "hammer loops" were to be cut off these coveralls before we used them as uniforms.



1999 Competition crew in one-piece blues

**Stiff Titan Whites** - by James MacCracken, mbr no A1264, Peoria, AZ

You didn't sit in the missile uniforms, you shaved with them!! We, from the Titan II early days, also used to wear the whites. I remember one morning while driving out to alert at 373-5, my BMAT was sitting in the front passenger seat and I was sitting directly behind him in one of our newest 1963 Ford station wagons. The Sergeant. BMAT was a heavy smoker and since it was hot and humid in Arkansas, we were driving with all of the windows open. I had my arm resting on the window and BMAT flipped his cigarette out the window. (The foliage couldn't catch fire because of all the humidity) and the butt went up my sleeve. I didn't notice it at first, but shortly my side started to sizzle. It's hard to explain the contortions my MCCC and I went through and where his hands went as we tried to undress this poor, dumb lieutenant. After stripping in the vehicle to the great amusement of passersby and the BMAT and MFT, we finally pulled off the road so that I could get dressed again. As I was expressing my concern to the BMAT in my normal sweet manner, Sgt. BMAT lit another cigarette and said "What happened, Dep?"

**The Blue Bag** - by Bob Servant, mbr no A1722, Fairfax, VA

I was quite involved with the current Missile Crew Uniform as well as the two-piece blue uniform (wore the 2-piece blue from 1970 to 1985). I was assigned to SAC HQ DOMM and was tasked to develop the new one-piece blue uniform. There was a picture of me on the cover of AF times back in 1988 wearing the "new" one piece uniform. .



AAFM Board Members

**NM2000** (Cont) - Following his briefing, we had lunch at the Peterson AFB Officers' Club, and then broke into two groups.

One group toured the Cheyenne Mountain complex, spending most of the afternoon in the giant underground facility. The other group traveled to Schriever AFB, east of Colorado Springs, to visit the 50th Space Wing. Colonel Dick Webber, an AAFM member, gave us the mission briefing for the wing, and we then toured the satellite control facilities for the Global Positioning Satellite system and the Defense communications satellite control center. This was the first visit by many of us to the satellite control facilities - we had lots of questions. Thursday evening found many members in the hospitality suite telling stories and renewing friendships.

Friday included a tour of the Garden of the Gods and the Air Force Academy. The tour included lunch at the Academy Officers' Club and a tour guide/bus driver who was a missile crew member at Malmstrom. The golfing members of AAFM played in a tournament at the Silver Spruce Golf Course at Peterson AFB. The team of Jay Kelley (our president), Clark Ward, Paul Murphy and Mike Drennan (the 21st Space Wing commander) won the event. Friday night, a large group had a hilarious and entertaining evening at the Flying W Ranch, with a steak dinner and a great cowboy music show.

Following the breakfast Saturday morning, over 120 people met for our general membership meeting. The executive director gave a short rundown on the current status of the association and its programs, and AAFM member Colonel Jim Warner, from the Space Command Requirements Directorate, gave us a review of the cur-

rent state of the ICBM force, planned improvements and modifications and a look at the future. Becky Roberts, from the Titan Museum in Tucson, gave a presentation on the planned new building there. The board members met to finalize plans for 2002, (October in Santa Maria, California). They also discussed the future of AAFM and the need to spread the workload, especially the newsletter and publicity, to assist the executive director.

Saturday evening, 174 members and guests gathered for the main event, the AAFM Banquet. During the social hour, David Stumpf signed copies of his newly released book documenting the history of the Titan II. We auctioned off a signed copy, along with a Titan II model, during the dinner. Member George Nagy outbid the crowd to end up with the book and model. We opened the dinner with a prayer, a reading of "We are Air Force Missileers" and a recognition of the members of AAFM who have passed away. Dinner followed introductions and a welcome by president Jay Kelley. General Ed Eberhart, commander of Air Force Space Command, North American Aerospace Defense Command and US Space Command, was our featured speaker for the evening. Following his outstanding talk, the Galaxy Brass of the Air Force Band of the Rockies closed the formal activities with a concert of popular and patriotic tunes. We ended the evening by posing for group photos.

Sunday morning, we gathered for one final breakfast before heading home. It was obvious that everyone had a great time and were impressed by our tours and our speaker. Jim Knapp, who lives in Colorado Springs, did an exceptional job organizing the entire event, working with Space Command, the hotel, the tour company and the Flying W. Each of our four meetings has succeeded because we have members in the local area who work hard - Dayna Castro is already at work on the 2002 meeting - see you there.

Col Jim Warner Briefs AAFM Members





91SW  
Mascot

## Guardian Challenge 2000 - Air Force News Release

Four days of tough competition, spirit and camaraderie ended here May 4, as Air Force Space Command honored its winners from Guardian Challenge '00. The winner of the Blanchard Trophy for best Intercontinental Ballistic Missile wing was the 91st Space Wing, Minot AFB. The 21st Space Wing, Peterson AFB took home the Aldridge Trophy, awarded for best space operations. The Schriever Trophy went to the 45th Space Wing, Patrick AFB. The Schriever Trophy goes to the wing with the best space launch team.

The Top Operational Crew awards included the 91SW for missile operations; the 30SW, Vandenberg AFB, for spacelift operations; and the team from Royal Air Force Fylingdales, United Kingdom, for space operations. The best security forces team came from the 90SW, Warren AFB, the best space communications team, from the 50th SW, Schriever AFB, the best missile communications team from the 341SW, Malmstrom AFB, the best helicopter team from the 90SW, and the best missile maintenance team, 91SW. Guardian Challenge '00 also marked the first time a Services dining facility team competed. Taking home the inaugural award was the 90SW team.

**Note:** AAFM again participated at Guardian Challenge - President Jay Kelley, Secretary Dayna Castro and Executive Director Charlie Simpson met hundreds of competitors and other visitors at our display during the Exposition. We passed out more than 500 newsletters and AAFM brochures. AAFM presented each participant with a commemorative AAFM coin, and we provided trophies to the winning missile teams through 20AF.

## What Squadron Where You In? - A Follow-up

Several members sent information about the March 2000 newsletter article - here is their feedback.

**ALCS** - The information that "all Minuteman Airborne Launch Control System Crews were assigned to the 68 SMS" is incorrect. I was assigned to the ALCS in the 741 SMS, 91 SMW, from its inception in 1967 through October 1969 when I went on to another assignment. The 741 SMS ALCS supported two orbits and had, as I recall, 12 crews. It's my understanding that the 741 SMS ALCS mission was moved to Ellsworth AFB shortly after my departure. *David Schuur, mbr no A0824, Millersville, MO*

**576FLTS** - The March issue states that the 576FLTS was part of the 30SW. The 576th reports to the Space Warfare Center directly and is no longer part of the 30SW. *Jay Marschke, mbr no A1573, Houston, TX*

**Wendover** - I was originally assigned to a unit simply known as the 4145th Army Air Force Base Unit, Wendover Field. We were part of Air Materiel Command, the missile test people were assigned to Squadron A. We did rather extensive testing on the JB-2, and the very first ground to air system, called the GAPA, for Ground to Air Pilotless Aircraft. (It was actually a missile system). My duties were, as the only radar mechanic, to operate and maintain the SCR-584 radar system which was used to track and control these missiles. The entire 4145AAFBU was transferred to Alamogordo Air Force Base in March. This was part of the reopening of Alamogordo AAFB. I still have a copy of the transfer order, with names. I was NCO of Range Instrumentation (Radar Section) and continued in this capacity until transferred to OCS in June, 1948. Perhaps the 4145th should be added as one of the "Early Units". *Elmer Peterson, mbr no A0360, Spring Valley, CA.*

**Matador and Mace** - The 405TMS was converted to Mace from Matador in June 1960 and the 89TMS was not a Mace unit until October 1962. I was assigned to June 1960 to the 405TMS from Orlando. The Mace group traveled to Hahn AB in June 1960 as a self contained unit, with all support personnel. Then in October 1962, the 89TMS was activated at Hahn - I was assigned

(Continued on page 8)

**Squadrons (Cont)** - to it with quite a few of the officers and enlisted that came to Germany together. *Joe Perkins, A1436, Middleburg, FL*

In the history of the Matador/Mace units, however, there was no mention of Detachment 1, 4504th Tactical Missile Wing at Holloman AFB, NM. Our personnel worked with Martin-Marietta in a test program for the Mace. I was there from October 1959 until June 1961. Instead of completing crew training I got lucky because of overseas return date and was assigned to Holloman. My boss was LtCol Bart Rinehart. He designed and installed a hard launch pad for Mace launches. Crews would travel to Holloman for ORT launches. They would launch missiles which we had retrofitted with recovery chutes and air bags for recovery - one of our birds flew 13 times. *Jim Kroskey, mbr no A0660, Jacksonville, AR*

**AMMS** - Regarding AMMS histories - an often overlooked one was the 100AMMS which was a part of the 100th Strategic Reconnaissance Wing ( U-2 ) at Davis Monthan AFB. 100AMMS maintained the AQM-34 drone which was launched from a DC-130 and recovered in midair by a CH-3. The unit was active from 1966 to 1976. The drone was utilized extensively in SEA, Korea, and other locations. *Ron Hubbard, mbr no A1233, Fair Oaks Ranch, TX*

**GLCM, AMMS and Mace** - The 868 TMTS, the GLCM training squadron, was activated four years before the 868TMTG. The 868TMMMS was activated at the same time as the group, and both squadrons were assigned to the group, which had a separate lineage and honors. I don't know too much about the AMMS units (except the designations and locations) but I do know that only the B-52 equipped bomb wings (*see above*) had them because AMMS was essentially for the Hound Dog missiles, which only the Buffs carried. The 24 TMS was also at Tainan, Taiwan from March 1957 to July 1958 as a Matador unit. The 6214TG referenced on page 4 was also called a TMG and an Air Base Group during its life. *Greg Ogletree, mbr no L0049, Lompoc, CA*

**Matador** - I started out as a Matador flight control system trainee at Lowry. By graduation, we had been reassigned as Mace launch crew members and sent to the 4504TMTW at Orlando AFB. Orlando AFB was turned over to the Navy in 1967 and became a Navy training center. McCoy AFB (which was Pinecastle AFB) was south of Orlando and is part of the airport. They were

two different bases. This first assignment to Orlando lasted only long enough to pull a few details while awaiting crew training. By September 1960, I was on a launch crew as part of the 822TMS at Sembach. We were part of 17AF, 38TMW, 587th TMG. During 1961-62, our crew was one of several sent TDY to the 405TMS at Hahn to set up the Mace Rapid Fire Multiple Launch program (a whole story in itself). September 1963 saw my return to the 4504th as a maintenance troop, keeping the training birds operational for the students. The TM-76A designation changed to MGM-13A, and the TM-76B (inertial guidance) to CGM-13B. The "A-bird" was phased out, and we became CGM-13B troops. I arrived at Bitburg (71TMS) in January 1967, where I remained until we finished closing out the Mace at Bitburg. *Tom Campbell, mbr no A1786, Layton, UT*

## **Silo - A Guide for Base Activation Personnel**

*Extracted from a General Dynamics Atlas F handbook - thanks to Rod Perenovich, mbr no A1539, East Liverpool, OH*

The silo concept of a missile launcher permits the missile to be maintained in a partially serviced condition, in the hard state while under nuclear attack, without preventing prompt execution of the mission of a strategic squadron

The silo is a cylindrical hole, 52 ft in diameter and 174 ft in depth with a concrete wall varying in thickness from 2 ft to 9 ft. Within the silo an octagonal structural steel crib divided into eight levels is suspended by a system of mechanical springs. Mounted within the crib are the numerous systems necessary to launch the missile, as well as a spiral staircase and a personnel freight elevator. The silo also contains electric generating and associated auxiliary and control equipment, heating, ventilation, and air conditioning equipment necessary for proper functioning of the missile support system.

Located within the crib is a 21 ft square, enclosed, insulated vertical shaftway containing a launcher platform weighing approximately 270,000 pounds. The launcher platform is suspended by a cable system and serves as the elevator to lift the missile to launch position. It is divided into four levels which contain the equipment to service the missile up to the rise-off period. Retractable work platforms are located within the shaftway for access to the missile. The total suspended weight of the crib and launch platform with equipment is over 1,500 tons.

## **We are Air Force Missileers**

For more than 50 years, we have developed, tested, deployed, operated, maintained and supported Air Force missiles systems, and we continue to do so.

We tested captured German V-1s and our own JB-1 jet bombs at the end of World War II. We launched Navaho from Florida, deployed the Snark to Maine and maintained the Matador in Germany and Taiwan. We manned the Bomarc in New Jersey and New York and test flew the Mace in Libya.

We operated the Thor from shelters in England and the Jupiter in Turkey and the Blue Scout in Nebraska. We loaded RP-1 onto Atlas in coffins in Washington and Kansas, emplaced reentry vehicles on other Atlas in silos in Texas, New York and Oklahoma. We roamed the long tunnels of the Titan I complexes in Idaho and Colorado, and wore RFHCO suits in Titan II silos of Arkansas and Arizona.

We prepared missiles and then armed bombers, fighters and interceptors at flightlines around the world with Hound Dog, Quail, SRAM, ALCM, Advanced Cruise Missile, Sidewinder, Genie, Falcon, Maverick, AMRAAM and others

We hid our GLCM in the rugged terrain of Sicily and the forests of Belgium.

We have driven across the snowy plains of the Dakotas, Montana and the hills of Missouri in TE's, M-vans, old Ford station wagons and new Expeditions on the way to LCCs, MAFs and LFs of Minuteman and to the sites of Peacekeeper in Wyoming - and we continue to do it today.

We serve at sites around the world to launch and fly satellites, detect launches and operate our other space systems.

We proudly wear our distinctive badge - the Pocket Rocket we have fought to keep as a part of our uniform.

We are a small and unique part of the Air Force and we are a family.

We are honored to have served and continue to serve our Air Force and our country.

## **We are Air Force Missileers**

This reading was presented at the 2000 National Meeting as part of the opening activities at the AAFM Banquet. It was written by your executive director, Colonel (Retired) Charlie Simpson, and read by AAFM Vice President Colonel (Retired) Jim Burba. Copies suitable for framing are available for a donation of \$5 to the AAFM Missile Heritage Fund. Send donations to AAFM, Box 5693, Breckenridge, CO 80424

## Survivable Low Frequency Communications System (487L)

For an upcoming AAFM article and a web page as well, I'm soliciting any and all unclassified/declassified information regarding this communications system — conceptual stage in the mid-1960s, construction of the two ground sites near Hawes CA & Silver Creek NE in the late 1960s, airborne SLFCS through PACCS, the phase-out the Hawes site in the 1980s and Silver Creek in 1994, to current day operations using Navy E-6A/Bs. Looking for anecdotal info/'war stories' relating to it, as well as facts and graphic aids. Please respond to: Tim Tyler PO Box 32524, Detroit MI 48232-0524 or [tyler@mich.com](mailto:tyler@mich.com)

## Atlas Historical Society

Member Bruce Townsley and others in Abilene have founded a local organization to help preserve Atlas history. Bruce is renovating one of the Dyess Atlas F sites. Their membership has increased from 8 last year to 40 currently. They have found that missile site tours and "site surveys" to document the condition of the local sites to be a good activity for increased awareness and participation. They hope to complete surveys of all 12 site within a year or so. In June, they will also officially become part of McMurry University's Department of History. This will allow access University resources - grants, archiving, and students for various projects - and will hopefully allow them to begin taking oral histories. Bruce is undertaking a venture which he hopes will ben-



Bruce Townsley's Atlas F LCC

efit the Atlas Historical Society and to military history in general. With the assistance of several of the local missile site owners, he will give tours of up to four sites - perhaps more in time - in the Abilene area. These sites are in a variety of conditions, and are currently being renovated or preserved for a variety of uses. This will be a package tour type arrangement and cover most a weekend. The tour package will accommodate up to 6 people per weekend and include lodging and some meals. You can contact Bruce Townsley, 17760 FM 604 S, Clyde, TX 78518-7640 or visit his web page <http://atlasmissiletours.com>.



Atlas and Titan II in New York

## The New York Missiles - by Ken Fisher, *mbr no A1590, Bronx, NY*

Have you ever been to LaGuardia Airport in NYC, or watched a sporting event from either Shea Stadium (home of the NY Mets) or USTA National Tennis Center? If you can answer yes then you were very close to an Atlas and Titan II - one with a Mercury Capsule and the other with a Gemini. Most likely the TV camera never showed either of the birds, but they are on the grounds of the 1964 Worlds Fair at Flushing Meadows Park, in the Queens section of New York City.

The public is no longer permitted near them and the Hall of Science workers do not know the first thing about them. They are in need of repair work and some birds have made them there home. But doing a little background work, I found out that they will be going to Kansas shortly to be rehabbed. It's not bad having an Atlas 15 minutes away from my house, just across the river.

## Atlas on the Road - by David Dobbs, mbr no A1519, Brookfield, IL

In 1965 I was one of three airmen assigned to convey an Atlas missile from Fairchild AFB to Norton AFB, as the 567SMS was deactivating. The haulers were civilian, but we were responsible for the missile itself. I was a Missile Facilities Specialist and the missile trailer was one of the systems I was responsible for, so I was a logical choice for the trip. The missiles normally were transported by air, but I believe the aircraft used for that (C-133) were grounded for some reason. In any event we transported our birds by ground. We, the GIs, acted as tank watch round the clock, and monitored the other vital signs as well. As anyone in Atlas knew, the most important thing was for the fuel tank pressure to be higher than the LO2 tank pressure, to prevent an inverted bulkhead, which would destroy the missile. There were regulators to prevent this, but nobody trusted them as much as one's own eyes. It was an interesting trip.



David Dobbs' Atlas en route to Norton

## Air-launched Missiles - Additions to our September 1998 History Issue

**AGM-130A and C** - A TV or IR guided air-to-surface missile carried by the F-15, a GBU-15 glide bomb with a rocket motor for use as a standoff weapon on heavily defended targets. The AGM-130A uses a Mark 84 2000 pound bomb and the AGM-130C a BLU-109/B penetrating warhead. Used extensively in Iraq and the Balkans.

## Joint Air-to-Surface Standoff Missile (JASSM)

- An advanced precision, long-range weapon using an IR seeker for terminal guidance with GPS/INS for midcourse and backup terminal guidance. First flown in April 1999, the missile is manufactured by Lockheed Martin. It carries a 1000 pound warhead and is powered by a Teledyne Continental Motors powerplant. Planned for use on the B-52H, F-16, B-1B, B-2, F/A-18E/F, F-15E, F-117 and P-3C.

**Surface-to-Air Missiles** - The Air Force has used two airfield defense systems. The FIM-92 Stinger, a man-portable, tube-launched missile developed for the Army is used in Korea, and the Rapier, a British-built missile originally deployed to defend bases in the United Kingdom and Turkey, and now operated by Turkish troops to defend US air bases in that country.

## Taps for Missileers

LtCol (Ret) Ray Bennington, a member who served in Snark in Maine, at Whiteman in the 351SMW, at 8AF Hq at Westover and in the 3901SMES, passed away in May. He lived in Littleton, Colorado.

Major (Ret) David Chagnon, a member who lived in Yuba City, California, served in the 90SMW, 1STRAD, 4315CCTS and the 394SMS.

Col (Ret) Jack Leathers, who lived in Montgomery, Alabama. Jack served in Thor in England, in the 576SMS in Atlas, in the 321SMW and 351SMW in Minuteman and at Hq SAC.

Chaplain, Colonel (Retired) Chris Martin, an AAFM member, lived in San Antonio. Chris was an Army enlisted member, a C-124 pilot and a chaplain on many bases.

Lt Col (Ret) Jim McConnell served in Minuteman in the 341SMW and on the 3901SMES.

LtCol (Ret) Dennis Piper, a member who served in Titan II in the 308SMW, in GLCM and at Hill AFB, lived in Layton, Utah.

LtCol (Ret) Harry Robb, a member who lived in Alexandria, Virginia, was in Snark at Presque Isle AFB.

Col (Ret) John Shults, a member who served in Titan II in the 390SMW and Minuteman in the 91SMW, lived in Colorado Springs.

LtCol George Timberlake, a member who served in Titan II in the 308SMW, at SAMSO and AFSPC, lived in Escondido, California.

## Reunions

**SAC 2000** - July 12-16, 2000, Omaha. Many activities at the new SAC Museum. Society of the Strategic Air Command, PO Box 1254, Omaha, NE 68005.

**567SMS** - Post Falls, Idaho, 7-10 September 2000, contact Dick Mellor, 6331 N Elmhurst, Spokane, WA 99208, 509-327-2879, e-mail elm1929@aol.com.

**556SMS** - 4-8 October 2000, Le Baron, Best Western, Colorado Springs. Contact Bill Billar, e-mail WBillarsr@aol.com, phone 904-767-7697 or Drexel Biddle, e-mail drossb@uswest.net, phone 719-635-0140

**69TMS, 586TMG, 701TMW** - 14-18 October 2000, Victoria, BC Canada. Contact Louis G Koszarek 31809 37th Avenue SW, Federal Way, WA 98023, Phone 253-874-5428, e-mail loukosza@aol.com

**Matador/Mace** - 24-27 August, Embassy Suites, Grapevine, Texas. Contact Joe Perkins perkster@fcol.com or web site <http://tacmissileers.homestead.com/home.html>

## Titan II A History of a Cold War Missile Program

This new book by AAFM member David Stumpf and debuted at our National Meeting is a superb history of the Titan II and the people involved with the development, testing, operations and maintenance of the system. The book is available directly from David Stumpf, 8635 N Scenic Dr, Tucson, AZ 85743. The book is \$53 including shipping.

## Black Hills Gold Missile Pins

Black Hills Gold Missile Pins, to use either as a lapel pin or a tie tack are now available directly from Landstrom's Jewelers. Prices range from \$59.20 to \$108 for gold pins and half that for silver, with every configuration of the badge available. Write to Landstrom's Jewelers, 620 St Joe, PO Box 1220, Rapid City, SD 57709, or call Landstrom's at 1-800-843-0069 for details. Marty Skovran is their resident expert on the badge.

**Missile Heritage Fund** AAFM grants to museums continue to grow, thanks to the generosity of our members. Contribute and receive an AAFM memento to recognize your donation.

**\$5** - choose an AAFM lapel pin, AAFM patch, Bill McKee's "Missile Business Cartoon" Book, Bob Wycoff's poems ("Missileer") or 1993-1994 newsletter reprints.

**\$8** - choose an engraved AAFM ball point pen, AAFM mug or a mug honoring the anniversaries of AFSPC (10), the competition (30) and the USAF (50), 1995-97 Newsletter reprints, Greg Ogletree's "History of the Missile Badge", or Two 3901SMES Collectors Pins

**\$10** - choose a 1998 or 2000 Guardian Challenge AAFM coin, 321OSS Patch, AAFM Desk Clock, Subterranean Sentinels Patch, AAFM Key Chain, A CD-ROM featuring Minuteman, Titan II, Peacekeeper, Space and Competition photos, a CD-ROM featuring older and air-launch systems or a CD-ROM with all AAFM Newsletters..

**\$15** - AAFM Golf Cap

**\$15** - the 44th Missile Wing Commemorative Book.

**\$30** - AAFM Golf Shirt in white or blue, sizes S,M, L, XL, XXL, XXXL

**\$60** - USAF 50th Anniversary Book

Mail your check to AAFM, Box 5693, Breckenridge, CO 80424.

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Complete this short application and return it to us at the address below. We will return a form for you to document your detailed missile experience.

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Suggested donation for dues are \$20 per year (\$5 active duty enlisted/student), \$50 for three years (\$14 active duty enlisted/student) or \$300 for Lifetime, payable in up to 12 installments.

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