

Air Force Missileers

The Quarterly Newsletter of the Association of Air Force Missileers

Volume 19, Number 4

"Victors in the Cold War"

December 2011

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AAFAM is collecting stories from members, family members and friends about experiences during the Cuban Missile Crisis. Add your story to our collection, which we will publish in a special book as part of our 2012 commemoration of this historic event

The Mission of the Association of Air Force Missileers -

- Preserving the Heritage of Air Force 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



Association of Air Force Missileers

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Breckenridge, CO 80424

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Name				Home Phone	
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City	State	Zip Code	Rank/Grade	Active Duty <input type="checkbox"/>	Retired <input type="checkbox"/>
Can AAFM release this information-only to members and missile organizations? Yes ___ No ___				Reserve or Nat Guard <input type="checkbox"/>	Discharged/ Separated <input type="checkbox"/>
Signature				Civilian <input type="checkbox"/>	

Summary of your missile experience - used in the AAFM database - attach bio if you have one

Missile Systems and Units		Matador _____ Units _____	Blue Scout _____ Unit _____	Titan I _____ 568 _____ 569 _____ 850 _____ 851 _____ 703/451SMW _____	Titan II _____ 308 _____ 381 _____ 390 _____	GLCM _____ JCMPO _____ 38 _____ 303 _____ 485 _____ 486 _____ 487 _____ 501 _____ Dugway _____ 868TMTS/G _____
Navaho _____	Thor _____ Units _____	Mace _____ Units _____	Atlas D _____ E _____ F _____ 548 _____ 549 _____ 550 _____ 551 _____ 556 _____ 567 _____ 576 _____ 577 _____ 578 _____ 579 _____ 706/389SMW _____		Minuteman I _____ II/Mod _____ III _____ Peacekeeper _____ 44 _____ 90 _____ 91/455 _____ 321 _____ 341 _____ 351 _____ 4062 (MM Train) _____ Small ICBM _____	
Snark _____ 702SMW _____	Bomarc _____ Units _____	ALCS _____ 2ACCS _____ 4ACCS _____		Airlaunch _____ AIM _____ AIR _____ AGM _____ SRAM _____ ALCM _____ ACM _____ AAMRAM _____ RPV/Drone _____ Hounddog _____ Quail _____ Skybolt _____ Other Airlaunch Systems _____ Airlaunch Units _____		
Jupiter _____ Italy _____ Turkey _____	Space Systems _____ Thor _____ Atlas _____ Titan II _____ Titan III _____ Titan IV _____ Delta _____ Nike _____ Vanguard _____ Scout _____ EELV _____ Apollo _____ Mercury _____ Gemini _____ MOL _____ Agena _____ ABRES _____ Ranger _____ Shuttle _____ Skylab _____ Sat Control _____ SpaceSurv _____ BMEWS _____ DSP _____ DMSP _____ DSCS _____ GPS _____ PavePaws _____ Other Space System _____ 21SW _____ 30SW _____ 45SW _____ 50SW _____ Other Space Units _____					

Headquarters/Numbered Air Force/Specialized Units (Check only if assigned to the headquarters level)

JCS/DOD/SECAF _____ Air Staff _____ AFIG _____ AFOTEC _____ SAC or JSTPS _____ AFSPC _____ TAC _____ ACC _____ STRATCOM _____ PACAF _____ USAFE _____ EUCOM _____ NATO _____ or AAFCE _____ AFSOUTH _____ AU _____ AFMPC/AFPC _____ DTRA/OSIA _____ Other MAJCOM _____	HqARDC/AFSC _____ WDD/BMD/BSDB _____ BMO _____ SAMSO _____ SMC _____ WTR _____ ETR _____ 6555 _____ 6595 _____ SACSO _____ SATAF _____	HqAFLC _____ AMC _____ Ogden _____ SBALC _____ SAALC _____ SMALC _____ AGMC _____ SACLO _____
HqATC or AETC _____ CTTC _____ LTTC _____ STTC _____ VAFB ATC _____ 381TRG _____ 392TRS _____ 532TRS _____ 533TRS _____	NAF 2 _____ 3 _____ 5 _____ 8 _____ 14 _____ 15 _____ 16 _____ 17 _____ 20 _____	Division Hq _____ 4 _____ 12 _____ Other _____
Other Units _____		Vandenberg Units 1MsIDiv _____ 1STRAD _____ 392 _____ 394 _____ 395 _____ 576 _____ 4315 _____ 3901 _____ Other VAFB Units _____

Specialties: Operations _____ Maintenance _____ Munitions _____ Comm _____ Facility Mgr _____ Safety _____ Civil Eng _____ Support _____
 Research/Devel/Test _____ Instrumentation _____ Security _____ Contractor _____ () Other _____

Missile/Space Competition Participant _____ Years _____ Commander -Sqdn _____ Group _____ Wing _____ Other _____

Other Information _____

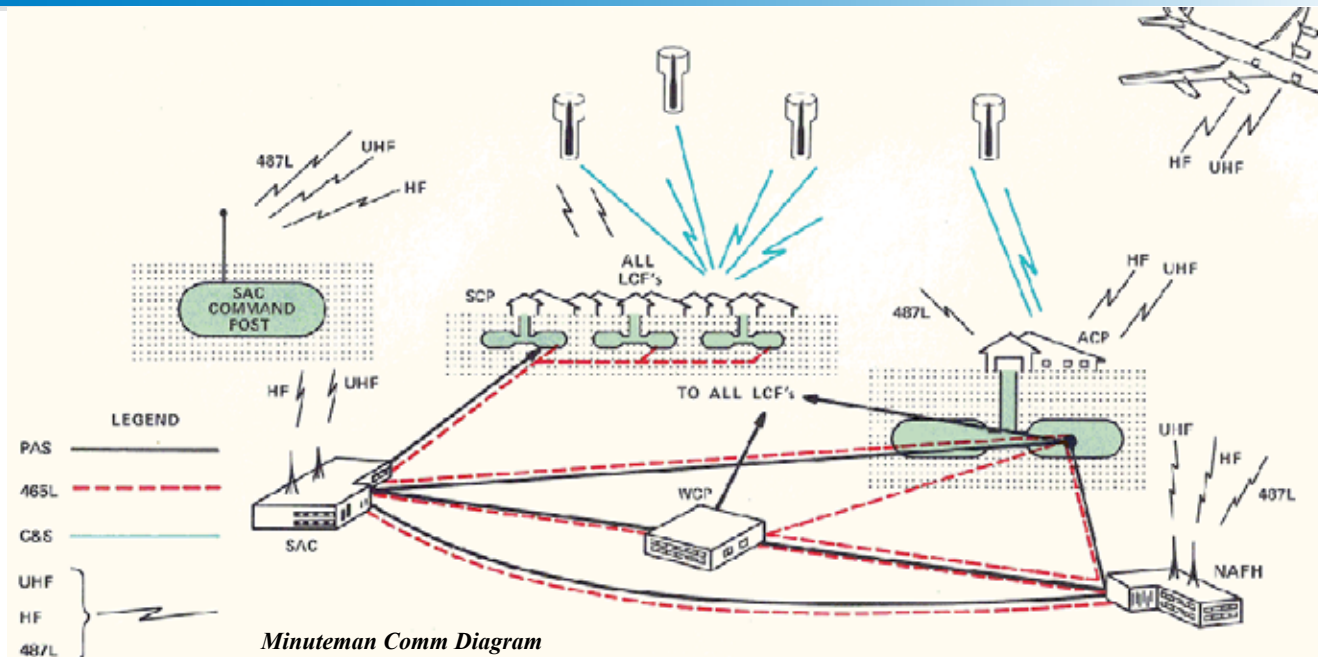
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Can You hear Me Now? Missile Comm – by Col (Ret) Charlie Simpson, AAFM Executive Director

Every one of us, no matter what jobs we had, or now have, as missileers, communicated in one or many ways, with each other, with control elements, with equipment – with something or somebody a good share of the time we were on duty. There have been and are many different comm systems, and they could be discussed in a variety of formats. For the purposes of this article, we will look at the different ways we communicate, and tie each to the systems that had or have them.

We have simple telephone and radio systems that we use to communicate with each other on a daily basis, sophisticated systems designed to communicate from the top down for command and control, data systems that provide the data to the operator or maintainer about the missile or support equipment and other systems for a number of specialized or specific purposes. Missiles have used low frequency (LF), medium frequency (MF), high frequency (HF), very high frequency (VHF) and ultra high frequency (UHF). We have had dial lines, direct lines, dedicated lines, underground buried cable and about every other method to deliver voice or data invented by man – well, maybe not the tin can and string.

You have seen photos of missile crew members and maintainers on old black telephones with rotary dials, with aircraft style headsets (there was a time that we had to use these basically all the time on alert) and with a variety of other “tools” to help us communicate.

We will start with the simplest, straight forward systems – the old basic telephone. With the exception of some of the field deployed missiles, like some of the tactical systems like Matador, Mace and Ground Launched Cruise Missiles, the telephone has always been one of the primary means for a crew member or maintenance technician to talk to another person.

The control centers for all the ground based missiles, from Atlas to Peacekeeper, has used what was basically a standard telephone as the primary comm link to the rest of the world. Atlas, Titan, Minuteman, Peacekeeper, BOMARC and the hardened shelter based tactical missiles all had standard dial line access on or near the consoles where the crew members sat on alert. Depending on the system, each site had two or three lines that were basically part of the home base telephone system, so a crew member could dial directly to the command post, job control, the office, home or anywhere else in the telephone system. While some systems had direct line access to some of the control functions, for others, the dial line was the only way to contact them. For example, Titan I had a direct line from the consoles to Job Control, the 24 hour maintenance tracking organization. But in Minuteman, the crew member had to dial the regular phone to reach this agency.

Regular dial lines were reliable, for the most part, and used the buried cable system in some missile systems to connect to the local phone network. Lines did go out on rare occasions, due to a cut cable somewhere or a downed above ground phone line, but not often. We did have a unique experience at one Titan I base, Mountain Home, when the telephone



Using the Headset for Comm

company that provided service to two of the three sites there had a brief battle with the Air Force about “the phone bill.” At Mountain Home, a local phone company in Grandview, the small town near B-Site, had installed and serviced the lines to B and C sites. One morning, the telephone lines at both sites all went dead. When the base comm folks finally got hold of the local telephone company owner, he explained he had cut off service “at the main office” because the Air Force had not paid the bill. He had filed a complaint that he was owed several thousand dollars to reimburse him for new telephone trucks and other equipment required to support the new missile sites. After a lot of discussion between the owner and the base legal and contracting experts, the issue was finally resolved, but not before the news got out to the local press. A few weeks later, one of the magazines similar to Mad Magazine that existed in those days had a cartoon on the back cover, showing an irate Air Force general in a phone booth, outside a fence with a sign that said “USAF Missile Site,” asking, “What do you mean I didn’t pay my phone bill?”

Almost all of the ground systems used a lot of direct two way telephone lines, or intercom lines, internally at the site or between sites or other agencies. These direct lines provide immediate access for status reporting, maintenance troubleshooting, conferencing and many other purposes.

The base command post usually had a direct line to each missile site, so the controller in the command post could talk directly to the crew. Job Control, and possibly some other maintenance functions, had similar direct lines. In some systems, the crew members could access security or transportation control centers directly instead of through the dial phone. There were also direct lines between missile control centers. In Titan I, one of the aspects of the guidance system was that the radar guidance system at one site could be used to guide a missile from another, if the home site guidance system was out of service. This “handover” process required direct comm. During the process, so the

guidance officer at one site could use his direct line to call another site’s guidance officer.

In Minuteman, the Hardened Voice Channel (HVC) provides a direct connection between the five launch control centers in a squadron. The HVC can be used for calls between two control centers or all five can be conferenced at the same time. The conference call function is a key part of the process during execution – all five control centers conduct a conference call verifying that a valid execution message has been received and that all are preparing to launch missiles. The conference capability also provides a rapid way for one crew to inform the other four when one site is running a procedure that impacts the status indications at other sites.

In Minuteman, some of the sites (those designated as the squadron command post) also have direct lines to the sites in the other squadrons in the wing with that responsibility, for inter-squadron coordination of activities. Each launch facility (LF) is connected by direct telephone line to the parent Launch Control Center (LCC). The combat crew can patch a call from one of the LFs to one of the dial lines allowing maintainers to talk to Job Control or one of the maintenance shops. The launch crews also have direct access to the security control center topside and to various locations in the Missile Alert Facility to talk to the Facility Manager.

In the large sites, like Titan and Atlas, there were many direct lines that connected locations throughout the missile silos, equipment buildings, power houses, fueling terminals and guidance area to the consoles in the control center. These intercom lines also allowed maintenance personnel to talk to each other from various stations in a specific silo or area, and were used often during a specific maintenance procedure that required constant coordination during the process. During exercises or real launches, a number of people were on what then became the “countdown net” as the step by step checklist was completed for the launch process. The big, liquid fueled missiles had involved and complex maintenance procedures that sometimes required constant communications between technicians both at various stations in the missile silos and in other areas both below and above ground.

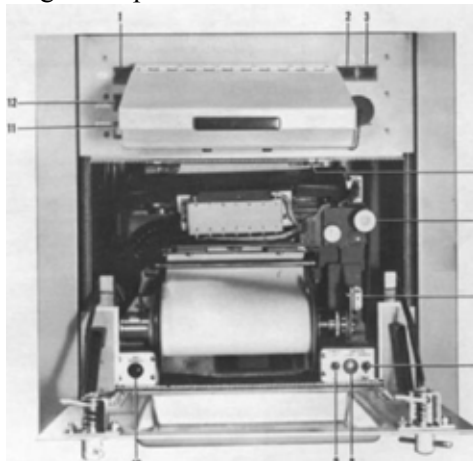


Minuteman I Comm and Enable Panels

Probably the key aspect of command, control and communications is the ability of a higher headquarters to get important, meaning “execution” and “preparatory” messages, to the missile combat crews. It is now called the Higher Authority Communications Network and is made up of many different comm systems. Early in the history of the Strategic Air Command (SAC), the Primary Alert System (PAS) was developed. Originally, the PAS was a direct line telephone system between the SAC underground command post and all its subordinate command and control centers (numbered air force and wing command posts). With the advent of the ICBM force, direct links were added to each missile LCC. That way, each missile combat crew on alert receives voice messages directly from the originator. All of us who sat alert remember the distinctive “warble tone” that precedes each command and control message, whether it be a test, practice, exercise or real. Crew members also remember well the “Skybird, this is Dropkick” preamble to every message. Crews and command post controllers copy and decode these voice messages and perform the required actions that they direct. It could be anything from a simple acknowledgement up the chain of command to changes in readiness or a direction to launch missiles.

In the missile business, the squadron level command posts (one Minuteman site in each squadron) also have the ability to talk back to the major command underground command post on the PAS. The famous “red phone” on the command console provided that access.

Of course, the PAS isn’t, and wasn’t, the only method to deliver command and control messages to the combat crews. We were trained to react to any valid message no matter how it was delivered – and SAC had a lot of ways to deliver them. One of the first is the SAC Communications System, now the Strategic Automated Command and Control System (SACCS), originally known as the 465L. This hard wired, encrypted, teletype system delivers messages to a printer in each control center. As with



SACCS (465L) Printer



PAS Panel for SCP

the PAS, the command posts at each level have the ability to transmit messages back up the chain on the SACCS.

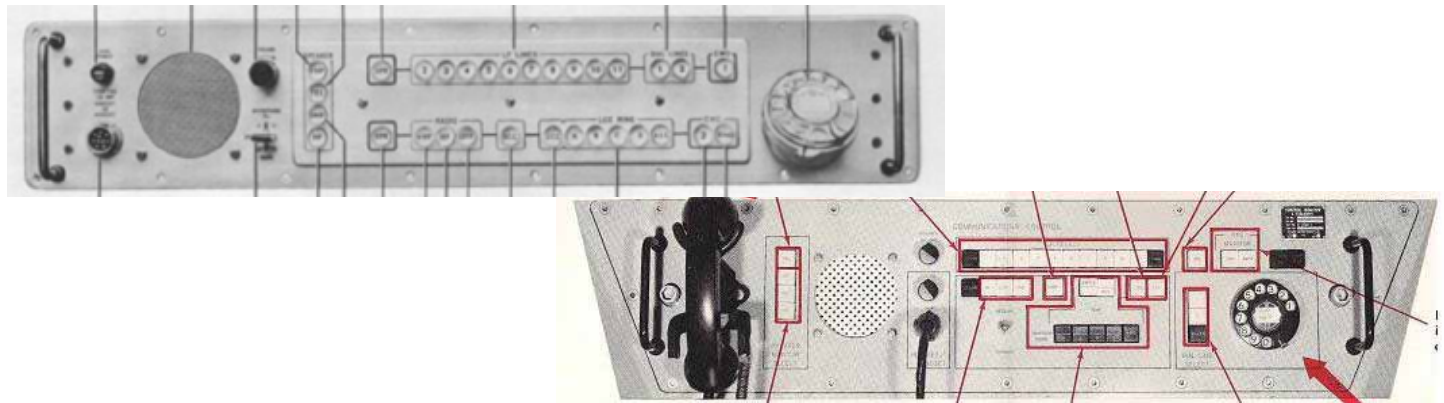
The Survivable Low Frequency Communications System (SLFCS) came on line in the 1960s, a slow data transmission radio system that used two large antennae – one in Nebraska and one in California – to get the messages to the crews. SLFCS transmitted the data very slowly – it could take several minutes to transmit a message that could be received in voice format in a matter of seconds. But it was designed to survive nuclear attack and still provide command control connectivity.

A little later, the Satellite Communications System (SATCOM) came along. Now made up of several systems, it includes the UHF Air Force Satellite Communication System (AFSATCOM), UHF Military Strategic Tactical and Relay (MILSTAR) and the ICBM Super High Frequency Satellite Terminal (ISST).

A couple of other radio options have also been part of the picture for some time. The 279L system, originally with Blue Scout missiles based in Nebraska, and later with modified Minuteman II missiles, used UHF transmitters in the missile payload sections. It became known as the Emergency Rocket Communications System (ERCS). Crews responsible for the ERCS function would record the messages into the missile payload before launch, and the missiles would broadcast the messages during flight. The messages would be received on UHF receivers in the LCCs.

The HF radio system was one that kept crews busy for a long time. For many years, the responsibility to be the Missile Radio Communications System (MRCS) station for the wing or squadron was passed between LCCs periodically. The MRCS crew had to respond to radio checks hourly throughout an alert tour, and all LCCs monitored designated HF frequencies that provided a backup method of message delivery.

All of these comm systems also connected the LCCs with the airborne command post – Looking Glass in the SAC days, now the TACAMO (take command and move out). Of course, the airborne component also includes the airborne launch control system, a method for a battle staff airborne in a flying command post to launch Minuteman missiles that



have been isolated from the normal control center. In the SAC days, we not only had Looking Glass airborne 24 hours a day, we also had two auxiliary flying command posts, East Aux and West Aux, the eastern and western backups for the Glass. And we had the Airborne Command and Control Squadrons that flew modified EC-135s randomly, during exercises and increased readiness that added another link to the missile force.

The UHF radio served another purpose – it provided comm between the LCCs and helicopters used to ferry crews, maintenance and priority parts to the sites. And we had the old standard VHF, the military version of the CB or citizen's band radio, originally used by truckers, and adapted by many drivers in the 1970s. Ops, security and maintenance vehicles have VHF radios to communicate between base control centers (transportation control center and job control), as well as between the maintenance and security teams and the crews in the LCC.

All in all, there has always been a lot of voice traffic in the LCC, both from land lines and radio systems. Most of us who served as crew members quickly became adept at listening to and responding to several systems simultaneously.

Another telephone-related system in earlier ICBM sites was the enable system. For example, in Titan I, there was a direct line connection between the wing command post and each of the three launch control centers in the squadron. The controllers in the command post had to physically enable each missile for launch before the crew could complete launch actions. Before the advent of the coded Enable Panel in Minuteman and the Coded Switch in Titan II, there was a physical link with an enable switch between the crew and each missile. In Minuteman I, the deputy had ten enable switches on his console, one for each of the ten missiles in his flight. By the time Minuteman II and Mod came along, these switches were replaced with an enable command initiated by the crew, either to all missiles or those specifically selected. The Enable Panel code switches replaced these, and required an alphanumeric code

that became part of the execution message.

In even the earliest systems, and surely true with those now, much of the equipment, both where the missile is and where the crew is, relate to direct status and command communication between crew and the missile. Routine data traffic includes status reporting on everything from security alarms at a site and sump pump problems to the status of each aspect of a missile system. The incoming data to the LCC activates lights, alarms, printers or some other piece of status monitoring equipment, keeping the crew advised of all aspects of a missile's condition. Early missile systems used hard-wired, direct reporting links, but the advent of the computer led to time sharing, sequential status queries and more complex and detailed information about systems.

The other aspect of what is sometimes called the ground electronics system is the command generation part of the system. The crew can initiate various routine or special purpose tests for a specific missile or a flight, as well as send the commands that retarget, arm and launch the missiles. Earlier systems used switches and punched computer cards or punched tape for these tests and commands, since early computers had no or almost no permanent data storage devices. Even the arrival of the hard disk in the early 1960s did not add much capability for the early Minuteman systems – a disk the size of a dinner plate didn't store many kilobytes of data. Now commands and queries can be sent almost instantaneously using the controls on the command console.

Except for Grand Forks and one squadron at Malmstrom, the Minuteman wings came with a complex, redundant buried cable system to connect the LCCs to the LFs. The Minuteman II ground electronics system, developed by Sylvania, replaced the redundancy with an MF radio system. The LCCs could "talk" to the LFs either by a single hardened cable connection or through large buried antennae at the LCC and each LF. The MF system was a little slower in data transmission, but was planned to be more survivable than the redundant cable system.

During the 1980s, another missile system became



The HF "Christmas Tee" antenna and one HF Pop-up part of the Air Force inventory for a few years. The ground launched cruise missile (GLCM) was deployed in Europe, a mobile system that, in times of increased tension, was sent to the field to "hide in the bushes." GLCM presented some new challenges for the comm experts, since the GLCM flights (two LCCs and sixteen missiles in four transporter erector launchers) could be many miles from the home support base. There weren't any land lines, so all comm had to be by various radio systems. There were some internal flight comm systems that could be set up at the deployed location for comm between members of the flight, but all outside comm depended on the same basic radio systems as Minuteman – VHF, UHF and satellite. We'll cover some of the specifics of GLCM comm in the future.

There is a lot more to missile comm – and many of you have some good stories. Some of the folks who maintained comm systems were part of the missile unit, others part of a separate comm squadron at the home base. They were really all part of the same Air Force, but sometimes under a different command. And it is difficult to explain all aspects of missile comm in a single article, so we look forward to some good input from some of you who are the real experts.

Northrop Grumman, ATK Test Minuteman III Stage 1 - *a joint NGC/ATK press release*

Northrop Grumman and ATK recently successfully ground-tested a Minuteman III Stage 1 solid rocket motor for the Air Force as part of the Minuteman Solid Rocket Motor Warm Line (SRMWL) program at ATK's test facility in Utah.

This test was the second Production Quality Assurance (PQA) ground test of the SRMWL Stage 1. The first Stage 1 PQA was successfully tested on 24 March 2011.

The SRMWL is designed to sustain critical propulsion-related skills to ensure the weapon system can be sustained. The Minuteman III program began in 1966 and currently maintains 450 missiles deployed at three missile wings.

"We prepare for and assess every ICBM test very rigorously, and the success of this Stage 1 test provides one more point of assurance of the integrity and reliability of the ICBM weapon system today and the solid rocket motor industrial base for the years to come," said Tony Spehar, vice-president of Northrop Grumman's Missile Systems business unit. Northrop Grumman is the ICBM prime contractor and responsible for overall sustainment of the ICBM weapon system.

As part of the SRMWL program, up to ten motor sets over two years will be manufactured by ATK under contract to Northrop Grumman at ATK facilities in Utah. The objective of the SRMWL's PQA testing is to demonstrate the motors perform as designed. Each of the three stages is tested every year. Ground tests for Stage 2 and 3 are conducted in altitude chambers at Air Force's Arnold Engineering Development Center in Tennessee and each was successfully tested this past summer.

"This successful test demonstrates that the motors produced under the warm line contract are fully representative of deployed first stage ICBM motors," said Scott Lehr, ATK Aerospace Systems vice president and general manager of Strategic and Commercial Systems. The warm line program also maintains the critical skills, infrastructure and supplier base necessary to produce ICBM propulsion hardware in the future."

The refurbished Stage 1 case used in this test originally entered operational inventory in January 1961. ATK has manufactured over 4,000 Minuteman motors over the life of the program. The company recently completed a successful 10-year Minuteman Propulsion Replacement Program that produced approximately 1,800 re-manufactured motors.

2011 Missile Heritage Grants

A committee of three AAFM board members reviewed nine grant applications totaling over \$30,000 and selected four museums for the 2011 grant program. With the addition of the \$11,180 awarded this year, we have now provided more than \$170,000 to 23 museum since 1993.

The March Field Air Museum, Riverside, CA, was provided \$3,100 for an AGM-129, Advanced Cruise Missile display. The Indiana Military Museum in Vincennes, IN, a new museum to our program, was awarded \$2,280 for a TM-76A Mace display. The Mace was moved from Orlando to the museum last year by members of the TAC Missileers, and covered in recent AAFM newsletters. The National Museum of Nuclear Science and History, Albuquerque, NM was provided \$3,300 for a Titan II Display. The Whiteman AFB Museum, at LCF Oscar-01, was awarded \$2,500 for

renovation of the Flight Security Control Center area of the museum and to archive historic documents properly.

The AAFM Missile Heritage Grants are awarded each year in memory of AAFM members who have passed away since the last grants were awarded. Note that this year, we added some names of members who had passed away earlier but AAFM was not made aware of their deaths until recently. This year, we provided the grants in honor of the following members: Major (Ret) Robert O. Arnold, Col (Ret) Calvin Chasteen, Richard Ciampi, Col (Ret) Harold D Courtney, Lt Col (Ret) Leo "Butch" Elze, SSgt (Ret) Fred C. Hansen, Brig Gen (Ret) Gerald Fall, CMSgt (Ret) Robert Ketchum, Capt (Ret) Clarence E. Lyons, George W. Gott, Donald E Madden, SMSgt (Ret) Melvin H. Moffitt, Major (Ret) Robert P. Murray, Lt Col (Ret) William Neighbors, James Olson, Lt Col (Ret) Bruce Rodie, Col (Ret) Sam Ruvolo, Maj (Ret) Val Smith, Col (Ret) Carl D. Smith and Maj (Ret) Frederic Usui.

Guns and Missileers - by Col (Ret) Charlie Simpson, AAFM Executive Director

Every once in a while, we get an inquiry about the weapons that missile crews once carried. Many of us served at a time when the commander and deputy on a missile crew were armed with .38 pistols. It was true for the systems before Minuteman, and continued for some time. We had black leather holsters and a .38 revolver with six rounds of ammunition.

Most of you have read or seen the stories about the "pistol" and what it was supposed to be for - at least in some people's minds. There was a fairly well done short film back in the 1970s made by an Australian filmmaker about a missile crew on duty when the force was executed. The set looked like a real Minuteman control center, and the crew wore authentic looking white coveralls. That part was a little out of date by then - we went to two piece blues in the late 1960s. In the film, after receiving and processing several preparatory messages (sounding pretty close to the way we heard them on alert), the crew began arguing about going to war. When the order to launch came, the argument continued, with the final scene showing one crew member aiming his pistol at the other because he would not turn keys. The scene faded as a shot was fired.

Those of us who wore those holsters knew why we had them. It started in the Atlas and Titan days, when the two officers were armed. We had to carry weapons any time we had certain classified documents - and there were a lot of those in a control center. In Atlas and Titan, there were a lot of people on the site, so the officers were armed a lot of the time. When Minuteman came along, we continued to be trained on the pistol and qualified every year. When the

blast door closed and there were only the two (or three, for a while) crew members there, we could hang the holsters near our consoles. We "rearmed" before we opened the blast door for any reason. We even had holsters (no pistols) in the missile procedures trainer, and had to wear them any time the scenario called for someone to be with us in the "control center." Of course, the instructors or evaluators didn't count, since they "weren't really there." We did give a crew member an error, though, if he forgot to put on the holster before letting a visitor in.

We guarded a lot of classified - not just the Red Safe, but many other documents related to our mission. We also had to wear weapons when we couriered certain documents or equipment. Remember the old "P-Plug" duty back in the 1960s. I suppose the weapon would have been of some use after the war when we exited by the escape tunnel, but the .38 was not a great gun for hunting. But we had no plans to shoot our fellow crew member - it wouldn't help much, anyway, if he lay slumped over his red chair with a bullet in him, and you had two keys to turn well out of the reach of each other.

As a sidelight, in about 1967, I submitted a suggestion to SAC to change the qualification process for us on the .38. We were required to fire from 25 to 50 yards at a distant target, and rapidly reload the weapon. The size of a launch control center was well short of 25 yards - and we only had the six bullets in the gun - so why train that way? My suggestion was disapproved with the reason "the crew member's capsule might be shot down in hostile territory, so the training was necessary."

Taps for Missileers

Robert Auger, who served in Atlas in the 556 SMS.

Col (Ret) Richard W. Beck, who served in Snark in the commander of the 702 SMW and Atlas as commander of the 556 SMS, at SAC Headquarters, and lived in San Antonio, TX.

Maj (Ret) Arthur Broadbent, who served in Atlas in the 556 SMS.

James Olson, an AAFM Member, who served in Mace in the 498 TMG and Titan II in the 308 SMW, and lived in Atlanta, GA.

Lt Col (Ret) Bruce Rodie, an AAFM Member, served in Titan II in the 390 SMW, in Minuteman in the 341 SMW and in GLCM in the 487 TMW, and lived in San Antonio, TX.

Minuteman Missile Models

Available in all white (like at the front gate) or in real colors (one of the color schemes that was in use for each system)

Minuteman I, II and III

\$200 each, six to eight weeks for delivery

Contact AAFM to order

New Walker Museum Exhibit - by Dr. Marie Talnack, Director, Roswell, NM

Much has happened since the award in January 2011 of a grant to the Walker Aviation Museum, for an exhibit to commemorate the 579th Strategic Missile Squadron. The exhibit at the Roswell Industrial Air Center, Airport Terminal is located in two rooms directly across the hall from the main museum. The exhibit displays memorabilia of the training and operation of the 579 SMS.

The display features a Timeline of Events and photos illustrating the evolution of the US missile program. The upper half of the Timeline documents important national events in US history and national security. The lower half illustrates New Mexico's and Roswell's contribution to these national events and security. This includes the early rocket testing of Dr. Robert Goddard outside of Roswell, the development and testing of the Atomic Bomb here in New Mexico, and the return of the 509th Composite Group, including the Enola Gay, that returned from Tinian Island after WWII to Walker AFB.

The exhibit also features four videos documenting the development and eventual use of the Atlas missile in the space program and US Army Corps of Engineers' video of the missile sites at Roswell. In the adjoining room there is the exhibit: "Anatomy of a Missile". Diagrams of the missiles and the missile silos are shown along with an actual command and control console from a local missile site. This exhibit represents a permanent display of memorabilia from the 579 SMS assigned to Walker AFB.

Members of the 579 SMS will hold a reunion 4-9 May 2012, to recognize the 50th anniversary of the squadron's activation - see the back cover for details. The museum and exhibit are open Monday, Wednesday, Friday and now Saturday from 0930-1530. Special arrangements at other times can be arranged by calling the museum directly at 575-347-2187.



New Walker Display Room



New Walker Timeline Display

51 MMS Members Dedicate Plaque

Members of the 51st Munitions Maintenance Squadron (MMS), once a Vandenberg unit, participated in the dedication of a memorial plaque honoring the organization's many significant accomplishments at the National Museum of the Air Force in Dayton, OH. The 51 MMS did the first installation of a reentry vehicle containing a war reserve weapon, on an Atlas missile in 1959. During the presentation, CMSgt (Ret) Jon Lindgen described the work conducted at 576 A-1 gantry, site of the first alert. "Things didn't all go well, and we spent hours working at Station 75."

It should be noted that there weren't any tech orders (TO) to cover this, and some of this work was performed at night. During the following years, most all of the initial RV and ICBM TOs were written at Vandenberg AFB.

As stated on the plaque, the squadron maintained and tested RVs for all the USAF ICBM systems, so all the payload flight hardware went through the 51 MMS. This activity was conducted from 1959 to 1972 and later assumed by the 576 FLTS, which was originally the 576 SMS.

The dedication was conducted by MSgt (Ret) Joe Harker, and included acceptance of the plaque by General Hudson, Director of the National Museum of the Air Force. Remarks about the early days of unique experiences working at Vandenberg, by CMSgts Mathis and Aldridge. It ended by a quote from MSgt (Ret) Jerry McGee, "Remember it's what's up front that counts."



51 MMS Plaque at National Museum of the USAF



The 2011 Blanchard Winners - 90 MW

The 2011 Air Force Global Strike Command Challenge

The second AFGSC Bomber and Missile Competition was conducted in Shreveport and at Barksdale AFB, Louisiana, 7-9 November 2011. This new event brings back many of the old traditions of the original bomb and missile competitions, including the big blue scoreboard, magnetic numbered scores, non-commissioned officer score posters and more. Bomb and missile crews, maintenance and munitions teams, security forces teams and helicopter teams competed, with more than 450 competitors this year. All but the security teams competed over the two or three months preceding the Shreveport event, but were not advised of their scores. The security teams competed in Louisiana at the start of the November gathering.

All of the competitors, staff, contractors and others attended the Air Force Global Strike Command Technology and Innovation Symposium 2011 at the Shreveport convention center during the three day event. On the opening night, Lt Gen James Kowalski, commander of AFGSC, welcomed all to the comp and received the trophies back from the 2010 winners. On Tuesday and Wednesday, the symposium featured a number of speakers and panels covering a wide variety of topics relating to the bomber and missile force and nuclear deterrence. AAFM Board Member Maj Gen (Ret) Tim McMahon was one of the featured speakers.

On Tuesday evening, the symposium hosted a Santa Maria BBQ for all attendees and the AFGSC historian reviewed the history of the bomb and missile competitions. One of the real highlights came at lunch on Wednesday, when Army Air Corps First Lieutenant Leon Smith, one of the three weaponeers with the 509th Composite Group, told the story of the preparation and dropping of the first two atomic bombs on Japan and the subsequent first post-war test, Operation Crossroads. He was immediately surrounded by the 509th Bomb Wing competitors after his talk. He told a great story and had many superb photos taken at Wendover, Tinian and on the missions.

AAFM was a sponsor for the symposium this year, and your executive director, wife Carol, and board members CMSgt (Ret) Mike Kenderes and Maj Gen (Ret) Tim McMahon were at our display to talk to competitors and other participants.

Score postings were held at Barksdale at Hoban Hall both Tuesday and Wednesday nights. As in the past, the score postings featured a lot on noise, mascots, cheers and calls to "Post 'em." Trophies were awarded throughout both Tuesday and Wednesday nights. On Tuesday evening, AAFM board member General McMahon and your executive director presented AAFM's 2011 Challenge coins to the youngest bomb and missile competitors. AAFM provided 600 coins to the command for each Challenge participant. The Fairchild and Blanchard trophies were awarded at the end of the final night's posting.

The results of the 2011 Competition:

Blanchard Trophy for Best ICBM Wing, 90th Missile Wing, F.E. Warren AFB, WY
Linhard Trophy (Best ICBM Ops Crew) 319th Missile Squadron, F.E. Warren AFB, WY
Blackburn Trophy (Best ICBM Missile Maintenance Team) 90th Missile Wing, F.E. Warren AFB, WY
Best Missile Maintenance Team 90th Missile Wing, F.E. Warren AFB, WY
Best ICBM Electronic Lab Team 90th Missile Wing, F.E. Warren AFB, WY
Best Security Forces Tactics 91st Security Forces Group, Minot AFB, ND
Best Security Forces Mental and Physical Challenge 91st Security Forces Group, Minot AFB, ND
Charlie Fire Team (Best Security Forces Group) 91st Security Forces Group, Minot AFB, ND
Bourland Trophy (Best Helicopter Squadron) 54th Helicopter Squadron, Minot AFB, ND
Best Helicopter Tactical Crew 54th Helicopter Squadron, Minot AFB, ND
Fairchild Trophy for Best Bomb Wing 28th Bomb Wing, Ellsworth AFB, SD
Linebacker Trophy (Best B-52 Squadron) 96th Bomb Squadron, Barksdale AFB, LA
LeMay Trophy (Best Bomb Squadron) 93rd Bomb Squadron, Barksdale AFB, LA
Best Bomber Conventional Load Team 2nd Bomb Wing, Barksdale AFB, LA
Best Bomber Munitions Maintenance Team 2nd Bomb Wing, Barksdale AFB, LA
Ellis Giant Sword (Best Bomber Maintenance Group) 2nd Bomb Wing, Barksdale AFB, LA
Spirit Bell (awarded to the team who best represents Global Strike Challenge teamwork and esprit de corps) 2nd Bomb Wing, Barksdale AFB, LA

You can have your own 2010 or 2011 Challenge coin - go to our Donations/Store on page 19.



Vital Mission, Elite Team, a Reflection

on the ICBM Force - *from the remarks of Maj Gen (Ret) Tim McMahon, an AAFM board member, at the 2011 Global Strike Challenge*

This is a frank discussion on the mission of the ICBM force. I use the term “force” deliberately and by “force” I mean the Minuteman III weapon system itself; the men and women across the Air Force and industry who operate, maintain, secure, sustain, and support the system; and, the nuclear command and control that knits it all together operationally to achieve mission objectives.

There is another, less visible, but critically important component of this force, and that is its culture - a culture of respect for the uniquely high standards demanded by nuclear surety, and, a culture of both critical self-assessment, and pride in proper mission accomplishment. Global Strike Challenge celebrates that culture, and builds on it! The ICBM force has achieved 52 years of service to the deterrence mission and the Minuteman weapon system reached the 49th anniversary of its initial deployment to Malmstrom AFB last month. MM III first went on alert in the 741 SMS at Minot AFB in December 1970 - 41 years ago. The force has now exceeded 17,885 days of continuous nuclear alert, and this morning, they head back out to the field - the “morning surge” is underway! With that in mind, I’d like to offer three assertions for your consideration.

First: all military missions are important; but, none has been, or remains more vital to the security of this nation than the deterrence of strategic attack against our homeland and our allies. A credible and reliable ICBM force, at the New START Treaty level of 420 on-alert sorties, not only deters, but, it also serves to dissuade others from attempting to compete with us at this level, while assuring our allies that our deterrent extends to support their national security as well. Any of these three objectives, or military effects, is sufficient to justify the existence of our current triad of strategic forces; and, the ICBM force has critical attributes which address each of these policy objectives in unique ways.

The second assertion is that there are two myths which are commonly associated with the Minuteman weapon system. The first myth is that the force is not survivable - that

it is highly vulnerable to a potential large scale attack. That was a valid policy and operational concern, at the end of the Cold War when the Russians could have mounted a 2 on 1 attack against the force with about 20% of their ICBM force. The facts today are nearly the opposite; the Russians would have to expend at least 50% of their force to mount such an attack. Under New START Treaty limits, the Russians would have to expend about 60% of their ICBMs to mount such an attack against 420 launch facilities, and, that’s assuming very high levels of Russian ICBM system reliability. Under current and New START Treaty conditions, Russian and US ICBM forces are in essential balance and they are strategically offsetting. The attack ratio is so unfavorable to preemption that it utterly deters; and, it generates enormous stability in a strategic-level crisis. Nevertheless; this myth is frequently asserted as truth; and I believe it was influential during nuclear posture review; and, New START Treaty deliberations.

The second myth is that the ICBM force is on “hair trigger alert”. There are two versions of this myth. The first version goes like this: Because the force is “highly vulnerable”, then we might be compelled under attack to “use it, or lose it.” There are at least two problems with this argument. First, the premise of force vulnerability is false. Second, it seems to suggest that those involved in advising and making such decisions might be preconditioned to make a decision based on a fundamental misunderstanding of the facts. The second version of this myth confuses weapon system responsiveness with alleged risk of inadvertent or unauthorized launch. It is based on a lack of knowledge, or understanding of fundamental physical and use control safeguards built into the weapon system itself, and, the procedural safeguards embedded in emergency action and weapon system procedures. I mention these two myths because they surface routinely in conjunction with discussions on the way ahead for our strategic forces. Given the potential magnitude of decisions stemming from these discussions, it’s critical that we speak credibly on both the attributes of, and the size of the force; and, that we address the myths that misrepresent those attributes.

The third assertion is that no component of our strategic capability has contributed as decisively to the daily success of the mission of strategic deterrence since the end of the Cold War than the ICBM force. That is not to understate the relative importance and unique attributes of the bomber or SLBM legs of the triad. Rather, it is a consequence of the daily alert posture of the ICBM force. Retained on continuous alert, here in the homeland, the ICBM force represents America’s ability to defend ourselves under the most desperate circumstances, and if necessary, to impose our national will by projecting devastating power over near-global distances with a promptness unmatched by any other military force. At the same time, there is a paradox associated with deterrence. The utility of the ICBM force is

often questioned because of the faulty assertion that it has “not been employed operationally.” That’s the paradox; but, that’s also the point!

The political objective and military effect of strategic deterrence is to make our capability so overwhelmingly clear to potential adversaries that the mere presence of an on-alert, reliable ICBM force is by definition an “employment” of the force. It generates strategic-level, psychological and political effects that fend off crisis potentially leading to great violence. Some have difficulty understanding that the deterrence of violence, at all levels, transcends warfighting in both national security, and moral terms. The extent to which the ICBM force achieves these effects, is again, a sufficient purpose to necessitate and substantiate its existence at New START Treaty levels.

While we believe the likelihood of a strategic attack has declined since the end of the Cold War - although no one can say with authority by how much - we cannot be certain that the possibility of attack equals “zero.” On the other hand, the failure of deterrence, or a nuclear attack of any size would have utterly grotesque consequences. Multiplying the high number associated with “consequence” by the low number associated with “probability,” yields a high number. Either way, the result is always a high number! So the paradox of deterrence is that it addresses a low probability/high consequence event at a level commensurate with our supreme national interest - our survival as a nation and a society. Deterrence is therefore, in my opinion, important on a scale which defies measurement.

By virtue of their mission and the weapon system they operate, maintain, secure, and support, the men and women of our ICBM force stand in a league of their own when it comes to the level of responsibility that rests on them. That level of responsibility remains constant, and has absolutely nothing to do with the size of the force!

On any given day, no other weapon system or combat force provides the nation with the military power that resides on alert - in their custody. Their mission is deterrence; and, the core imperative of their daily effort is nuclear surety.

DOD directives and AF Instructions provide our working definition of nuclear weapons surety, but, I think of it as two straightforward, absolute guarantees that the men and women of the force must deliver on every day - 24/7.

The first guarantee - if the president directs the force to execute a nuclear option, then he can have the unconditional confidence that the force will execute precisely when and as directed. It has nothing to do with the likelihood of receiving of receiving that order.

The second guarantee - absent that order, the American people have absolute confidence that the force is safe - that it is utterly secure; and, that it remains reliably

ready.

If they can’t deliver on the first guarantee, then the force serves no political or military purpose. It simply would be irrelevant. If they can’t provide the second guarantee, then the mere existence of the force is intolerable. Making good on both of these guarantees is tough, demanding work; and, it drives standards throughout the weapon system and the force that are extremely high and even rigid. Compliance with these standards must continue to be absolute, as it has been for over 50 years.

Meeting the demands of the mission and nuclear surety over the years drove some of the toughest and best training, standardization and evaluation and inspection programs in the Air Force. These programs drove readiness and provided the environment in which we developed experience, deep expertise, and leadership. They fostered confidence and the credibility of the force. I know that General Don Alston has 20 AF keenly focused on these standards and programs today!

I’ll assert that meeting the demands of nuclear surety has made the ICBM force “elite” in many ways. They are “elite” because they are responsible for a uniquely sensitive mission of national importance. They are “elite” because they are continuously and highly trained, rigorously evaluated and thoroughly inspected. They are held to the highest standards of military professionalism and discipline. They are, and must remain, accountable for all they do - for every step, of every checklist.

They respect and take care of each other, and while many take them for granted, to include a few folks in our own Air Force, they have rightfully earned the respect of millions over 50 years - including me!

I stated earlier that “culture” is a component of the force. In the nuclear enterprise, we refer to a “culture of critical self-assessment,” and a determination to get better at what we do. Over 50 years of alert, we’ve become very good at what we do; but we know better than to settle for that. A big part of ICBM force culture has been built on the experience of competition. We’ve called it Curtain Raiser, Olympic Arena, Guardian Challenge, and now, Global Strike Challenge. The names change, but the theme and the objective is constant - start at “good” and raise the level of mission accomplishment at all levels by “busting chops” to be the best.

Global Strike Challenge is about the mission; but, it’s also about building our style and culture as a command. It’s about building on the pride we take in getting a tough job done to deliver on those two guarantees. Only one bomb wing can win the Fairchild; and only one ICBM wing can win the Blanchard; but wanting to compete - and to be the best, makes each of us better, as individual airmen, as flights, squadrons, groups, wings, numbered air forces and the entire command.



Jewett and Kears

Missile Competition: the Game

Plan - Lt Col (Ret) Tom Jewett, AAFM Mbr No A1884, Fountain Valley, CA

Football players study their playbook and analyze game film, then plan and practice for their next opponent. For missile crewmembers of my era, the playbook was our technical order (TO), the game film was a missile procedures trainer (MPT) script (sequence of events and problems), and the opponent we faced was called an evaluation.

In football, preparation for each game is intense. For playoffs, the intensity reaches new levels. By Super Bowl time, the intensity must be beyond belief. For a missile crewmember, the regular-season game (very serious for us, of course) would be a local standardization board check. The “playoff” intensity level was a headquarters evaluation (in my day, by the 3901 SMES). But the missile combat competition (Olympic Arena back then) was the Super Bowl of our business.

Olympic Arena (or simply OA) was an important part of my missile years, as it has been for many others. Headed for Grand Forks, I was in operational readiness training (ORT) at Vandenberg during the 1971 competition. Our wing commander, Col (later Brig Gen) Paul Krause invited several of us to his quarters to meet the 321 SMW competitors, and I was hooked. On the last day of training, my MPT partner Marty Kears and I promised each other that we would compete as a crew in two years. In the end, it was three years.

In a way, though, we had both been preparing for this all along. Marty had competed in 1973 then gone to standboard with duties including MPT script writing. I had been backup OA crew commander in 1972 then gone to the instructor shop as a scriptwriter and supplemental MPT operator, returning from Squadron Officer School in 1973 too late for crew selection but in time to help with training. By 1974, we had a whole lot of “game film” to rely on!

The majority of our team members (three more

competition crews plus backup) came with similar experience, and the few “rookies” were as eager to learn as any new NFL draftee. From the beginning, it was all about team performance, not individual “stats,” even to seemingly small details like crew numbers (those with more “prestigious” Wing designations dropped back to their squadron level so all would be the same). Of course, our crew schedules were synchronized, which I’m sure drove everyone else crazy even though our MPT times were always in the middle of the night.

Yes, MPT time was Super Bowl intense, but not without its share of levity. Crews took turns “on the floor” at the consoles and “upstairs” in the instructor/operator’s booth. There was no problem too complex or implausible for the upstairs guys to throw at their colleagues on the floor - one of them so bad that the deputy downstairs infamously “mooned” the booth! Good thing that the base bowling alley was open 24 hours: that beer sure tasted good when we finished up at 0600.

Perhaps the most intensive training actually happened while we were on alert. Leave the MBA books at home - forget the naughty magazines - you’re going to be mastering the T.O. “playbook” and a lot more weapon system knowledge that’s not even written down. Brief explanation for those not from the Minuteman system: there are five control centers in a squadron, connected so that all five crews can monitor each other’s status electronically and communicate directly by voice. Put five OA crews on alert at the same time in the same squadron and you get a lot of hours for one great study group! Sample minutiae: Q: What piece of equipment, made by Roanwell, must by regulation be used every alert? A: The telephone handset (since you had to call the Wing Command Post on crew changeover). Q: What is an MXU-345/E? A: The bunk in back of the capsule (at the time verboten for crew use). OK, those two are just for fun, but much of what we learned did get folded back into the Wing training program and even into a few T.O. changes - I’ve always considered this an important benefit of the sometimes-maligned competition.

Inevitably comes the Big Game day - or in this case, Big Game week. Thank goodness, the two MPT exercises or “rides” for each crew gave us “two halves to play” (though separated by days, not minutes). Also, thank goodness, for our team - three crews scored well in their first ride while Marty and I managed to fumble the ball and throw interceptions all day. After more than enough Coors and some intensive halftime coaching from ops project officer Capt (later Col) Ron Huff, we went back to the game film. “C’mon, man,” we’re both MPT script writers. Why don’t we just “write” and practice the script that we expect to see? Game planning paid off the next day: we had guessed so closely that it was almost scary both to us and to the evaluators.

The ending was all about the team, again. Our second, much higher, exercise score still wasn’t the game-winning

field goal - it took a spectacular final-day performance by our maintenance teams to finish the job. None of our crews or maintenance teams won an individual award, but in the always-dramatic final score posting, Grand Forks took home the Blanchard with only three points to spare.

That's one year and one competitor's story out of forty years and thousands of competitors. All have stories to tell; all can take pride in their serious contribution to the nation's security as they were "playing the game."



A Winter LF

Three Days on F-11 - TSgt (Ret) John W Mills, AAFM Mbr No L248, Elrida, AL

One dispatch I remember well, because it changed my opinion of launch control facility (LCF) crews and Job Control. It related to our dispatch to Ellsworth (the 44th Strategic Missile Wing) launch facility (LF) F-11 for a Guidance and Control (G&C) change, commonly referred to as a "can change," in early 1978.

I had recently graduated from Team Training Branch and assigned to work with 2nd Lt William Van Edmonds as his Combat Targeting Team (CTT) member. It was the policy in those days to put new team members or team chiefs with more experienced partners to help them learn the ropes.

Van was a very experienced team chief and was only a month away from being promoted to 1st Lt. That morning, we were scheduled to dispatch to F-11 for a can change. While Van was briefed out, I loaded the truck and checked equipment. The weather report was cold, with blowing snow. It had been snowing heavily that winter and that day was no different. The first CTT showed up for work beginning at 0230 with other targeting teams arriving for work every 30 minutes thereafter, until the last show time of 0400. Because targeting had to overwrite the cans, they had to be on site before the Missile Maintenance Team (MMT) and complete the shutdown so MMT could start their work.

We normally had one hour and 45 minutes to complete the upload, get entry codes, swing by the codes vault, pick up our guard and depart the base. Following a drive of approximately two hours, through blowing snow and low

visibility, Van and I arrived at the coordinates, but the site was missing. No fence, no outer zone antennas, no cattle gate. Van knew he was at the right place, because he could see the topside power poles with the reflective tape on the cross bars. We arrived at the crack of dawn to find the site buried under 10 plus feet of snow.

We called Job and told them the site was buried. They told us to start digging and we did. It took us an hour to find the access road, and once we found it, we called Job back and told them to halt MMT, since we were still outside the site fence and if they arrived, we would be violating the 30-minute separation rule between A-code and B-codes. Job, of course, felt we were exaggerating and sent out Field Supervision. MSgt Harry Perriman and MSgt Woody Woods arrived soon afterwards to assess the situation. They called Job and requested MMT return to base (RTB) as the site was indeed buried and it would days before anyone could get on. Job listened and sent MMT home. However, they felt since four of us were there, that we should continue digging. By 0900, a Facility Maintenance Team and two Electro-Mechanical Teams (EMT) showed up to help. By that time, we had managed to dig to the cattle gate and get our trucks off the road. Field Sup requested a Bombardier snow thrower, but Civil Engineers (CE) felt we would destroy their precious equipment and refused the request.

By noon, a Periodic Maintenance Team (PMT) and two other EMTs who already completed their jobs showed up to assist in the snow removal. Van and I had been shoveling since 0630 and were exhausted, but kept going. After 14 hours, Job sent us to bed at F-01 with two other teams; the rest had gone back to base. We got in at F-01 around 1600, exhausted, and hungry. The Facility Manager (FM) put all of us in one room, although he had three rooms available. There were only three bunk beds, and nine people (each team had one guard). We requested another room, but were refused and the FM even locked them up so we couldn't "sneak in." We placed our orders for dinner, and waited, and waited. The cops got their food, the FM got his, and the Ops crew got theirs, but no food for the maintainers. Lt Edmonds talked to the cook, and he reported they were short on rations and couldn't serve us, since his orders were to supply rations only to "permanent party" and ignore the rest. Van called Job about this, and they spoke directly to the cook. He refused to even give us peanut butter sandwiches. Van and I had a show time of 0230 and had been up over 18 hours, and hadn't eaten since breakfast.

We went to sleep on the couches in the dayroom, because there were no other beds available. We got up at 0500, when the cops came in for coffee. We tried to order breakfast, but again the cook refused. We called and spoke with Job and they transferred the call to the Deputy Commander for Maintenance (DCM), who personally spoke with the cook. The cook reiterated his directives and refused to feed us. We left the site and headed up to Mud Butte to get



After the Storm - a winter LF

some breakfast. Van paid for everyone (nine guys) and we ate well. Job called us and made sure we knew we had to return to F-11 when done eating.

After a hearty meal, we returned to the LF and found that during the night, the wind had blown most of the snow back into the areas we had cleaned out. When we arrived, there were nearly 30 guys shoveling the access road, and they had found the gate and were opening it. There was an MMT, several PMTs, EMTs, FMTs and Field Sup. They all knew about our little adventure the night before at F-01 and recommended to keep away from there from now on.

Throughout the remainder of the day, we shoveled and shoveled. By day's end, we had dug a trench to the Personnel Access Hatch (PAH) and started the penetration. Van directed the teams to dig out the Soft Support Building (SSB) so we could get the Safety Control Switch (SCS) key and start up the Hydraulic Pumping Unit (HPU). Once he had the key and completed authentication, we opened the PAH. Ellsworth sites had the hydraulic PAH door and it surely was a blessing that day. Banging out the PAH lock pin was a struggle, but as soon as it was clear, we hit the raise switch and through four feet of snow the door creaked open. As it continued to rise, the snow cascaded down into the shaft making another mess for later. I remember the PMT team found the J-ladder and were attempting to pull it up over the snow drifts and drag it over to the PAH. The snow in some spots was over 10 feet deep, and here were five guys pushing and pulling the heavy ladder up on to the drifts, and passing it to us. It was pretty funny to watch, but we were helpless without it.

Once the ladder was installed, and the PAH locked into place, Van went down to unlock the B-plug. Thankfully, the heat from below melted a lot of the snow off, but Van was filling bags we lowered with snow to clear the rest out.

All the while he was doing this, the rest of the teams were trying to dig out the site. I remember it was around noon of the second day when the DCM showed up. He was flabbergasted to see how much snow remained and ordered a

snow blower to be sent out immediately. CE gave him what he requested, a 30 inch wide snow blower; not a Bombardier that he really wanted. This upset him so much; he drove to F-01 with the PMT and commandeered a Bombardier without much argument. I'm told during his visit there, he had the cook replaced and the FM lost his job.

Van and I proceeded below grade to start our work, which required the pre-shutdown optics and overwrite of the guidance set. When we were done, we called Job, but they requested we lock our tapes in launch equipment room 1 and continue shoveling as we were not coming home.

Van never got angry, and I was impetuous and didn't like the decision at all, but what could I do. I was an A1C with little clout. We returned topside to help clear the snow. About that time, the DCM shows up with the Bombardier, but nobody was certified to run it. A PMT guy drove it out from the LCF, since there was no trailer available, but nobody would take responsibility to operate it with the DCM on site. He figured he was the problem and left for the base, giving his blessing to the rest of us. PMT got it going and started really clearing out the site. I remember seeing the snow being thrown skyward 30 feet over our heads. In no time, the chopper pad area was clear and he was working toward the PAH. In less than two hours, the entire topside was clear of snow, with the exception of behind the launcher closure. Because the snow was so deep in the ditches, the driver felt it would be unsafe to attempt to drive it down behind the door, so the rest of us started shoveling out the door so MMT (when they arrived) would be able to open it. Job called and sent us back to the LCF in remain overnight (RON) status, but this time we chose O-01. When we arrived there, they were in a better mood than F-01, but still not overly friendly. Van and I got a room with our guard, and were able to clean up and shower. We ordered dinner, but once again we were denied food. This time, Van called Job immediately and they passed him on to the DCM. The Colonel spoke with the cook, who decided it was in his best

LF Entry



interest to get us dinner. Following dinner, we hit the sack as our arms and legs really ached. The next morning, the cook was much nicer and prepared a real meal, rather than foil packs.

Following breakfast, we once again headed back to F-11. We took our time that morning, as there was nothing we could do until MMT finished their work. Job wanted us on site to continue digging out the launcher closure door. When we arrived, we realized we were alone, as all the other teams had been sent home. It was up to Van and I, and the soon to arrive MMT team, to do the rest of the shoveling. We finished around 1000 and the MMT started their work. Van and I rested in the truck until they were done around 1430. We went right to work doing the startup and MMT was very helpful and volunteered to close up for us, since they knew we had been out there for three straight days. After three long days, Job Control granted us the right to come home.

For our trip home, we decided to take the short cut down the F-06 road as the snow was really howling out on US 212 and black ice was everywhere. Somewhere in Golf flight, we came upon a car in the ditch. We checked the car out and there was no one there, we found them down the road a bit, hiking to Union Center. We picked them up (against Air Force policy) and drove them into town. The phone booth there was inoperative, and the store phone didn't work either. There was no place to safely drop them off, so we drove them all the way to Rapid City before returning to base.

Since CTT works a day on, and day off schedule and nobody gets credit for RONing, we had worked three shifts and lost one day off. We dropped the guard off, washed the truck and turned our equipment in. Our Officer in Charge, Capt Kent Huebner was waiting for us upon our return. Apparently, someone turned us in for driving our truck in Rapid City and dropping off the civilians, which was a really big taboo, since we were carrying codes. Captain Huebner, an ex ops commander had no real understanding for missile maintenance and never understood how we worked. He chewed us out and promised to make us pay for embarrassing him before the commander. True to his word; we were called in the next morning (on our day off) where we each received a Letter of Counseling for our actions. It was the final straw after busting our butt for three long days, to be called in and chastised for doing our job and helping someone out. Just another day in missile maintenance!

Have you registered yet for our next National Meeting?

**Malmstrom//Great Falls, Montana
10-13 October 2012**



Atlas loading into a C-133

The Last One Out - By: Adolphus Ward and provided by Jim Widlar, AAFM Mber L0074, Hygiene, CO

I was a member of the 389th Missile Maintenance Squadron at F. E. Warren AFB, Cheyenne, WY, working as an APCHE Team Chief. In August of 1964 I was assigned the duty of escorting, as tank watch, the last Atlas D from Warren to Norton AFB, CA. I quickly accepted the duty. My special orders stated that I was to accompany the missile via a C-133 aircraft to San Bernardino and return by any available military transportation.

I arrived at Cheyenne's airport that day ready for my flight and checked the missile for proper tie downs, proper missile tank pressures and sufficient nitrogen storage supply. Everything checked out and I was excited to head to California. The aircraft crew chief told me quite matter of factly that they were having some trouble with the number three engine and that they may have to shut the engine down after takeoff if the problem persisted. I didn't have any problems with flying on three engines and the missile certainly wasn't going to present a weight problem. Shortly thereafter we were airborne. My seat was on the right side of the aircraft, just aft of the pilots' compartment. The crew chief came down to tell me that they were going to shut number three down and that we were heading for a landing at Salt Lake. I acknowledged the problem and the change in flight plans.

That inoperative number three engine was in my line of sight which made me a little uneasy, but there were no major concerns. After some time, the crew chief came and told me that a decision had been made to go in at Nellis AFB, NV. I indicated that I would love to go to Las Vegas. Not long after being told we were heading to Nellis, I started

envisioning my winnings in Las Vegas. My thoughts were interrupted when the missile's low differential pressure warning horn sounded. I had to walk in a side step fashion to the rear of the aircraft to increase the differential tank pressure. Back at my seat I was told that they would have to dump fuel prior to landing. Then the fuel overboard valve iced open, and the low differential warning horn sounded again. I went back to the panel again, and since the pilot was concerned that this horn was interfering with some of the warnings sounds in the cockpit, this time I deactivated the horn. When I returned to my seat the crew wanted to know the ramifications of if we had to go in short of a runway. I tried to impress upon them that we were flying a metal balloon filled with nitrogen. Fortunately, the crew got the fuel valve closed and we safely continued on to Nellis and landed without further problems.

The following day I was told that a truck/tractor, escort vehicles and a couple of tillermen would be sent to transport the missile overland. I accompanied the Atlas on its land trip to Norton, with no problems.

With one half of my mission completed I only had to find an aircraft and fly back to Cheyenne. After several days of not finding flights going anywhere near Warren, I took a commercial flight home. All in all, I was gone nine days, and my First Sergeant had some challenging questions for me until I produced my travel orders stating I was to catch a hop back to Warren.

A Follow-up on EWO Training – *by Col (Ret) Hugh Hinds. AAFM Mbr No A0683, Great Falls, VA. Hugh knows what he speaks about – he taught EWO at Whiteman*

The article you wrote for the September newsletter is absolutely, positively marvelous and worthy of a special AAFM award for literary excellence. Thank you for dusting off all those memories of a military lifestyle that is gone forever. Thank you again for preserving them. I'd like to add some notes to the materials on page 8 about EWO training and the SIOP.

I was the Senior EWO Instructor at Whiteman AFB (351 SMW) at the time, and you were right-on that the EWO complexity started with SIOP Rev C. It was at a time when SAC/JSTPS promulgated a SIOP Revision every six months, and the poor maintenance troops on the Northern tier had to endure the winter weather for a SIOP Revision at least once a year, and there was no Command Data Buffer to allow retargeting remotely from the LCCs. Each Minuteman sortie had to be penetrated, and was taken off alert status while retargeting for the next revision's assignments took place. In operations, as you said, the ops crews were faced, for the first time, with launch procedures according to a Control Time Launch (CTL) strategy that was far beyond the old "salvo" or "ripple" procedures that were being replaced. The CTL

procedures were designed to counter a variety of threats that US intelligence analyses had identified, and which were highly classified. (These factors are not directly germane to the effects on the ops and maintenance troops, and will not be discussed here).

In ops, the lack of a remote retargeting capability was the most onerous factor, adding to the complexity of the EWO procedures for "Rev C," and affected the ops crews in EWO training and testing back at their EWO classrooms on base. The critical factor that the ops crews and maintenance teams had to contend with derived from the problem that once retargeting began in a missile squadron, and until the effective date of the next revision, launch crews could not use PLC-As. If SIOP execution had been directed during the time when SIOP retargeting took place by the maintenance teams, the ops crew could not use PLC-As since some of the missiles would respond to the Rev C assignments and other missiles would react to the old, previous PLC-As. Consequently, PLC-Bs had to be used, and a PLC-B is addressed and acted on by each individual missile for its target and timer setting. And if these factors weren't exacerbating enough, the ops crews were required to receive training on the new Rev C EWO procedures as well as the interim procedures that were in effect only during the period of the retargeting in preparation for the new SIOP. In other words, the ops crews thus had to have classroom instruction of both "Interim" procedures that were in effect for a month (using PLC-Bs) and the Rev C procedures that would be in effect for six months or until the next Rev D "Interim" procedures and Rev D came along.

As a result of all these factors, what started with Rev C actually peaked in complexity in August of 1968 that we called "Bloody August." It really was "Bloody Awful!"

To shorten the story a little, and to tell about its happy ending, Jim Burba was at SAC Hq and I was at Whiteman and we were discussing how complicated the EWO procedures had become. I suggested that since Minuteman had 100 PLC-As available for use and we were using only about 40 of them for each SIOP Revision, maybe we could "split" them. The "split" would allot half of the PLC-As to REV D and the other half to Rev E. and so forth. Burba sold my idea to SAC and the "Interim" PLC-B procedures and EWO training went away. And then, along came Command Data Buffer and, as they say, the rest is history!

By the way, SIOP Rev C was formally SIOP 4, Revision C and the last SIOP 4 was Revision P because the next in line would have been 4Q.

Are your dues current?

Check the dues list with the link on "The Warble Tone" or contact AAFM by phone, mail or email

Moving? - make sure you notify AAFM

A Word from the Association

Our Meeting in Great Falls in October - we are less than a year from our next National Meeting - and registrations are coming in daily. We will have a list of those who have registered to date on our web page and update it as registrations come in. The commander of 20 AF, Maj Gen Don Alston, is planning a commanders conference in conjunction with our meeting, so we expect a lot of interface with the folks who operate, maintain and support our current ICBM force. You can register on-line or by mail. The inside back cover is a registration form for the meeting.

STRATCOM Visit - In mid-December your executive director and AAFM president Lance Lord visited with STRATCOM commander General Bob Kehler at Offutt. AAFM board member Patricia Fornes set up the meeting and joined us in discussions with Gen Kehler. He gave us a rundown on the current status and the outlook for the ICBM force, an area that has more questions than answers right now due to the New Start treaty requirements and the budget issues facing our government. The evening before our meeting, the three of us from AAFM had an informal gathering at the Offutt club for current AAFM members and other missileers. We picked up several new members, and gave all attendees an update on the association and our activities.

Museum Visits - your executive director visited two museums in December. While in California, I stopped by the March Field Air Museum, my first visit in several years. While the number of missile displays there is small, consisting of a Minuteman missile out front and a part of the Cold War display inside, they are making progress and working to better represent the history of the ICBM force, since 15 AF was a major player as the primary numbered air force for missiles most of the life of SAC. I also had a very good visit with the new leadership at the Strategic Air and Space Museum outside Omaha. They are planning to place more emphasis on the "Strategic" part of our heritage, and we discussed ways to improve the missile part of that history.

The AAFM Web Page - we recently changed the format for our web page, adding a new area, "The Warble Tone," which features late news and other information relevant to our members. You can link to a list showing dues expiration dates, registered attendees for our next National Meeting and other data. We won't post a link to our member directory since that would make all the address and personal information available to anyone. We keep that open only to members of AAFM. Future e-mail updates will include less information in the body of the message but will link you to the Warble Tone. Just try to ignore the urge to strap in, find the grease pencil and copy the PAS message when the tone sounds.

Letters to AAFM

Address your letters to AAFM, 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.

The Stump and Other Things - I recently joined AAFM. What made me join was a story I read in an earlier newsletter about "the Whiteman Stump." I'd almost forgotten about that piece of Whiteman history. The six names with the picture of "The Whiteman Stump" were guys I had worked with in Missile Maintenance Team (MMT) shop. I was stationed at Whiteman AFB, MO with the 351st Strategic Missile Wing from April 1974 to June 1976 as a Minuteman Missile Technician (44350G). I was an assistant team chief and topside supervisor. Our team also had, what I believe was the first female missile technician. She went on to be on the Whiteman team that won the 1977 Blanchard trophy. My tour was cut short when, while I was on my way to base and my vehicle had a mechanical failure and went off the road and hit a tree. I lost the use of my legs and am a T3,T4 paraplegic. Not to worry though, remember when one door closes another will open, so after a few years recovery, in 1983, I went to work for NASA as a journeyman electronics technician and over the past 28 years have worked on over 40 space projects. I know lots of things change but I'll never forget the feeling I got driving that RV van, making the turn onto Rt. 50 and knowing ahead was a busy night, but it was all for the safety of my country. *SRA (Ret) Robert E. Lussier, AAFM Mbr No L543, Columbia, MO*

Launch Credit - A recent AF news release started with "Minuteman flies from Vandenberg: airmen with the 30th Space Wing at Vandenberg AFB successfully launched an unarmed Minuteman III ICBM..." and continued "Airmen from the 91st Missile Wing at Minot AFB, and 625th Strategic Operations Squadron at Offutt AFB supported the test." Since the MM III came from the 91 MW, and was probably replaced by a 91 MW maintenance team, and the key turn was by a 91 MW crew, with the ALC providing the second key turn, why is the 30 SW taking the credit and assigning support roles to the 91 MW and the 625 SOS? For all practical purposes, Vandenberg participation is checking out the destruct system and Telemetry, monitoring range status and giving the final okay to launch. From a former 341 SMW crew member that launched two MMIs (1st ripple launch from Vandenberg) *Col (Ret) Allan J. MacLaren, AAFM Mbr A0134, Lancaster, CA*

You may have noted in the September issue that a similar news release about a MMIII launch failure credited all the effort to Vandenberg, too. All of us who have been involved with a wing Glory Trip task force know that it is a big effort for the home wing.

Collector's Book - My wife and I volunteer at the Charles M. Schulz museum. (creator of "Peanuts"). A few months ago, they did an exhibition on "Peanuts goes to the Moon." There was a lot of material on the the space program and Schulz's contributions. One of the high prizes at NASA is being awarded the Silver Beagle award. The reason I am contacting you, is to see if anyone would be interested in a copy of a few remaining books that were left over from the exhibit. We did have astronauts at the museum when the exhibit opened. The book that I am talking about (of which there are only a few copies left) is: "We Have Capture, Tom Stafford and the Space Race" written by Thomas P. Stafford with Michael Cassutt. These are autographed and originally went for \$100.00. The museum has reduced the price to \$15.95. Let me know, since about one copy a week is sold. *Robert R. Safreno, AAFM Mbr No A1260, Rohnertpark, CA, shadowbob1@juno.com*

Not sure if any copies will be left by the time this gets out, but if you are interested, contact him.

Viewing a Launch from Afar - I was a missileer from 1971 to 1974 with the 44 SMW at Ellsworth AFB, SD. I was trained at Chantute on Minuteman III's, but was "re-trained" on Minuteman I when I arrived at Ellsworth. After working in the field for two years, I was selected to be a team training member. After a year or so of being in team training, I was selected to be a Maintenance Team Chief. I was at the time a Sgt with a line number for SSgt. When the team had our Certification Evaluation from the 3901 SMES, we scored really well with several Highly Qualified ratings. Just before I left in 1974, we finally upgraded to MM IIs. I never did work on an actual MM III. One of the best highlights of being a missileer was going to Vandenberg for a "foot-shot". Our team was selected to complete the entire process from missile removal at Ellsworth to re-assembly at Vandenberg. On the night of the launch, I went to my hometown (Arvin, about three hours east of Vandenberg) to drive up in the foothills to watch. From my vantage point it was a beautiful launch. When I returned to Ellsworth and met up with the team, they said the fog was so thick at Vandenberg that all they could do was "listen" to the launch. I was the only one to actually see it! After returning to the USAF in 1975, as a Security Policeman, I was assigned back to Ellsworth as a Missile Security team member! How ironic - first I worked on them, then I guarded them!! *MSgt (Ret) Larry Vietti, AAFM Mbr A2740, Lancaster, CA*

Warble Tone - I was so happy to hear the "real" warble tone on the new feature on the AAFM website. I immediately notified the guys on the Yahoo missile discussion group that

I have been a member of for the past fifteen years that they could go to your site to hear the "real" warble tone. Most of us had been told forty-plus years ago that the warble tone was classified. Back in 1964-68, when I was a crew member at Whiteman, the EWO Training officers rattled a metal spoon inside a ceramic coffee cup to simulate the SAC warble tone so that their practice EWO training message tapes would be unclassified. Obviously, someone decided later that the warble tone was unclassified. If there is a story there, would you tell us? One of the guys on the Yahoo discussion group leads tours through the Ellsworth National Historic Site during the summer. Anyway, he said that he was able to upload the tone into his cell phone as a ring-tone. At the conclusion of his underground tour he would hold his cell phone near the original PAS speakers and play the tone. He said that even the most conversational tourists and bored children shut up and listened for something to happen after the warble tone sounded. *Lt Col (Ret) Bill Huey, AAFM Mbr A0376, Newnan, GA*

AAFM has had several sound files of the warble tone for years – all from members. We'll see if anyone responds to the question of classification.

NWRM Article – Wow – the NWRM article reached all the way to the National Park Service in South Dakota! Butch is an amazing Park Ranger and does a lot to educate visitors about the history of the Nuclear Enterprise. *Lt Col Jodavid Duvall, 90 LRS/CC*

Butch Davis, the head ranger at the Minuteman Missile Historic Site in South Dakota had responded to the authors directly – our newsletter does get read.

Math and Guidance - I am doing some research into the role of fractal/chaos mathematics in missile guidance systems. In addition to the science, I'm looking for interesting/exciting stories about success in missile guidance in which fractal mathematics played a role, even if it was built into the basics of the system. Anything involving highly difficult and accurate targeting in battle in recent wars would be great. I plan to write this up for a lay audience, so obviously nothing too sensitive and nothing too technical would be appreciated. *Peter Schwartz, 1408 North Fillmore Street Suite 10, Arlington, VA 22201, 703-812-9004, Peter.Schwartz@comcast.net*

Your editor was once one of the SAC accuracy experts – and has no recollection of fractals or chaos theory ever being discussed. Anyone else have any comments?

New Missile Book, and Blue Fly - I am working with Arcadia Publishing for an "Images of America" pictorial history on Holloman AFB. I've got a decent selection of

photos of early Matador and Mace missiles, along with Snark and a few others. The book should be out next May. On something seemingly unrelated - UFO conspiracy theorists often quote names of Air Force programs that they believe have actually obtained extraterrestrial hardware. I am not a UFO conspiracy theorist - however, I have found validity in the project names mentioned at least. The one I am curious about is Blue Fly. I have documentation from the AF Historical Research Agency that states Blue Fly was a part of the Air Force Missile Development Center (Holloman AFB). Its mission during the Cuban Missile Crisis was to obtain downed Soviet hardware and bring it back for technical analysis. Three things that are key - it was at Holloman, it was part of Missile Development Center, and it was activated during the Cuban Missile Crisis. *Joe Page II, AAFM Mbr L368, Las Cruces, NM*

Joe Page sent this from a formerly Secret AFMDC document from 1963. Project Blue Fly originated in 1961 as part of the Foreign Technology Division project activities to "exploit" when possible enemy materials. There were three projects, Blue Fly, to exploit Soviet hardware when it comes more or less permanently into US or allied hands, Round Robin, to exploit Soviet hardware when it comes temporarily into US hands (e.g. Russian aircraft landing at international or US airfields) and Moon Dust, to exploit big booster or missile and satellite equipment which fell from the air hence the name applied (e.g. the piece of Soviet equipment which fell into Wisconsin). There were two teams at Holloman ready to deploy during the Cuban Missile Crisis. Another input we got was a lot less specific and the dates were earlier, and the author related it to Project Blue Book, the AF UFO investigation.

Early Vandenberg - I recently picked up a copy of the September 2011 Air Force Missileers. I arrived at Vandenberg AFB in February 1960, compliments of SAC and was assigned to the 576 SMS Ground Guidance Station (Mod-II) for the 576-A (SM-65-1) Atlas D gantry mounted ICBM. This facility went EWO status in October 1959. I have lots of early Atlas D photos, news press releases, etc. I also have video of the pad construction and launch of the first operational Atlas-D at Vandenberg in September 1959, which was the certification flight for EWO status. I well remember the night that Gary Powers was shot down over Russia, yes we were on EWO status and I happened to be on alert duty that night. A very trying experience. We used to hold Atlas-D reunions here on the west coast every five years, but after 35 years, 1994, the attendance was too small to continue. *Jim Owen, Vandenberg AFB, CA*

Radiation Badge - I am looking for anyone who may have the old DT-60 radiation badge. I need one to complete my collection. *John Pickett, AAFB Mbr No A1370, San Antonio, TX, mp1750@satx.rr.com*

Groobers - I'm continually amazed at the resilience of the music we created back in the mid 70s - that doesn't sound as far back as saying over 35 years ago. Had it not been for Maj Gen Chris Adams wanting Gen Dougherty to hear us at a FE Warren Dining Out and Gen Dougherty's subsequent encouragement and support, it never would have happened to the degree it did. To be honest, it's pretty humbling to have played such a unique role in ICBM history. Lt Col (Ret) *Rollie Stoneman, AAFM Mbr No L556, Colorado Springs, CO*

One of our members, Jim Hogan, tracked down two of the Groobers - Rollie and Malcolm McCown. We honored both of them with lifetime memberships - the Groobers are an important part of our missile history - we still get scores of requests for copies of the music CDs.

Cold War Sites - My project involves abandoned facilities in the United States from the Cold War era. I recently toured the Titan Missile Museum and the North and South Dakota sites. For 2012, I want to focus on the abandoned BOMARC facility near McGuire AFB and abandoned Titan I and Atlas missile facilities as well as the adaptive reuse of such facilities. My goal is to complete onsite visits, take photographs, conduct historical research and publish the material on the internet and/or in book form. I have a website which is a work in progress but it gives you an idea of what I'm doing at www.coldwartourist.com *Mark Signorelli, msignorelli@chubb.com*

Missile Comp - Really enjoyed your lead article in the last newsletter about the Global Strike Challenge. I was part of a Whiteman AFB team that launched a Minuteman II missile in 1968. The picture of the crews and some of the maintenance team members, along with the squadron commander has me in the front row on the left. *Richard Beal, AAFM Mbr No A2601, Santa Fe, NM*



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Atlas and Titan DVD set - \$10	GLCM DVD set - \$10	All eight DVD sets - \$50

Bill McKee's Cartoon Book, "Missile Business" - \$5 **Greg Ogletree's "History of the Missile Badge" - \$5**
1998 AAFM Book, "Air Force Missileers" - \$30 **SAC Memorial DVD - Dedication at Dayton - \$10**

Randy Mayse signed print for Malmstrom 25th Anniversary - TE on site - \$25
Signed/numbered Art Project Print "Countdown - 5,4,3,2,1" - \$20 **The Groobers Missile Music CD - \$10**

Bob Wyckoff's Collection of Poems - printed on photo paper for framing with background graphics - \$10
 Olympiad, The Unsung, Elegy to a Silo Queen, Birthright, Excellence, Liftoff, Cold War, Victors in the Cold War, Missile Maintainers plus AAFM's "We are Missileers" For the poem Missileer - choose graphics preference - one, more or all
 Original Missile Badge - Basic Senior Master Missile Badge with Ops designator Basic Senior Master
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Order and Pay on-line at the Donations/Store area on our web page
Special Collectibles also shown there

Missile Models - Minuteman I, II and III models - available in white or real colors
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AAFM Tenth National Meeting, Great Falls, MT, 10-14 October 2012

Commemorating the 50th anniversary of the Cuban Missile Crisis and 50 years of Minuteman alert
Register On-Line, and use a Credit Card, at <http://afmissileers.org> on the Reunions and Meetings Page

Registration - You must register using the form below no later than 9 September 2012. SORRY - NO WALK-INS

Reservations - Make your hotel reservations directly with the Best Western Heritage Inn ensuring you say you are with AAFM. Rate is \$77 single/\$86 double, including breakfast for each morning. You must make reservations before 5 September 2012. Call 406-761-1900 or 800-548-8256. A limited number of rooms available three days before or after our dates for the same rate.

Not Staying at the Hotel? - If you are staying in a motor home, other hotel or with friends, or live in the area, you can attend any or all of the events. Complete the reservation form for the events you would like to attend. Note that you can attend the breakfasts for \$8 - see the note on the registration form.

Hospitality Suite - Open every day when no other activities are scheduled, with snacks and refreshments. Registration fee covers suite operation and mementos.

Attire - Casual dress for all events. Banquet business casual (open collar shirts, coats optional, no jeans)

Refunds - Registration fees can only be refunded if you cancel by 5 September 2012. Inform us immediately if you have to cancel.

Special Needs - Let us know of any special diet needs, handicapped access, etc.

Schedule of Events -

Wednesday, 10 October - 1300 - Registration, Hospitality Suite open

1800 - Welcome Reception - Stand up buffet and pay as you go bar, \$23 per person.

Thursday, 11 October 0700 - Breakfast (included in room rate)

0830 - Depart hotel for tour of Malmstrom AFB - lunch and special program at the base \$30 for bus and lunch.

1800 - Dinner at the Great Falls Airport - Italian buffet - \$30 per person including bus

Friday, 12 October 0700 - Breakfast (included in room rate)

Golf Tourney (location TBD) - depart from hotel at 0800 - \$90 per player for golf, cart, range balls, box lunch and prizes

Tour of Lewis and Clark Interpretive Center and Charles Russell Museum, lunch. Depart for tour at 0830, return to hotel at 1530, \$42 per person.

1630 - Dinner at the hotel - Western Buffet - \$26 per person

Saturday, 13 October 0700 - Breakfast (included in room rate)

0900 - General Membership Meeting 1100 - Board of Directors meeting - open to all. Lunch on your own.

1200 - Optional Town Trolley Tour - \$20 per person

1200 - Buses depart for Alpha-06 for Commemorative Ceremony - \$10 per person for bus

1800 - AAFM Banquet with featured speaker and special program. - \$34 per person, choice of prime rib or chicken

Sunday, 14 October 0700 - Breakfast (included in room rate), Depart hotel

Registration Form - 2012 National Meeting

Mail with check to AAFM, PO Box 5693, Breckenridge, CO 80424

Name _____	Number	Amount
Address _____		
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Phone _____	Number Attending _____	
Spouse/Guest Name _____		
Arrive _____	Depart _____	
Special Requirements _____		
(Enter names as preferred on name tags)		
Saturday Banquet choices - Prime Rib _____	Chicken _____	
Breakfast for non-hotel attendees - \$8 each - number each day		
Thur ___	Fri ___	Sat ___
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Reunions and Meetings

341 SMW/MW Maintenance Reunion, 10-12 August 2012, Great Falls, MT, contact Sheryl Yocom at lonnie267@min.midco.net

390th SMW Reunion, 26-30 September 2012, Tucson, AZ, contact John/Susan Lasher at redsnooty@comcast.net or 520-886-7157 or 520-886-3430

485 TMW (Florennes) Reunions, 2012 in Alabama, 2013 reunion in Florida and 2014 reunion (25th anniversary of base closure) in Belgium - details to follow

4 ACCS Reunion, 15-17 June 2012, Rapid City, SD, go to the 4 ACCS web site at www.4accs.wordpress.com or contact Mary Hillman, E-mail mdhillman@fedteldirect.net

579 SMS 50th Anniversary Reunion, 3-6 May 2012, Roswell, NM, contact Terry Doyle, 580-228-2409, terry.doyle@juno.com

SAC Reunion, 31 May-3 June 2012, Omaha - contact AAFM for details or check "The Warble Tone" web page.

SAC Airborne Command Control Association, 22-26 August 2012, Washington, DC, contact William Curtis, 804-740-2290, wcurtis135@aol.com

Association of Air Force Missileers 2012 National Meeting will be in Great Falls, Montana in 10-14 October 2012. Registration inside this issue or go to <http://afmissileers.org> to register on-line.

Get your meeting notices to AAFM as early as you can for posting - email to aafm@afmissileers.org

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