

Air Force Missileers

The Quarterly Newsletter of the Association of Air Force Missileers

Volume 25, Number 1

"Advocates for Missileers"

March 2017

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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

Membership Application

Complete and mail to:

AAFM PO Box 5693

Breckenridge, CO 80424

or log on to www.afmissileers.org

Membership Categories

Annual (\$20) _____ Active Duty/Student (\$5) _____
 Three Years (\$50) _____ Active Duty/Student (\$14) _____
 Lifetime (\$300) _____ (Payable in up to 12 installments)
 Awarded Missile Badge - Yes _____ No _____

Member Number _____

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"/>	<input type="checkbox"/>

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

Missile Systems and Units Navaho _____ Snark _____ 702SMW _____ Jupiter _____ Italy _____ Turkey _____	Thor _____ Units _____ Bomarc _____ Units _____	Matador _____ Units _____ Mace _____ Units _____	Blue Scout _____ Unit _____ Atlas D _____ E _____ F _____ 548 _____ 549 _____ 550 _____ 551 _____ 556 _____ 567 _____ 576 _____ 577 _____ 578 _____ 579 _____ 706/389SMW _____ ALCS _____ 2ACCS _____ 4ACCS _____	Titan I _____ 568 _____ 569 _____ 850 _____ 851 _____ 703/451SMW _____ Titan II _____ 308 _____ 381 _____ 390 _____ Minuteman I _____ II/Mod _____ III _____ Peacekeeper _____ 44 _____ 90 _____ 91/455 _____ 321 _____ 341 _____ 351 _____ 4062 (MM Train) _____ Small ICBM _____	GLCM _____ JCMPO _____ 38 _____ 303 _____ 485 _____ 486 _____ 487 _____ 501 _____ Dugway _____ 868TMTS/G _____
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 _____			Airlaunch _____ AIM _____ AIR _____ AGM _____ SRAM _____ ALCM _____ ACM _____ AAMRAM _____ RPV/Drone _____ Hounddog _____ Quail _____ Skybolt _____ Other Airlaunch Systems _____ Airlaunch 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 _____ AFGSC _____ 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?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 _____ Vandenberg Units 1MSlDiv _____ 1STRAD _____ 392 _____ 394 _____ 395 _____ 576 _____ 4315 _____ 3901 _____ 51MMS _____ Other VAFB Units _____
Other 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 -Sqn _____ Group _____ Wing _____ Other _____

Other Information _____

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An Early Mace Class Graduation at Orlando



Last Reunion of General Schriever's Missileers

How Many Missileers Are There? – by Col (Ret) Charlie Simpson, AAFM Executive Director, and Maj (Ret) Greg Ogletree, AAFM Mbr No L0049, Lompoc, CA.

From the time we first began discussing the formation of an association for Air Force Missileers, there has been one big, unanswered question, “How many people have been or now are Air Force Missileers?” A number of us have discussed this question over the years, and we realized how complex the question is.

First, we need to set a couple of ground rules for terms and nomenclature. We use the term “airman” in the way it was used before it became the designation for everybody in the Air Force (now Airman, capitalized), and it was sometimes used two different ways. Many documents list the number of people in a unit as “10 officers and 200 airmen,” meaning there were 10 officers and 200 enlisted members. Other times, a document will say, “10 officers, 57 noncommissioned officers (NCO) and 153 airmen,” meaning the unit had 10 officers, 57 NCOs and 153 junior enlisted members. We also give the full designation for each base only once – we will use Patrick AFB, FL, the first time, then just Patrick.

We end each system section with an estimate of how many Missileers that system added to the total number of Air Force Missileers. These estimates take into account the fact that many of us served in more than one system, others served a single tour and that many served at more than one base in a particular system during their careers – therefore the estimates are truly our best estimates based on data, experience and some guesses. We had to make some pretty significant assumptions on turnover, career continuation and other aspects of how Missileers progressed in their careers.

When we founded AAFM in 1993, we defined a Missileer along the standard lines that the Air Force had used for many years, basically saying that anyone who had earned an Air Force Missile Badge was, in fact, a Missileer. But we also realized that a lot of people served as Missileers in the years before the badge, originally called the Guided Missile Insignia, was authorized in 1958. We have some AAFM members who began working in Air Force missile programs as World War II ended. One, Maj (Ret) Phillip Mack, who passed away a few years ago, was involved with testing captured German V-1 missiles in the Utah desert way back then, and there are others. Others served in a wide range of test programs in the late 1940s and early 1950s, and many served in Europe operating, maintaining and supporting what was basically the first operational Air Force tactical missile system, the Matador, well before the new badge was introduced. These officers and enlisted operators, maintainers and others are as much a Missileer as any who serve today.

Of course, just clarifying which people are Missileers is only the first step in determining how many of us there were. A lot of people have served in missile-related duties over the last 70 plus years. In our research for this article, with the help of AAFM members Greg Ogletree, Col (Ret) Denny Abbey, Brig Gen (Ret) Ted Rinebarger, CMSgt (Ret) Joe Andrew, Maj (Ret) Phil Moore and Col (Ret) Tom DuBois, we identified some good sources to give us some idea of the total size of the Missileer population, but there are many variables that require a number of assumptions to aid us in arriving at a meaningful estimate of that population. Denny, Ted, Tom and Joe served as missile personnel experts at either SAC or the Air Force Personnel Center during the peak of the ICBM manning days.



Bitburg Tactical Missileers

One of the first places we looked was at the output of the various training organizations – and we found that was a very complex place to look. For example, we trained Jupiter people at Huntsville, Matador and Mace training was primarily at Orlando AFB, FL, and Lowry AFB, CO, but during the early days of the Matador, there was training at other places. Almost every Atlas and Titan operator and maintainer went to Sheppard AFB, TX, for missile training, and most Minuteman folks went to Chanute AFB, IL. Ground Launched Cruise Missile (GLCM) training was conducted at Davis-Monthan AFB, AZ, and small missile training was at Lowry, Chanute and Sheppard, but some was at other locations. In recent years, all training for Minuteman, as well as training for air launched systems like air launched cruise missiles, has been at Vandenberg AFB, CA. Many of these locations have been out of business for many years, so records of student output have not always been easy to find. Complicate that with two other factors, the first being that, especially in the early days of most new systems, some Missileers were trained either at contractor facilities or on the base they were assigned to. Then add the additional factor – many of us served in more than one system, so we were trained at several places. For example, your executive director went through Titan I training at Sheppard and Vandenberg, Minuteman training at Chanute and Vandenberg and GLCM training at Davis-Monthan. So the student output numbers don't truly reflect the real number of total Missileers, because many of us would be counted two, three or more times.

Another source that helped determine the size of the Missileer population was to look at the number of units and the manning in each. We peaked with the early Atlas and Titan I force in about mid-1963, but by then we had also begun building up Minuteman and Titan II wings. We still had Mace, and Thor, Jupiter and BOMARC were all up and running. We were shipping Atlas and Titan I vets to the Minuteman and Titan II wings, and we were still adding new operators and maintainers to the early units to keep them fully manned. There was probably never a time when the number was static, since there were always people in the

pipeline to each system, and many of those had come from some other missile system. We were also building the staffs at major commands, numbered air forces, and in units like the 4315th Combat Crew Training Squadron (CCTS) and the 3901st Strategic Missile Evaluation Squadron (SMES). We also had a lot of Missileers at places like the Ballistic Missile Organization (BMO), in test agencies at Vandenberg, Patrick and other places, and more. Denny Abbey reminded us that we had so many Minuteman people at Vandenberg that some called it "Wing 7," and Boeing's used it in technical orders. Incidentally, BMO was only one of several names for the ICBM organization in southern California over the years.

All during this time frame, we were also growing organizations involved with Hound Dog and Quail, as well as the smaller missiles primarily in Air Defense Command, and seeing more and more use in Southeast Asia. So there was another significant group of Missileers spread around the world not part of our Intercontinental Ballistic Missile programs – they wore missile badges and they were called Missileers. Then we added Short Range Attack Missiles (SRAM), Air Launched Cruise Missiles (ALCM), Advanced Cruise Missiles (ACM) and others over the years.

By about 1969, the SAC and TAC and United States Air Forces in Europe (USAFE) part of the equation, the strategic and tactical missile force, had settled down. We had six Minuteman wings and three Titan II wings, and have a pretty good idea of the size of the operations and maintenance population, both in the units and scattered around the Air Force in staff positions. Mace was gone, BOMARC was going, and all the early liquid systems had been phased out, except for a small number of folks serving in Thor in an air defense and space role. The most significant personnel change in the 1970s and 1980s was the addition to women to the missile force, first as maintainers and later as crewmembers. We added GLCM to the mix in the early 1980s, with six units scheduled to come on line in 1983 and later. We were also building up ALCM and ACM in the bomb wings, so that population changed some from the early Hound Dog days. Changes like Peacekeeper had small impacts, since the 50 Peacekeeper missiles replaced existing Minuteman, with some added Missileers being those involved with unique Peacekeeper maintenance tasks. By 1991, GLCM and Titan II were gone, and we were on the verge of reducing the Minuteman force. After 1998, the size of the force has been fairly stable, with three wings that eventually became a 450 missile force. There were manning adjustments and we closed two squadrons, the Peacekeeper unit at F.E. Warren AFB, WY, and the 564th Missile Squadron (MS) at Malmstrom AFB, MT, with some impact there on overall population.

So we can make a pretty good estimate of the overall Missileer population for a specific point in time by looking at the number of operational units and the staff and support organizations that existed at the same time. But, once again, there are a couple of complicating factors. Let's say



A BOMARC Crew

we assume the Missileer population in 1975 was X and the population in 1980 was Y – and both numbers are relatively close. How many of those Missileers in the population in 1975 were part of the 1980 population? How many one-term officers and airmen did we gain or lose during those five years? How many people came in through programs like rated supplement, career broadening or “to gain operational experience” as senior leaders? We had people like Col (Ret) Pat Henry, one of our founding board members, who served in Titan I after first spending time on the back seat of a B-47, then went back to flying as a B-52 crew member, but then reentered the missile force in the early 1970s as a Minuteman crew member, staff officer, squadron commander, group commander, vice wing commander and finally missile wing commander. We had others, like my first operations officer when I commanded the 68 SMS, who had been a C-130 navigator slot and returned to flying after four years of missile duty.

So, the more we look at the situation, the more complex it seems to become. Let us look at some specific periods to see what the Missileer population was at several snapshots in time, from the early Matador days to the present. That will give us some idea of the changes in the “current” population, and we can make some assumptions about all those factors mentioned above to arrive at an overall estimate – but it won’t be easy.

The Early Missileers – before Matador came along, there were a number of officers – and enlisted members working on a wide variety of missile test programs in research and development at various locations. The number of people involved is a great unknown, but for purposes of this project, we are going to assume that there must have been at least 500 people involved in research, development, testing and other aspects of missile development during the years following the end of World War II up to the deployment of Matador in the 1950s.

Matador and Mace – AAFM Member former SSgt

George Mindling and Robert Bolton put together a great history of tactical missiles that includes many facts about manning and training, as well as a great history that addresses the number of squadrons that were active in Europe and the Pacific. There was a significant organization at Orlando, the 4504th Tactical Missile Wing (Training) (TMW (T)), and there were activities at a number of other locations, including Holloman AFB, NM, and Patrick. Some examples of the facts in their book include the following:

In 1954, the 1st Pilotless Bomber Squadron, Light, was made up of about 550 people, including 50 officers. In 1956, the 19th Tactical Missile Squadron (TMS) deployed to Germany with almost 600 missile personnel. In 1959, Detachment 2, 4504 TMW (T) at Patrick, had over 1800 people assigned as staff and students. By 1962, more than 3,500 Missileers had graduated from training. When the 498th Tactical Missile Group (TMG) was activated it had 75 officers and 630 enlisted members.

Since Matador and then Mace were around from 1954 until 1969, there were obviously more Missileers than the ones mentioned above, and while there were as many as 14 different tactical missile units at one time, the number of active squadrons varied somewhat throughout that history. There were also a number of Missileers in units that were involved with Matador and Mace in addition to the squadrons, including the 6555th Guided Missile Wing and Squadron and others involved in other tasks related to missile guidance, testing and training. If we assume that there were about 5,000 Missileers in the units at any one point when all were active, and add the fact that the systems were around for over 13 years, there had to be some Missileers who came and went, and were replaced, during that period. In 1962, when I arrived at Mountain Home AFB, ID, to begin duty in Titan I maintenance, several NCOs that I worked with had come from Matador and Mace. To arrive at our estimate, we assumed that at least half of those 5,000 positions mentioned above were filled by more than one person over the life of the system. Taking into account that the number of units wasn’t constant, that some people stayed for several years, or served in more than one location over the period,

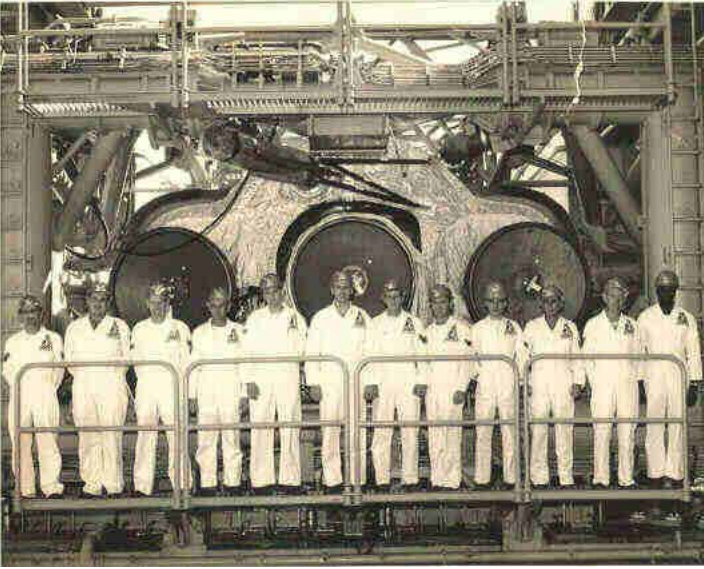


Hound Dog Missileers - 379 AMMS

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Crew for the First SAC Atlas ICBM Launch

while others served a single tour and left, and all the other factors, we assumed that the total number of Missileers involved with Matador and Mace over the years contributed 8,000 officers and Airmen to our total number.

The Small Missiles – Maintainers who completed training on air to air and air to ground missiles, like Sidewinder, Falcon and others, made up a substantial number of Missileers. By 1962, Lowry had graduated over 1,000 enlisted Missileers. AAFM has a few members who worked these systems, but most people who served look at our organization as a “big missile” organization. We use a conservative estimate of 5,000 Missileers who have served in these systems.

The Hound Dog, Quail, SRAM, ALCM Family – At one time, there were 28 bomb wings with Airborne Missile Maintenance Squadrons (AMMS), the units that maintained Hound Dog and Quail, and a single squadron that maintained drones at Davis-Monthan. These folks were primarily trained at Chanute, in courses that lasted six to nine months. Training today for the cruise missiles currently in the inventory, is conducted at Vandenberg, by the 381st Training Group.

Hound Dog came into the inventory first in 1960, and was around until 1975, and Quail was in the inventory from 1960 until 1978. The AMMS Alumni web page lists rosters for each of the 29 units, including the unique unit at Davis-Monthan. An article in the Beale AFB, CA, Sentinel newspaper in 1962 said, “Each squadron will be made up of between 77 and 90 officers and airmen.” Sources indicate that the ones with 77 maintained only the Hound Dog, those with 90 also had Quail decoys. At the peak, that would mean 14 squadrons with a total of 1,260 people, and 14 with a total of 1,078. We have also added an additional 13 people to the units responsible for the additional missiles at those wings assigned more than one bomb squadron. The AMMS rosters total about 2700 people, but there are many missing names

because the people listed for just Beale, for example, totals 491 names, nearly one-fifth of all the names listed for all 28 bases. Assuming Beale’s is the most complete listing, the total suggests there would have been an average of about six turnovers of personnel during Beale’s 1961-75 period. That would mean a rotation about every 2½ years, which seems excessive. If we assume that Beale was atypical, an assumption of 4 years for an average tour of duty was used to calculate the figures for all the AMMS units over their active periods, rounding to the nearest 4-year increment. The Davis-Monthan drone squadron was primarily manned by people from other AMMS units, so probably had little contribution to our final number. It is estimated that Hound Dog/Quail contributed 5,872 to the Missileer total.

The newer cruise missiles, starting with SRAM, and then ALCM, came into the inventory to replace Hound Dog, but over the next several years, the size of the bomber force shrunk considerably, to the current force just over 150 bombers. In 1982, we had 16 B-52 wings, now we have two. The B-1 and the B-2 came into the inventory, but never in numbers like we had in the B-47 and B-52 era. However, there were, and are, numerous Missileers involved in these airborne systems. Over the 40 plus years that one or more of these systems have been part of the force, there were probably another 6,000 Missileers that will add to our total estimate, using the same assumptions we have for other systems for tour length, repeat tours, career versus career Missileers and other factors. That means this part of the total Missileer population, from Hound Dog to present, is 11,872 Missileers.

Snark – the Snark intercontinental cruise missile had a short life, with the wing at Presque Isle AFB, ME, only operational for a few months, but we did extensive testing at Patrick for this system. Many Snark veterans moved to Atlas and Titan I after Snark went away, and we estimate that about 500 Missileers served in this system and contribute to our total.

BOMARC – this air defense missile was around from 1959 to 1972, but one unit, the 4751st Air Defense Wing (Missile) (ADW (M)) flew BOMARC from Eglin AFB, FL, as targets, until 1979. Greg Ogletree did



First Snark “Missileairmen” Graduate at Northrop Factory n 1957

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Lowry Titan I Crew Heading to Alert

extensive research on the manning of the eight BOMARC squadrons, the Canadian units, the training organization, the 4751 ADW (M).

The 4751 ADW (M) liaison office was established in 1957 with 7 officers, 2 enlisted and one 1 civilian. By 9 January 1959, the wing had 156 officers, 1139 airmen and 203 civilians. The 4751th Air Defense Squadron (M) (ADS (M)) activated 15 January 1958 with 1 officer and 2 enlisted.

On 16 July 1959, the first class of 165 Missileers graduated from 4751 ADS(M) after “4 months of training” (but another official source says “three month program”), including Phase I, Organization and Orientation (1-2 weeks, for this class just one week), Phase II, Team Training (5 weeks), Phase III, Operational Training (9 weeks, later 5 weeks followed by R&E, the Retraining and Evaluation Program, which each tactical unit attended at Hurlburt Field, FL, now AFB) every 14 months, during which two missiles were fired. Upon graduation, all of these graduates were sent to man the 46th Air Defense Missile Squadron (ADMS), McGuire AFB, NJ. The second class went to 6 ADMS, Suffolk County AFB, NY, comprised of 9 commissioned officers, 2 warrant officers, 68 Noncommissioned Officers, and 52 Airmen (131 total personnel).

Although no Trained Personnel Requirement (TPR) figures could be located for the 4751 ADS (M), it looks like an operational BOMARC squadron contained somewhere between 130 and 165 military personnel. Eight BOMARC units were active during the life of the system.

Manning figures were found for only one of eight squadrons, the 26 ADMS, but only for the early years, with 14 officers, 1 warrant officer, 192 airmen in 1959, 17 officers, 252 airmen in 1960, 19 officers, 351 airmen in 1962 and 18 officers, 232 airmen in 1964. These figures were extracted not from a Unit Manning Document (UMD), but a summary sheet that contained orders for UMD authorizations. The document covered the unit’s entire active period, so one might logically conclude that the years for which UMD figures were not listed contained no changes from the previous entry. (The reason for the spike of about 100 airmen in 1962-63 is somewhat of a mystery.)

It appears that a BOMARC squadron contained an average of about 250 officers and airmen, but not all of these personnel would have been Missileers. We know from the figures provided by the 4751 ADS (M) that the first class of graduates (all Missileers) numbered 165 and the second class of Missileers was 131, so it appears their TPR for each BOMARC unit averaged about 150. So of the 250 personnel assigned to each squadron, 100 were not Missileers. Two of the units had relatively short lives, inactivated in 1964, so it’s probable that the personnel assigned initially also closed down the unit. The others were around longer, meaning it’s likely there was at least one turnover of personnel at those stations, perhaps two. Although the Air Force had a considerable investment in the specialized training of these troops and would have tried to keep them in BOMARC-related duties, not all re-enlisted so there was a need for replacements after four-year enlistments expired and separations occurred.

The estimated number of Missileers who did duty at the 46 ADMS, 26 ADMS, 22 ADMS, 37 ADMS, 74 ADMS and the 35 ADMS, is 300 for each. For the 6 ADMS and the 30 ADMS, 150 each, for a total of 2,100 officers and airmen.

There were also two BOMARC units in Canada, manned by Canadian personnel, and launch was accomplished using a two-key system, and the second key was controlled by US military personnel assigned to the 425 Munitions Maintenance Squadron (MMS), activated 5 March 1964, in detachments at RCAF Station North Bay (446th Surface to Air Missile Squadron (SAMS)) – Detachment (Det) 1, 425 MMS (inactivated in 1972) and RCAF Station La Macaza (447 SAMS) – Det 2, 425 MMS (inactivated in 1972). Because their duties were limited to providing “custodial and maintenance functions for US material in Canada” (i.e., the nuclear warheads for the missiles), it seems unlikely that more than a handful (perhaps a dozen or so) of personnel were assigned to each detachment. Although they were nuclear weapons technicians, because they were also key-turners, they should be considered Missileers even if they never wore the “pocket rocket.” It is estimated that the 425 MMS contribution for RCAF BOMARC (1964-1972) is 50 Missileers.



Titan II Maintenance Team



Early Minuteman Pre-Departure

The last operational BOMARC was depostured from alert in 1972, but the 4751 ADS (M) remained active until 30 September 1979 to support BOMARC drone operations over the Eglin Gulf Test Range (which actually began in 1967). Because the “schoolhouse” nature of the unit had ended, its manning was undoubtedly less than it had been during the 1960-1972 period when a full staff of instructors was needed. During that period, about 195 of the 239 military personnel were performing duties directly related to the missile. As for the operational units, the figures below assume one rotation. The post-schoolhouse figures assume a third rotation at the beginning, but without instructors. The 4751 ADS (M), 1959-1972, 390 officers and airmen, then for 1973-1979, 180 Missileers.

The weapons controllers in the Semi-automatic Ground Environment (SAGE) buildings (the air defense control centers) who vectored the missiles to their targets via the SAGE computers were not authorized to wear the Missile Badge, so they are included in the estimate. Those who worked with the missile’s development at Eglin and Patrick during the early and mid-1950s are accounted for in the early part of this analysis. Our conclusion is that, in total, BOMARC contributed about 2,720 Missileers to our final number.

Thor and Jupiter – Jupiter was deployed in Italy and Turkey for a short time, jointly operated by the US and the host nations. Thor operated in the United Kingdom (UK) by the Royal Air Force (RAF). Both were originally planned to be deployed as Air Force systems, operated and maintained by only US Air Force personnel, but both Jupiter and Thor were finally deployed to be operated and maintained by host nation forces. The US participation in both missiles in the intermediate range ballistic missile (IRBM) role was limited, finally, to training the host nation personnel and control of the nuclear assets. Thor had other missions, though, including air defense and space launch, and these missions involved Missileers.

Jupiter was originally planned to have 500 people in each of three squadrons, one in Turkey and two in Italy. The US had more Missileers involved early in the short life

of Jupiter, with numbers changing as the host nations took over operating and maintaining the systems.

Thor was to involve about 500 people in the UK and others in the 392nd Strategic Missile Squadron (SMS) at Vandenberg, the training unit. In the end, in the UK, the RAF had 20 squadrons manned with 807 military and 107 civilians, with 400 US Missileers assigned in the nuclear custodial role and other support roles. The overall result was probably an involvement of about 2,000 US Missileers for Thor and Jupiter in the IRBM role, both stateside and in the two host nations.

The 4300th Support Squadron, part of the Offutt AFB, NE, 4000th Aerospace Applications Group, was a unit at Vandenberg, and the 10th Air Defense Group was at Vandenberg and Johnson Island involved in launching of Thor for various Air Force space missions, including reconnaissance, meteorology and air defense. We assumed that about 500 Missileers were involved in this mission over the years it existed. The total Thor and Jupiter contribution to the overall count is estimated to be 1,500, since a number of people who served in these systems went on to other missile systems.

Blue Scout – for four years, SAC operated the Blue Scout missile as an emergency rocket communications system from three locations in Nebraska, before Minuteman at Whiteman AFB, MO, took over the ERCS role. AAFM Member Maj (Ret) Philip Moore served in the system, and provided this:

“Our Blue Scout operation was a part of the 1st Aerospace Communications Group at Offutt with our squadron, the 32nd Communications Squadron, located at Scribner Air Base, NE. Our mission was classified at the time, and I always thought it was rather obvious that our mission must have had something to do with comm (communications), since we were a comm unit.

We had 3 launch sites with 5 crews per site. Each crew had 2 members, a company grade officer with the title Launch Control Officer (LCO), and an NCO with the title Communications Console Operator (CCO). The CCOs were from the communications career field. The LCOs were from various career fields, or were new 2nd Lts, and trained to become Missileers - much like the earliest days of ICBMs - like when I started in Atlas F, where we were



Minuteman Maintenance - “Lower Away”



Minuteman II Glory Trip Task Force, 1978

either new Lieutenants or the more senior officers from other career fields. In fact, that was the case with the exception of Mack Acuff and me, who came from Atlas F to join the Blue Scout program. We were the only 2 with previous missile experience. Every other officer before or after us was either new or from other various career fields. Our squadron commander was a Lt Col Navigator who also had no previous missile experience. Each site had 2 security guards on duty and they rotated with each crew rotation and rode with us in the crew vehicle. A crew could be dual qualified as both instructor and evaluator. When I arrived, I aced the training and was immediately made an Instructor and an Evaluator. I also pulled a regular alert schedule and taught while on alert and evaluated between alerts. When Mack and I arrived, alerts were 12 hours. I suggested going to 24 hour alerts to save transportation time and expense, and we changed to that after a while. The only maintenance function I remember was a civilian tech rep from Bendix, the payload manufacturer, and he worked everything dealing with the missile. The crew CCOs fixed everything associated with comm gear. The system was very uncomplicated.”

One interesting issue, some of the other officers were awarded missile badges but they lost them when some senior level at SAC decided we were a “rocket” unit, not a “missile” unit. These were small units, with only about 30 Missileers involved, and few went on to other missile assignments, so we will assume 25 contributed to our total.

Atlas and Titan I – From the late 1950s to 1965, there were up to 18 squadrons of the new liquid fueled Atlas D, E and F and the Titan I. Almost every Missileer who served in these systems was trained at Sheppard, and most were first time Missileers. Many of the officers and enlisted crewmembers and maintainers came from the SAC bomber and tanker force, which was being reduced, as B-47s and KC-97s were phased out of the inventory, and a number came from Matador, Mace and Snark. These squadrons were large units, with 600 to 1,000 people assigned to each. A document from the 551 SMS at Lincoln AFB, NE, shows 60 crews assigned, with two officers and three airmen on each,

for a total of 300 crewmembers, and a roster of almost 1,000 officers and airmen total for the unit. Not all the members of the squadrons were Missileers, but the vast majority were, and there were numerous others assigned to training units, research, development and testing, and to various headquarters levels.

The number of crewmembers varied significantly between the three Atlas versions, as some of the photos accompanying this article show. It took a lot of Missileers to launch an Atlas D from a gantry at Vandenberg, and almost as many when one of the ground-guided, coffin stored Ds was launched from one of the operational sites. Note that two of the photos show between 11 and 13 crewmembers for an operational crew. The number of folks required didn’t change, but over the life of Atlas and Titan I, the designation “crewmember” changed for some specialties, like power production. Part of the time, the Electrical Power Production Technicians (EPPT) were part of the crew, and at other times they were considered part of maintenance. In Titan I, for example, there were always two EPPTs on the same 24 hour tour as the other four crewmembers (launch control officer, guidance control officer, ballistic missile analysis technician and missile maintenance technician (MMT)) but during part of the life of Titan I, they worked for the crew commander, while at other times, they worked for the Power House Chief, a senior EPPT. Atlas and Titan I had no commercial power, only what was generated onsite, so there were always EPPTs on duty keeping the diesel generators running. In some cases, there were a large number of maintenance personnel assigned to each site, especially in Titan I. During the day, a Titan I site had a site commander (Major or Lieutenant Colonel), a maintenance officer (Captain), a maintenance chief (Chief or Senior Master Sergeant), a power house chief (Technical or Master Sergeant), three pad chiefs (MMTs) and three assistants, numerous missile facility technicians, PPTS, plumbers, electricians, tech order clerks, tool crib managers and others. There were many more Missileers who were maintainers assigned to the shops in the missile squadron, from engine technicians to guidance technicians, as well as reentry vehicle technicians and propellant transfer technicians usually assigned to the parent bomb wing.

There were about 16,000 Missileers in the three Atlas versions and Titan I, including those at other locations, headquarters or specialty units. Since most of the squadrons were only around for three to four years, there were few second generation members, but some of those who were in Atlas and Titan left early to begin the Minuteman and Titan II buildup. We estimate that at least 2,000 Missileers came from Matador and Mace or Snark, so Atlas and Titan I added about 14,000 people to the Missileer population. A very significant portion of that population moved into Minuteman or Titan II as the units closed, although many of the rated crewmembers (mostly pilots) returned to the cockpit.

Titan II – the three Titan II wings were around for a little

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more than 20 years. Each wing had two squadrons with nine missiles in each squadron, so there were about 324 four person combat crews in total, with two officers and two enlisted members on each crew. So there were almost 1,300 combat crew positions and about 3,000 other Missileer jobs in maintenance and other areas. Titan II was around for about five full cycles of changeover based on a four year tour on a crew or a four year enlistment, so those 4,300 positions equated to 21,500 total Missileer slots over the life of the three wings. But a significant number of officers and enlisted members made a career of Titan II, staying in the system for many years. If we assume that at least 2,500 of those who served came from earlier systems, and half the rest stayed in the system for more than one tour, the Titan II contribution to the final number is about 9,500.

Minuteman – Minuteman I, II and III were by far the biggest contributors to the overall Missileer population, with Minuteman part of the Air Force for 55 years. Minuteman built up rapidly, beginning in 1962, and by 1967, we had 20 squadrons with 1,000 missiles, with large operations and maintenance components. We maintained 20 squadrons until Peacekeeper replaced one at Warren, in 1988, then dropped to 16 in 1994 when the wing at Ellsworth AFB, SD, closed, to 13 when Whiteman closed in 1996 and to 10 when Grand Forks AFB, ND closed in 1998. Then we closed the 564 MS at Malmstrom in 2005, leaving the current 9 Minuteman squadrons. The current change from 450 to 400 alert missiles, as part of New START (see the accompanying story on page 14) does not impact manning, since the “warm” silos are scattered throughout the wing.

Changes over the years, however, have had a significant impact on the size of each wing’s operations and maintenance components. When the last Minuteman wing stood up in 1965 to 1966, the 321 SMW at Grand Forks, nuclear safety considerations meant that the crewmembers on alert could not rest/sleep, so SAC went first to three man crews, then to a schedule that provided two crews on site for full coverage by two wide awake crewmembers at all times. Until nuclear safety modifications solved this problem, all of the Minuteman II and III wings basically had a third more crewmembers than Minuteman I had originally, and than we have now. An operations squadron that now has about 30 crews had 45 two man, or 30 three man crews, for several years. Maintenance has changed considerably, too, as we have improved the way the system operates day to day and its reliability. In the early days of Minuteman, each wing had 25 Combat Targeting Teams, with each team having one maintenance officer and two enlisted members. We also had many more of the specialized teams, like Missile Maintenance Teams and Missile Handling Teams, in the early years, since guidance system changes, missile recycles and other maintenance was more intense. When you talk to some of the maintainers who served in the late 1960s and

early 1970s, you find they were seldom home, and often on dispatches to the field for 16 to 20 hours.

We also had much larger headquarters staffing at every level, from the Air Staff and the Joint Staff, to SAC, the Numbered Air Forces, the Air Divisions and the special units, like the 3901 SMES, the 576 SMS (now Flight Test Squadron), to units like the BMO and others. Some data that our research has come up with:

Between 17 June 1963 and 1 July 1993, the 4315 CCTS graduated 21,542 missile students as potential crewmembers. That number included Titan I crewmembers until 1965, Titan II crewmembers until the early 1980s and Peacekeeper crewmembers from 1988 to 1993. The Titan I component was very small, since the majority of Titan I crews were trained before the units were operational in 1962, and almost all of that small number went to a Titan II or Minuteman wing in 1965. Titan II required as many or more crewmembers than Minuteman – 54 launch control centers to fill, each with four crew members, compared to 100 LCCs for Minuteman with only two crew members. If we make a few assumptions about the mix, and assume the output was fairly constant through those 30 years, about 720 per year, then for the first 20 years, about 7,500 Minuteman crewmembers were trained, figuring on a drawdown for Titan II the last couple of years in that period. However, the increased crew manning in the mid-1960s for Minuteman, probably puts that figure closer to 8,000. That results in a total Minuteman output of 15,200 over the thirty years. In 1964 and 1965, many of those trained came from the Atlas and Titan I units that were closing – in my training class in the fall of 1965, every student in training came from another system. Assuming a large number of students in that period had already earned their missile badges, the Minuteman contribution to the total of new Missileers for that period would be 14,000.

After 1993, the output began to decrease, as the first three wings prepared to close. In 1994, the 381st Training Group was activated at Vandenberg, and, with its subordinate squadrons, became the center for missile training for both operators and maintainers. By 1998, we were down to three wings, and since 2005, there have been 15 operations



GLCM Flight

squadrons, each with 30 crews. Current wing fact sheets list operations personnel in the 350 to 650 people, total, but in some cases, these figures include chefs, helicopter operations and others who are not Missileers. Missile maintenance figures from the same fact sheets indicate about 650 missile maintenance personnel. Using these figures as a basis, adjusting for downsizing of the ICBM force since 1994, and using the same assumptions as above for tour length, moves to other jobs, single tours in missiles and other factors, the estimated number of Missileers for the 1993-2017 period to be added to our total is 3,400 for operations and 6,550 for missile maintenance, for a total of 9,950 Missileers.

This puts the total Minuteman contribution to the Missileer total, for the entire life of the Minuteman system, at 23,950 Missileers for our total count.

Peacekeeper – between 1988 and 2005, there was one Peacekeeper squadron of 50 missiles and 5 LCCs that were part of the wing at Warren. A single squadron had about 60 crewmembers, there were a few Peacekeeper-unique jobs in the wing and other places, and a small increase for Peacekeeper unique maintenance teams, although there was some reduction in Minuteman slots at the same time. Peacekeeper probably added only about 200 Missileers to the overall number, but a significant number came from Minuteman, so we will assume the contribution to the overall population is 150.

GLCM – the Ground Launched Cruise Missile (GLCM) was around from 1983 until 1991, and was a great option for long time SAC Missileers, offering an opportunity to serve in Europe in a new deterrent system. There were plans for six GLCM bases in five countries, and all the units were activated, but the last, in the Netherlands, did not make it to operational status before the Soviet Union finally agreed to sign the Intermediate-range Nuclear Forces treaty, which required that all systems on both sides (Pershing II and GLCM in the North Atlantic Treaty Organization countries and similar systems in the Soviet Union) be dismantled and destroyed. GLCM training was conducted in the 868th Tactical Missile Training Group at Davis-Monthan. Greg Ogletree worked hard on this one, too, and found that the 868 TMTG graduated between 5,000 and 6,000 GLCM Missileers. The vast majority of those who served as Missileers in GLCM came from the SAC missile force, but there were some first term officers and enlisted members who became GLCM Missileers. A GLCM flight (there were 29 flights planned) with 70 people in each flight, but a substantial number of those were security forces from both the US and the host nation. There were 25 missile operations and maintenance people in each flight, so the total number of 868 TMTG graduates includes security forces and medics. About half the graduates were Missileers, including staff members and those assigned to other units, testing and the various headquarters.

So there were probably about 3,000 GLCM Missileers, with at least two thirds of these people who had served in other systems. That means that GLCM contributes only about another 1,000 positions to the total Missileer population.

Other Contributors, Including Spacelift, Research and Development, etc. – Over the almost 60 year life of the missile badge, the requirements changed for people in missile-related duties, sometimes including them as Missileers and other times, not. Controversies like the “rocket versus missile” decision referenced in the Blue Scout section happened. There were some who earned the badge in positions like space launch, test and development and other areas. We will assume that those Missileers numbered 1,000 in our total population.

Conclusions – These numbers are far from precise, since there are so many variables and so many unknowns, but the estimates and assumptions give us a pretty good idea of the size of the Missileer population in the Air Force for the last 70 plus years. It is unfortunate that some brilliant young officer or enlisted member didn't suggest, over 60 years ago, that the Air Force keep an official count of the number of missile badges awarded. That would solve the problems of guessing how many people served in more than one system, how many moved from operations to maintenance or served in some out of the way missile assignments that don't show up in unit reports and histories. But that would have made our job here too simple – it was much more entertaining to those of us who did this analysis to make some assumptions, dig into old records, books, unit histories and articles, and try to arrive at a meaningful conclusion about how many officers, warrant officers and enlisted Airmen have served as Air Force Missileers. When you look at the results and compare it to the size of the Air Force over its history, we are a pretty small family – and many of us think of ourselves that way, as a family. Considering that the Air Force was nearly a million people for some of its history, and that even SAC had almost 300,000 people at its peak, the number of Missileers who have served, and are now serving, is a small, but a very important part of that total number. We came up with a final number much smaller than many suggested it might be, and some of you may have comments, data or assumptions that could cause us to revise this estimate. If you do, please let AAFM know your thoughts. After all the analysis, we determined that, from the end of World War II to today, early in 2017, there have been 79,717 Air Force Missileers. One thing it illustrates clearly is that nuclear deterrence doesn't take a giant force, just a small group of well trained, motivated professionals we call Air Force Missileers operating, maintaining, securing and supporting reliable, accurate and extremely effective weapon systems.

References:

501st Tactical Missile Wing: Making History, Josten/National School Services, Winnipeg, Canada.
868th Tactical Missile Maintenance Squadron, 31 May 1990 – Parting Shot: Mission Complete.

381st Training Group, Vandenberg AFB, CA.

“Air Force Magazine”, various Air Force Almanacs and “The Short, Happy Life of Glick-EM” Greer, Peter, July 2002 issue, Air Force Association.

Bolton, Robert and Mindling, George, “US Air Force Tactical Missiles, 1949-1969”, 2008.

Boyes, John, “Project Emily, Thor IRBM and the RAF”, Tempus Publishing, Stroud, UK, 2008.

Col (Ret) Robert D. Livingston, last commander of the 868 TMG and president of the GLCM Heritage Foundation.

Current AF fact sheets from numerous AF base web pages.

Hurlburt in Review – U.S. Air Force 4751 Air Defense Wing (Missile), undated, but circa mid-to-late 1959; published by Malone Enterprises, 1309 N Fredonia, Nacogdoches TX.

SAC history documents in the AAFM CD Collection.

Unit history documents and unit reunion documents in the AAFM CD collection.

How Many Missileers?

Early Missileers	500
Matador and Mace	8,000
Snark	500
Small Missiles	5,000
Strategic Cruise Missiles	11,872
Thor and Jupiter	1,500
BOMARC	2,720
Blue Scout	25
GLCM	1,000
Atlas and Titan I	14,000
Titan II	9,500
Minuteman	23,950
Peacekeeper	150
Other (Spacelift, etc)	1,000
Total - All Missileers	79,717

A Short History of our Badge - by Col

(Ret) Charles G. Simpson, AAFM Executive Director

Our badge, originally a single badge with no wreaths, stars or operations designators, will be 60 years old next year. The criteria for award of the badge has varied throughout the history of the badge, as has its name. It was originally the Guided Missile Insignia, when it was presented in 1958 to two officers and two senior noncommissioned officers (NCO). In July 1958, the Air Force Chief of Staff, General Thomas D. White, presented badges to Col William C. Erlenbusch, commander of the 864th Strategic Missile Squadron (SMS), the Strategic Air Command (SAC) unit at Redstone Arsenal at Huntsville, AL, that was training Jupiter operators and maintainers, and MSgt Jake Kindsfather, technical NCO of operations in the 4504th Tactical Missile Training Squadron (TMTS), the Tactical Air Command (TAC) unit training Matador operators and maintainers at Orlando AFB, FL. On 26 September 1958, Maj Gen David Wade, at the Air Force Association's Space Age Luncheon

in Dallas, TX, present badges to two recipients were Capt Walter A. Loughridge and MSgt James J. Mustaine, both of the 576 SMS, SAC's Atlas squadron at Vandenberg AFB, CA. The second presentation was to recognize members of an “operational unit” instead of a training organization.

Over the next five years, the criteria was adjusted or changed several times. Research and development personnel were excluded for a couple of years. Those who worked on air launched missiles, the small missiles that were, in 1962, called Guided Aircraft Missiles or Guided Aircraft Rockets, like Sidewinder, Falcon and others were added along the way. There were many discussions and changes about the eligibility for the badge for those in missile communications, civil engineering support of missile units and much more. AAFM Member Greg Ogletree's history, “The Missile Badge”, available from AAFM, details each of the changes in criteria over the life of our badge. It is obvious that the task of deciding who really was, or is, a Missileer, was a problem from the very start.

The name was changed to the Missileman Badge in 1963, and the Air Force went from one unadorned badge for everyone to three levels, the Basic Missileman Badge, Senior Missileman Badge, with the star on top, for those who had served three years of missile duty, and the Master Missileman Badge, with the star and the wreath, for those who had served seven years. These standards were also changed a few times over the years.

In 1979, the name was changed to Missile Badge, eliminating the “gender-specific terminology” in the name. In 1988, the Operations Designator was added to recognize combat crew duty, with that version now called the Missile Badge with Operations Designator.

In 2005, the Missile Badge with Operations Designator was replaced by the new Space Badge. Between 31 October 2005 and 6 June 2008, missile crew members (missile operations officers) were issued the new “space wings” or “spings” instead of the missile badge. The only people still allowed to wear the missile badge with operations designator were those officers who had moved to other career fields and were therefore not eligible to wear the new Space Badge. Wear of the new Space Badge was governed by a complex certification and training program that required certain levels of accomplishment before an operator could wear the basic, senior or command Space Badge. On 6 June 2008, the Missile Badge with Operations Designator was reinstated as the badge for those in missile operations.

When the 2005 change was made, maintenance personnel continued to wear the original missile badge without the Operations Designator, and the name was changed to the Missile Maintenance Badge.

Therefore, we now have six versions of what was once a single badge, since the Missile Badge with Operations Designator and the Missile Maintenance Badge each have Basic, Senior and Master versions.

We are all Missileers – by Col (Ret) Charlie Simpson, AAFM Executive Director

On occasion, I get the urge to preach – probably due to the DNA from my Baptist minister grandfather and minister and Air Force Chaplain father. This time, I am preaching to the choir. By the choir, I mean those missile crewmembers who sit behind the minister (the commander) in the choir loft and begin to think they are the only ones in the church. They start thinking they are the only Missileers – all those other folks out there in the pews are just spectators, who wear some different badge. It was that way when I began my operations career after some time in missile maintenance, and the “opinion” pops up every few years.

A similar situation develops occasionally in other places. I spent four years as a base commander on two fighter bases – some pilots, who spend a lot of time alone in a cockpit – forget that it takes a lot of people to get them up in the air. Not just the maintainers, the fuelers, the armorers, but all those other support folks who allow them to do a really exciting job. A few years ago, at one of the Society of the Strategic Air Command (SAC) meetings, four former SAC Command Chiefs (we called them Senior Enlisted Advisors then), two of whom had also served as Chief Master Sergeant of the Air Force, gave a superb panel presentation. The audience was several hundred SAC vets, mostly bomber and tanker officer crewmembers, a few Missileers, gunners, boom operators, maintainers and support personnel. The society membership was heavy on the senior officer, operator side. One of the Chiefs started the discussion but telling the audience, “Most of you in the audience spent your careers thinking that you were the only important people in the command.” He went on to say, and was seconded by his counterparts, that the officers flying the big airplanes often forgot that it took a lot of maintenance, munitions and all the other specialties to get a B-52 or KC-135 ready to fly. One of the chiefs added, “You also should realize that the cook who fixed your flight lunch and the two striper plumber who fixed your commode in base quarters is just as important to the Air Force, too.”

When the original missile badge, then called the Guided Missile Insignia, was introduced in 1958, it was only after a lot of discussion about who should wear the badge. There was only one badge then, no stars, wreaths or operations designators, and everyone who was part of an Air Force missile mission earned the badge. I started my missile service as a Titan I missile maintenance officer, and was awarded my badge shortly after I completed training at Sheppard AFB, TX, in a ceremony that was mostly enlisted maintenance people that I worked closely with. We had no doubt that we were all Missileers. By the time the star and the wreath came along, I was on a Minuteman crew, one of the first at Grand Forks AFB, ND. When I got my star,

the ceremony had more sergeants than captains on the stage. Those of us on combat crews, both missile and aircraft, did get other recognition that maintainers and others did not get – we got to wear the Combat Crew Badge as long as we served on a crew, and earned the Combat Readiness Medal forever once we accrued enough time performing alert.

Admittedly, in the early days, it was harder to separate operators from maintainers – they were together all the time. It took 11 or 12 crewmembers to launch an early Atlas, and most of those folks were Sergeants or Airmen with maintenance specialty codes. When I worked on a Titan I site as a maintenance officer, I was one of almost 100 maintainers who spent the day with the four crewmembers at the site. We spent a lot of time together. We knew what it took to get a missile on alert and keep it there.

In the early days of Minuteman, maintenance was far more than a voice on the phone from Job Control or one of the direct lines from a launch facility. Officer crewmembers had to go to the launch facilities often – every time there was a guidance system change, which was very often in the early days – two ops officers had to courier a Permutation Plug (P-Plug) to the site and watch the Missile Maintenance Team install it before mating the “can” with the bird. We also had maintenance in the launch control center almost every day, trying to make all the new “stuff” work in a brand new system.

A few years later, when I was an operations squadron commander, it was obvious that the crewmembers in my unit seldom really had contact with the maintainers. We did have a program for a while that allowed officers to go back and forth between ops and maintenance, and we had some orientation programs to educate both sides, because maintainers sometimes think they are a lot more important than those two officers who just sit in a capsule a few days a month. It works both ways.

I am one of those who think the decision in 1988 to add the Operations Designator to the badge was a mistake – it just made the separation between ops and maintenance more pronounced. To me, it made more sense that we should all wear the same badge, and not have to be specifically identified as being in a special segment of the population. Then, we added to the confusion when the missile badge went away for operators for short time, to be replaced by the Space Badge. When that happened, somebody decided to name the original badge the Missile Maintenance Badge, so in some people’s minds, it really isn’t even a real missile badge any more.

I was around long enough to wear the new badge, since I retired a year later, but my uniform never saw an Operations Designator – to me there really was just one missile badge, and all of us who were, and are, involved in a missile system are Missileers. We won’t take up an offering or sing a closing hymn, we will just ask you to go out and spread the word that “We are all Missileers.”

We Are Air Force Missileers

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

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

We manned the Bomarc in New Jersey and New York and test flew the Mace in Libya.

We are Air Force Missileers

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

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

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

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

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

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

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

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

We are Air Force Missileers

This reading was presented at the Association of Air Force Missileers 2000 National Meeting in Colorado Springs as part of the opening activities at the AAFM Banquet.

It was written by the executive director, Colonel (Retired) Charlie Simpson, and read by then AAFM Vice President Colonel (Retired) Jim Burba.



EC-135A Over a Missile Alert Facility

ALCS 50th Anniversary: Celebrating a Proud Heritage

- By: Capt Cory Kuehn, AAFM Mbr No L637, Elkhorn, NE.

As the Air Force celebrates its 70th Anniversary this year, America's airborne missileers will also be celebrating another milestone. The year 2017 marks the 50th Anniversary for the Airborne Launch Control System (ALCS). Since 1967, a relatively small cadre of elite airborne missileers have stood alert, providing the US a survivable intercontinental ballistic missile (ICBM) launch capability in the event the missileers in underground Launch Control Centers (LCC) were unable to do so. Just like a ground-based Minuteman ICBM crew, the Missile Combat Crew-Airborne operating the ALCS is made up of a two-person crew; the Missile Combat Crew Commander-Airborne (MCCC-A) and Deputy Missile Combat Crew Commander-Airborne (DMCCC-A).

The ALCS has a very dynamic history. It has flown onboard EC-135A, EC-135C, EC-135G, EC-135L, E-4B, and E-6B aircraft. Over the years, airborne missileers have had the capability through ALCS to remotely control Minuteman I, II, III, and Peacekeeper ICBMs by transmitting various Preparatory Launch Commands, Enable Commands, Launch Commands, and Inhibit Commands from the air to Minuteman and Peacekeeper ICBMs on the ground. With the Peacekeeper ICBM, ALCS also had the capability to remotely retarget missiles and perform various other Launch Facility status and maintenance commands. Although there were several modifications over the years, the ALCS equipment essentially remained the same from its original inception in the mid-1960s to the early 1990s. However, prior to the Peacekeeper ICBM coming on alert in the mid-1980s, the new Common ALCS (CALCS) equipment began to replace the legacy ALCS equipment. Today, the CALCS equipment is the only ALCS equipment that is still operational, although it is no longer called the Common ALCS - it is just called ALCS.

ALCS Inception

In 1962, when the Minuteman ICBM was first

placed on alert, the Soviet Union did not have the number of weapons, accuracy, nor significant nuclear yield to completely destroy the Minuteman ICBM force during an attack. However, Strategic Air Command (SAC) planners knew it was only a matter of time before the Soviets could have such capability. Early on, the Air Force experimented with using trains to make the Minuteman ICBMs mobile, and therefore more survivable. However, the Air Force decided to scrap the mobile Minuteman ICBM concept and emplace Minuteman in 1000 missile silos along with their 100 associated LCCs. Each facility was spread out several miles apart from each other so that the Soviets could not destroy multiple sites with just one nuclear warhead.

Starting in the mid-1960s, the Soviets began to gain parity with the US and now had the potential capability to target and successfully attack the Minuteman force with an increased number of ICBMs that had greater yields and accuracy than were previously available. Studying the problem even more, SAC realized that in order to prevent the US from launching all 1000 Minuteman ICBMs, the Soviets did not have to target all 1000 Minuteman missile silos. The Soviets only needed to launch a disarming decapitation strike against the 100 Minuteman LCCs - the command and control sites - in order to prevent the launch of all Minuteman ICBMs. Even though the Minuteman ICBMs would have been left unscathed in their missile silos following an LCC decapitation strike, the Minuteman missiles could not be launched without a command and control capability. In other words, the Soviets only needed 100 warheads to fully eliminate command and control of the Minuteman ICBMs. Even if the Soviets chose to expend two to three warheads per LCC for assured damage expectancy, the Soviets would only have had to expend up to 300 warheads to disable the Minuteman ICBM force - far less than the total number of Minuteman silos. The Soviets could have then used the remaining warheads to strike other targets they chose.

Faced with only a few Minuteman LCC targets, the Soviets could have concluded that the odds of being successful in a Minuteman LCC decapitation strike were higher with less risk than it would have been having to face the almost insurmountable task of successfully attacking and destroying 1000 Minuteman silos and 100 Minuteman LCCs



4 ACCS Officers in the 1980s



ALCC Crew and New Common ALCS Equipment

to ensure Minuteman was disabled. This theory motivated SAC to design a survivable means to launch Minuteman, even if all the ground-based command and control sites were destroyed.

Born out of an original concept to have an airborne launch capability from SAC's Looking Glass aircraft to launch the Emergency Rocket Communication System (ERCS), SAC modified this plan to launch the entire Minuteman force from the air as well. The ERCS was a UHF (ultra-high frequency) communications package placed on top of a Minuteman II in place of its nuclear warhead. Crews could record an Emergency Action Message (EAM) into the ERCS and launch the missile on a lofted trajectory broadcasting the recorded EAM below to any available strategic forces. Placed on a modified EC-135 command post aircraft and thoroughly tested, the ALCS demonstrated its capability on 17 April 1967 by launching an ERCS configured Minuteman II out of Vandenberg AFB, CA. This first test launch using the ALCS and ERCS shows the original roots of ALCS. However, all Minuteman ICBM sites were modified and built to have the capability to receive commands from ALCS.

After successfully demonstrating the ALCS could launch a Minuteman ICBM from the air, ALCS achieved Initial Operational Capability (IOC) on 31 May 1967. From that point on, airborne missileers stood alert with ALCS-capable EC-135 aircraft for several decades. Over the years, ALCS operations were adapted in order to ensure the most effective use of this survivable ICBM launch capability. With ALCS now standing alert around-the-clock, the Soviets could no longer successfully launch a Minuteman LCC decapitation strike. Even if the Soviets attempted to do so, EC-135s equipped with the ALCS could fly overhead and launch the remaining Minuteman ICBMs in retaliation.

Now that ALCS was on alert, this complicated Soviet war planning by forcing the Soviets to not only target the 100 LCCs, but also the 1000 silos with more than one warhead in order to guarantee destruction. This would have required upwards of 3000 warheads to complete such an attack. The odds of being successful in such an attack on the Minuteman ICBM force would have been extremely low. What is more, the Soviets would have been faced with attacking the

remainder of the US nuclear triad, which would have made the odds even lower. Therefore, the mission of ALCS and the nuclear triad was to deter the Soviets from launching any attack in the first place. This deterrence mission continues to this day.

SAC Operations

In the late 1960s and early 1970s, ALCS crews belonged to the 44th Strategic Missile Wing (SMW) at Ellsworth AFB, SD, and 91st SMW at Minot AFB, ND. ALCS equipment was installed on various EC-135 variants to include the EC-135A, EC-135C, EC-135G, and for a short while on the EC-135L.

Starting in the mid-1970s, SAC command and control aircraft units were reorganized - establishing new units who operated ALCS-capable aircraft. These units included the 2nd Airborne Command and Control Squadron (ACCS) operating EC-135C aircraft out of Offutt AFB, NE, and the 4 ACCS operating EC-135A, EC-135C, and EC-135G aircraft out of Ellsworth. All three variants of these EC-135A/C/G aircraft had ALCS equipment installed onboard.

The 4 ACCS was the workhorse of ALCS operations. Three dedicated Airborne Launch Control Centers (ALCC) (pronounced "Al-see"), designated ALCC No. 1, ALCC No. 2, and ALCC No. 3 were on ground alert around-the-clock providing ALCS coverage for five of the six Minuteman ICBM Wings. These dedicated ALCCs were mostly EC-135A aircraft but sometimes were EC-135C or EC-135G aircraft, depending on availability. ALCC No. 1 was on ground alert at Ellsworth and during a wartime scenario, its role would have been to take off and orbit between the Minuteman Wings at Ellsworth and F.E. Warren AFB, WY, providing ALCS assistance if needed. ALCCs No. 2 and No. 3 were routinely on forward deployed ground alert at Minot. During a wartime scenario, ALCC No. 3's role would have been to take off and orbit between the Minuteman ICBM Wings at Minot and Grand Forks AFB, ND, providing ALCS assistance if needed. ALCC No. 2's dedicated role was to take off and orbit near the Minuteman ICBM Wing at Malmstrom AFB, MT, providing ALCS assistance if needed. The 4th ACCS also maintained an EC-135C or EC-135G on ground alert at Ellsworth as the West Auxiliary Airborne Command Post (WESTAUXCP) a backup to SAC's Looking Glass Airborne Command Post (ABNCP), as well as a radio relay link between the Looking Glass and ALCCs when airborne. Although equipped with ALCS, the WESTAUXCP did not



E-6B - Today's Aircraft



Current ALCS MCCC-As and ALCS Engineer

have a dedicated Minuteman ICBM wing to provide ALCS assistance to.

The 2 ACCS was another major player in ALCS operations. The primary mission of the 2nd ACCS was to fly the SAC ABNCP Looking Glass aircraft in continuous airborne operations. However, due to its close proximity in orbiting over the central US, the airborne Looking Glass provided ALCS coverage for the Minuteman Wing located at Whiteman AFB, MO. Not only did Whiteman have Minuteman II ICBMs, but it also had ERCS configured Minuteman missiles on alert. The 2 ACCS also had an additional EC-135C on ground alert at Offutt as the EASTAUXCP, providing backup to the airborne Looking Glass, radio relay capability, and a means for the Commander in Chief of SAC to escape an enemy nuclear attack. Although the EASTAUXCP was ALCS capable, it did not have a dedicated ALCS mission.

For a short time in the early 1980s, one E-4B National Emergency Airborne Command Post (NEACP) also had ALCS equipment installed onboard during a test proof-of-concept program. Originally, SAC planned for a whole fleet of E-4Bs to replace all of the existing EC-135 Looking Glass aircraft in a program known as the Advanced ABNCP. During the test trial, an E-4B, with a full SAC battlestaff and ALCS crew onboard, periodically flew Looking Glass missions out of Offutt in order to ascertain the feasibility of replacing the EC-135 fleet. In the end however, too many resources were needed and it was deemed too expensive to have the E-4B replace the EC-135. The ALCS equipment was subsequently removed from the E-4B and it continued the NEACP mission while the various EC-135s continued to perform the ABNCP and ALCC missions.

Needless to say, ALCS operations during the Cold War were the heyday for airborne missileers. Around-the-clock, there were three dedicated ALCCs on ground alert, one ALCS capable Looking Glass SAC ABNCP airborne at all times, and at least two ALCS-capable Auxiliary ABNCPs on ground alert. Airborne missileers, along with all other

Cold Warriors kept the peace for several decades.

Post-Cold War Era Operations

With the collapse of the Warsaw Pact and Soviet Union which led to the subsequent end of the Cold War, several events for ALCS unfolded. First, the 4 ACCS was deactivated along with the retirement of most of the EC-135 aircraft in the Air Force's inventory. Looking Glass continuous airborne operations ceased, SAC was disbanded, and the 2 ACCS was redesignated as the 7 ACCS. Even though times had changed and many were eager to cash in on what many called the "Peace Dividend" of the post-Cold War era, there were others that argued against these changes. In the end, it was impossible to stop the momentum of world events. However, through all the turmoil, airborne missileers operating ALCS remained on alert and vigilant, just as they always had, with the SAC and the newly formed US Strategic Command (USSTRATCOM) EC-135C ABNCPs. The Looking Glass alert posture was now a mix of both airborne and ground alert operations.

Another big change to ALCS operations occurred on 1 October 1998. On this day, the Air Force's EC-135Cs ceased to perform USSTRATCOM Looking Glass operations and was subsequently retired. The Navy's E-6B Mercury took over USSTRATCOM's Looking Glass mission and associated ALCS mission.

Originally, the E-6A was built to perform the Take Charge And Move Out (TACAMO) mission of relaying Emergency Action Messages to Navy Ballistic Missile Submarines in the Atlantic and Pacific oceans. However, when it was decided to retire the remainder of the Air Force's EC-135C fleet, the E-6A was extensively modified. A battlestaff compartment was added, additional communications equipment was installed, and ALCS equipment was installed. Due to these extensive modifications, this new variant of the Mercury was redesignated from the E-6A to the E-6B. Today, whenever a USSTRATCOM battlestaff and ALCS crew are onboard, the E-6B is known as the USSTRATCOM ABNCP.

ALCS Operations Today

Today, at least one USSTRATCOM ABNCP is on alert around-the-clock. It is postured with a full USSTRATCOM battlestaff and ALCS crew onboard to perform the Looking



GT217GM ALCS Crew

Glass mission in the event the USSTRATCOM Global Operations Center (GOC) is incapacitated. The aircraft can takeoff quickly to avoid any threat. The ALCS crew onboard still provides a survivable launch capability for the Air Force's Minuteman III ICBMs located at the three remaining missile wings located at Malmstrom, Minot and Warren. Just like its original inception, ALCS on alert today provides an adversary with an insurmountable task of trying to destroy the Minuteman ICBM force. Even if the ground Launch Control Centers are destroyed, the USSTRATCOM ABNCP can fly overhead and the airborne missileers onboard can launch the remaining Minuteman III ICBMs.

Although the ALCS resides on a Navy aircraft, the ALCS equipment is owned and operated by Air Force Global Strike Command (AFGSC). The MCCC-A is always a second or third tour assignment missileer and is from the 625th Strategic Operations Squadron (STOS) located at Offutt. The DMCCC-A is a joint USSTRATCOM position. Both ALCS crewmembers go through initial and monthly recurring ALCS training provided by the 625 STOS.

As airborne missileers continue to pull alert on the USSTRATCOM ABNCP and operate the ALCS today, they look back and remember the proud heritage that previous generations of airborne missileers have built over the last 50 years. They continue to enhance deterrence and provide a survivable Minuteman ICBM launch capability. As the Air Force moves ahead with the Ground Based Strategic Deterrent (GBSD) and associated ALCS-Replacement to replace the current Minuteman III ICBM force, airborne missileers look forward to continuing the proud ALCS legacy well into the future.

Missile Badge Birthday

In 2018, our missile badge will celebrate its 60th birthday - the first badges were presented in July 1958. The badge has undergone many changes over the last 60 years, and even partially went away for a short time. Some of the badge history is included in our main article in this issue, and Greg Ogletree's excellent history of the badge can be obtained for a donation of \$5 to AAFM, either on our web page or using the Donation Pages in this issue.

AAFM will be working with 20th Air Force and Air Force Global Strike Command to arrange a suitable recognition ceremony to celebrate this important birthday. We will keep you advised of plans.

Remember that AAFM has lapel pins for all six badge versions, as well as full size missile badge reproductions and access to current official badges, with information on our web page and in the back of this issue.

Check Dues Status at our web page at afmissileers.org, and remember to keep you mailing address and email address current with AAFM.

ICBM Reduction to 400 Missiles

Almost Complete - from the Air Force Association's Daily Report

The Air Force will complete its scheduled reduction of deployed Minuteman III intercontinental ballistic missiles (ICBM) from 450 to 400 sometime in April, the Associated Press reported. The Department of Defense planned the reduction in 2014 in order to comply with the terms of the New START nuclear forces reduction treaty made with Russia in 2010. At the time, DOD expected to complete the reduction by Feb. 5, 2018. At an inventory of 400, the ICBM missile fleet will be the smallest it has been since the early 1960s, according to AP. In January, USAF also completed the conversion of 41 B-52H bombers to non-nuclear status in order to comply with the treaty. These long-planned reductions of nuclear forces continue despite President Donald Trump's assertions last month, in an interview with Reuters, that he believes the US has "fallen behind on nuclear weapons capacity" and that he wanted to see the nation return to the "top of the pack."

Editor's Note: *The 50 silos are scattered among the fifteen Minuteman squadrons, not concentrated in at a single wing or squadron. Air Force Global Strike Command has a comprehensive program to recondition/refurbish the force beginning with these 50. A long term concern was what effect, if any, unplugging 5 or so sorties per squadron would have on a system designed to be whole. It was not difficult for wings to identify what silos were the most attractive to empty as each wing has a good number of sites that are harder to maintain due to problems like water intrusion and electrical issues.*

John Mollison's Missileer Project

The trailer for our upcoming "Short" on the Missileers can be viewed at <https://vimeo.com/207833037>

John has just finished footage at Minot AFB, ND, and is finalizing the short video. He is hoping this leads to a more detailed and comprehensive (and longer!) episode in the future. There's so much to the story that the planned 12-minute "Short" is really only the beginning, John says.

Patches for Museum Display

The Evergreen Museum in McMinnville, OR, is looking for missile wing patches for their new missile display, which AAFM has helped fund. To avoid duplication, if you have a patch to donate, contact the curator at the email address below before sending the patch, email him at terry.juran@evergreenmuseum.org

SAC Hall of Fame Inductees

The SAC and Aerospace Museum has added Gen Russel Dougherty, Mr Michael Davis, CIA, Gen Larry Welch and Mr Ed Wells as the 2017 inductees. Mr Bruce Rohde, Mr Clarence Werner and Capt Lee Seemann were inducted in to the Museum Hall of Fame. There will be a formal ceremony at the museum on 20 May 2017.

A Word from the Association

Cheyenne in 2018 - We have finalized contracts with the hotel and some of the other activities involved with our next National Meeting, which will be in Cheyenne, WY, the week of 9 October 2018. We will start with an all day board meeting on Tuesday, and begin the meeting for all with a welcome event Wednesday afternoon. Thursday will be a day at F. E. Warren AFB, and Friday will feature tours of local area attractions. Friday evening, we plan to have the band "Ground Zero" that was so popular at our Omaha meeting. Saturday will include our usual General Members Meeting and a possible tour of the former Peacekeeper missile alert facility, Q-01, that the state is turning into a Cold War museum. Registration will begin in September.

AAFM Board - early next year, we will elect or reelect part of our board, and we are looking for some good candidates. CMSgt (Ret) Joe Andrew has asked us to replace him, and we may have other vacancies. We are looking for some good senior enlisted candidates to replace Joe, and we are interested in others for possible officer board openings. You need to commit to attending National Meetings, including the day-long board meeting preceding the general activities. If you are interested, send us a short resume by email to aafm@Q.com.

End of Year, 2016 - Our finances continue to be strong, with income and expenses similar to previous years. Income for 2016 included Member Dues of \$35,327.33, Donations of \$4,520.65, Investments and interest of \$3,991.40, and we carried forward \$342.08 from 2015, for a total amount available for 2016 of \$44,181.46. Expenses included Office expenses of \$553.70, Computer costs of \$1,030.29, Printing of \$8,828.16, Postage of \$3,364.07, Subscriptions of \$230.95, Publicity/Advertising of \$261.64, Grants of \$16,042.00, Incorporation costs of \$20.00, Credit Card Fees of \$436.56, Meeting costs of \$761.39, Expenses for Exec Dir of \$469.46, for total Expenses for 2016 of \$31,998.22. Our grants were increased because we had extra funds available. We carried forward \$12,183.24 for 2017. Assets including Checking of \$6,277.60, Savings of \$1,528.30, a Paypal Balance of \$153.89, an Investment Account valued at \$66,352.34, for Total Assets of \$74,312.16. The only Liabilities are Prepaid Life and 3 year Dues of \$38,000.00, leaving us Net Assets of \$36,312.16.

The Next Executive Director - Col (Ret) Jim Warner, who has stepped in to take over at the end of 2018, and your current Executive Director met and developed a transition plan that was approved by the Board of Directors. Jim lives north of Denver in Johnstown, so he will be involved with some of the details in preparing for the 2018 National Meeting, and the two of us will work together on the specifics of the transition plan over coming year and a half.

Letters to AAFM

Address 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.

Additional Duties - As a young Lt, I was stationed on Guam as the Housing Officer from 1968-70 (I went from there to Minot as a Crew Commander). Christmas, 1968, brought the Bob Hope Tour and I was selected to be an escort officer for one of the "Gold Diggers", a dance troupe from the Dean Martin Show. For one day, I had a car and driver assigned to me and we took the young lady many places on the island and ended up with Bob Hope and other members of the show, including Neil Armstrong, who was freshly back from the moon, at General Gillam's quarters for dinner. Heady times and my favorite additional duty! *Lt Col (Ret) Roger Tollerud, AAFM Mbr No A0117, Layton, UT.*

Missile Heritage Grants - The National Museum of Nuclear Science and History is once again honored to be supported in our restoration efforts by AAFM. We will proceed with our restoration plans for our Jupiter Missile and recognize those past AAFM members as noted below in our memorial presentation. Thanks for very much to AAFM for support of our historic preservation mission here., *Jim Walther, Museum Director, National Museum of Nuclear Science & History, Albuquerque, NM.*

I would like to express my most sincere gratitude for the grant of \$1,700 from AAFM for our missile display. Once again, thank you for the generous grant. *Terry G. Juran, Curator, Evergreen Aviation & Space Museum, McMinnville, OR.*

Thank you for your support of the US Space and Rocket Center Education Foundation. Your grant of \$1,600 for a Hound Dog Display will introduce an exciting exhibit for Space Camp trainees and museum visitors. The display will preserve the heritage of USAF missiles and the people who worked with them. Students come to the Center with aspirations of one day traveling to Mars, becoming a pilot flying an aircraft equipped with cutting-edge technology, or even making scientific and engineering advances that will make all of this future technology possible. Space Camp cultivates the skills for success with a foundation of science and math education. Our programs focus on leadership, teamwork, and creative problem-solving. *Holly Ralston, Executive Director, US Space and Rocket Center, Huntsville, AL.>*

Thank you for your gift of \$2,192 to the Strategic Air Command and Aerospace Museum. I appreciate your support of the Museum's mission to preserve history and inspire learning through imaginative, innovative and inspirational programs. Your gift will help preserve and expand our missileer collection. *Dr Michael L. McGinnis, SAC and Aerospace Museum, Ashland, NE.*

Requests from Authors

David Spires, an AAFM Member and author of *On Alert: An Operational History of the United States Air Force Intercontinental Ballistic Missile Program, 1945-2011*, is now writing another book for Air Force Space Command, on the history of Air Force space launch from 1945 to the present. He is asking Missileers who also served on the space side of the Air Force launch program to contact him to share their spacelift experiences. His email address is david.spires@colorado.edu.

A well known author is writing a book about Lt Col (Ret) Gene Hambleton. You may have seen the movie *Bat-21* starring Gene Hackman who played Gene Hambleton. In the 60's and early 70's Gene was in Titan I maintenance at Mountain Home AFB, ID, in the 569th Strategic Missile Squadron (SMS), and was a commander for the 571 SMS and Deputy Commander for Operations in the 390th Strategic Missile Wing (SMW) at Davis Monthan AFB, AZ, in Titan II. The author would like to interview some of his friends and coworkers for his book. Anyone that knew him and would like to be interviewed please contact Don Boelling, email at boelling@teleport.com, and he will forward your contact information to the author."

Quebec-01 to Become Museum

An article in the Wyoming Tribune Eagle by Matt Murphy in February reported on the actions the state is taking to make the Quebec-01 missile site in northern Laramie County ready for visitors by the spring of 2018.

Deactivated in 2005, Quebec-01 was one of five facilities under the 400th Missile Squadron, the only "Peacekeeper" squadron. The US dismantled the Peacekeeper missile system but kept one missile alert facility for interpretive purposes and the Air Force offered Q-01 to the Wyoming Department of State Parks and Cultural Resources for preservation.

The site is being restored to how it looked the last day it was used in preparation for conversion to a state historic site. The Q-01 project only includes the missile alert facility itself and not missile silos scattered throughout Laramie and Platte counties that the facility controlled. It is located within a few hundred yards of Exit 39 on Interstate 25, increasing its tourism potential.

The state is anticipating the site will have between 70,000 and 80,000 visitors annually, with a potential fee of around \$7 or \$8 per person. Other sites where missile facilities are preserved have proven popular. The Minuteman Missile National Historic Site along Interstate 90 in South Dakota, for example, has had no fewer than 59,000 annual visitors since 2011 and had more than 100,000 visitors in 2015 and 2016, with a high of just less than 134,000 in 2016, according to National Park Service statistics.

Taps for Missileers

Lt Col (Ret) Bruce Ackert, an AAFM Member, served in Minuteman in the 341 SMW/MW in operations, and lived in San Clemente, CA.

CMSgt (Ret) Ronald L. Eissner, an AAFM member, served in missile maintenance in Titan I and Minuteman, in the 1 STRAD, 3901 SMES, 90 SMW and 321 SMW, and lived in Cheyenne, WY.

Col (Ret) John P. Gibeau, an AAFM Life Member, served in Minuteman in the 90, 321 and 341 SWW/MW, in ALCS in the 4 ACCS, in GLCM in the 485 TMW, at SAC and the Air Staff, and lived in San Antonio, TX.

Lt Col (Ret) Richard A. Gunst, an AAFM Member, served in Minuteman in operations in the 321 SMW, the 3901 SMES and 1 STRAD and lived in Lompoc, CA.

Lt Col (Ret) Arnold E. Hurst, an AAFM Member, served in Titan II in operations in the 308 SMW, 8 AF, 395 SMS, 4315 CCTS and 3901 SMES, and lived in Sherwood, AR.

Lt Col (Ret) Richard M. (Moody) Johnson, an AAFM Member, served in Minuteman the 321 SMW in operations, and lived in Missoula, MT.

Lt Col (Ret) Daniel T. Kuehl, an AAFM Member, served in Minuteman operations in the 321 SMW, and lived in Erie, PA. He passed away in 2014, but we were just informed recently.

Col (Ret) Hugh M. Matheson, an AAFM Member, served in Titan I, Titan II in the 390 SMW, Thor is the 4300 SS and Minuteman in the 90 SMW, and lived in Green Valley, AZ.

Lt Col (Ret) James P. McHugh, an AAFM Founding member, served in Titan I in the 569 SMS, in Titan II, in Minuteman in the 90 and 91 SMW, in the 3901 SMES and at Hq SAC, and lived in Cheyenne, WY. Jim and the AAFM Executive Director worked together during the 1962 Cuban Missile Crisis, while at Mt Home in Titan I.

John William McPherson served in Minuteman operations in the 351 SMW and lived in Cushing, OK.

Maj Gen (Ret) Thomas H. Neary, an AAFM founding member and former board member, served in Minuteman in the 90, 341 and 351 SMW, in GLCM in the 485 TMW, at SAC, Strategic Command, the Air Staff and as Commander, 20 AF, and lived in Liberty Lake, WA.

Capt (Ret) Roy Parker, an AAFM Member, served in Minuteman in operations in the 351 SMW and lived in Delray Beach, FL.

SMSgt (Ret) Alroy I. Robinson, Jr., An AAFM Member, served in Atlas in the 556 SMS and lived in Wasilla, WA.

MSgt (Ret) Richard Sutherland served in Minuteman in the 321 SMW and worked for Rockwell and Boeing in Cheyenne, and lived in Cheyenne, WY.

Mark your Calendar for 2018
AAFM's 25th Anniversary Meeting
Cheyenne, WY 9-14 October 2018

Donate to AAFM Missile Heritage and Enlisted Recognition Funds

Select logo and collector's items from below for your donation

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New Manufacture Full Size Missile and Combat Crew Badges - All six styles as above
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Challenge Coins

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Cuban Missile Crisis Commemorative Patch
 \$10 each or 3 for \$25
 Quantity _____ Total \$ _____



341 MIMS _____



321 OSS _____

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 \$10 each Total - \$ _____ (indicate choices)



SAC with Stripe _____



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Select logo and collector's items from below for your donation

AAFM CD Collections - for research and historical use only - Photos, Tech Orders, articles, publications, other data - For example, Atlas is 8 CDs of data Indicate Quantity of each - Total Amount - \$ _____

AAFM and Historical Data CD set - \$10 ____	Early and Airlaunched CD set - \$10 ____	Minuteman CD set - \$10 ____
Atlas CD set - \$10 ____	GLCM CD set - \$10 ____	Titan CD set - \$10 ____
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AAFM Historical DVD set - \$10 ____	Competition DVD set - \$10 ____	Minuteman DVD set - \$10 ____
Air Force Space DVD set - \$10 ____	Early/Airlaunched DVD set - \$10 ____	SAC DVD set - \$10 ____
Atlas and Titan DVD set - \$10 ____	GLCM DVD set - \$10 ____	All eight DVD sets - \$50 ____

SAC Memorial DVD - Dedication at Dayton - \$10 ____

AAFM2012 National Meeting at Malmstrom

The Groobers Missile Music CD - - \$10 ____

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AAFM Poetry Collection - \$10 ____

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Missileers and the Cuban Missile Crisis" - \$15 ____

1998 AAFM Book, "Air Force Missileers" - \$30 ____

Bill McKee's Cartoon Book, "Missile Business" - \$5 ____

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Missile Badge - Basic Senior Master Missile Badge with Ops designator Basic Senior Master

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Cuban Missile Crisis Painting of Malmstrom's A-06- \$15 each - Quantity ____ Total Amount \$ ____

Randy Mayse signed print for Malmstrom 25th Anniversary - TE on site - \$25 each Quantity ____ Total \$ ____

Signed/numbered Art Project Print "Countdown - 5,4,3,2,1" - \$15 each - Quantity ____ Total Amount ____

Print of Joe Andrew's painting, "The Guardians" - \$10 each Quantity ____ Total Amount \$ ____

Missile Models - Minuteman I, II and III models - available in white or real colors. Delivery time about two months \$200 each - call AAFM for details and to order or go to our web page to order.

Order and Pay on-line at the Donations/Store area on our web page

Books and Special Collectibles (pins, patches, prints, and more) also shown there

Complete the form below and send your check to AAFM to the address below - shipping included

Name:
Address:
City, State, Zip code:
Total Donation

Association of Air Force Missileers, PO Box 5693, Breckenridge, CO 80424

The New Members Page

AAFM continues to add new members every few days. For all of you who have joined recently, here is a recap of the benefits and activities for AAFM. One important facet of AAFM is that the dues have not changed since we began in 1993. Annual dues are still \$20 per year (\$5 for active duty and students), \$50 for three years (\$14 for active duty and students) and \$300 for a lifetime membership. Life membership donations can be made in up to 12 monthly installments. All dues can be paid by mail using a check or on our web page using Paypal. No other credit card options are offered. Our benefits and programs:

- A quarterly, 24 page newsletter featuring articles and stories by members, official news releases and other information. The newsletter is available in full color for those who select the electronic edition, at the end of March, June, September and December. For those who prefer the print, mailed copy, the mailings follow the release of the electronic version by about three weeks, and the issues don't have color illustrations.

- Email updates monthly or as needed, to every missileer on our contact list. Please keep AAFM advised of email address changes.

- AAFM's web page, at afmissileers.org, featuring information about all of AAFM's programs, a frequently updated "Warble Tone" section with the latest news about missileers, meetings, books and much more, including our "Taps for Missileers" list of missileers who have passed away, and more. Our page also includes access to Greg Ogletree's collection of missile patches and our entire newsletter library.

- A complete Member Directory, updated fully every three years, and with changes as they occur, available free electronically and for a small fee for a print copy.

- National Meetings every two years, always near a base with a missile-related mission.

- Occasional local area meetings at locations around the country.

- Missile Heritage Grants to museums, donated in memory of members who have passed away, to museums for missile and missile-related displays. AAFM has donated over a quarter million dollars to date to museums for displays.

- Participation in Air Force events, including the Bomb and Missile Competition and others.

- A large library of publications, videos and CDs about missile history and missile programs.

- A Donations/Store area with a wide variety of logo items, lapel pins and badges, CDs and DVDs, models, books and much more. A link is on our web page.

New Members since 1 January 2017

Gary Aue, Marvin Barrington, Kenneth Clair, Gregory Cooke, John Fisher, Kaylin Haywood, Paul Lassanske, James Mollhoff, Larry Smith, Todd Stovall

New Life Members (some transitioned from regular members) - Aaron Baum, Kenneth Bottemiller, Jephtha Clemens, Katie Grimley, Ronald Grimley, Richard Harrop, James Kowalski, Robert Meyer

Looking for Missileers - Contact us at aafm@q.com or 970-453-0500 with information if you know anything about any of these missileers.

Maj James A. Harrison II, a BMAT in the 532th Strategic Missile Squadron (SMS), McConnell AFB, KS.

James L. Mears Jr. who was a Titan II Ballistic Missile Analyst Technician (BMAT) at Little Rock AFB, AR, 374t SMS 1979-1982.

Harvey Douglas was a Captain in the 510 SMS, Whiteman AFB, MO, from 1970 - 1973.

Membership Program for Active Duty Enlisted Missileers

Thanks to the generosity of a few of our senior noncommissioned officer members, we have a special fund set aside to provide free three year memberships to active duty enlisted missileers. If you are an active duty enlisted member and don't belong to AAFM, complete the form on the facing page and return it to us, or go online to afmissileers.org and complete a registration. Just tell us by e-mail or on the form that you are a new member taking advantage of this special offer.

Association of Air Force Missileers
PO Box 5693
Breckenridge, CO 80424

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Reunions and Meetings

308 SMW Reunion 30 Year Post Deactivation, 18-20 Aug 2017, for details please see 308 SMW Facebook Group: www.facebook.com/groups/308th/ or web page at www.308smw.com. More details when available.

341 SMW/MW Maintainers - 11-12 August 2017, Great Falls, MT. See the 341 SMW Missile Maintenance Facebook page or email Lonnie267@min.midco.net.

351 SMW, Whiteman AFB - 10-11 June 2017, Warrensburg, MO, Contact Chuck Rich for details, email chuckrich2000@msn.com or call 214-535-0660. Note that dates may change due to hotel constraints - we will update the latest when we receive it on our web page.

485 TMW (GLCM) - 16-18 June 2017, Colorado Springs CO. Contact Chris "Bubba" Ayres, ClemsonAyres@gmail.com or Phone 719-650-6089.

Titan 2 PTS Personnel Reunion – 14-17 September 2017, Wichita, KS, Wyndham Garden Hotel, 221 East Kellogg, ask for Titan 2 PTS rate, 316-269-2090. Contact: Lawrence Mersberg for info, lmersberg@cox.net or call, 620-252-9168.

Association of Air Force Missileers - 9-14 October 2018, Cheyenne, WY, details coming later this year. AAFM Board meeting on 9 October, opening reception on 10 October.

Plan your unit reunion in conjunction with our National Meetings and let AAFM take care of all the details. Get your reunion notices in early so we can help spread the word. Keep in mind that a significant number of our members do not use Facebook or email, so include a telephone contact number in your announcement.

AAFM is a non-profit, tax-exempt organization under section 501c(3) of the IRS Code. The Newsletter is published quarterly, printed by Leesburg Printing, Leesburg, FL.

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