

# Air Force Missileers

Volume 27, Number 1

*"Advocates for Missileers"*

March 2019

*The Quarterly Newsletter of the Association of Air Force Missileers*

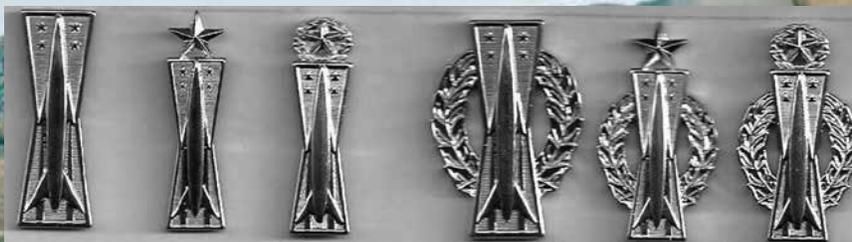
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## **Intermediate-Range Nuclear Forces - The Forces, the Treaty, the Future** **1**

<b>Executive Director's Corner</b>	<b>Inside Front Cover</b>
<b>INF Treaty, GLCM Stories</b>	<b>8</b>
<b>Victor Alert</b>	<b>11</b>
<b>MiMi Update, Cuban Missile Crisis Presentation, AAFM Finances</b>	<b>14</b>
<b>The 20th Air Force Page</b>	<b>15</b>
<b>AAFM Grants, Contacting AAFM, Letters to AAFM</b>	<b>18</b>
<b>New Members Page, Taps for Missileers</b>	<b>19</b>
<b>Donations Pages</b>	<b>20</b>
<b>Member Application</b>	<b>Inside Back Cover</b>
<b>Reunions and Meetings</b>	<b>Back Cover</b>



**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

## Executive Director's Corner

With the President's announcement regarding plans to withdraw from the Intermediate Range Nuclear Forces (INF) Treaty, we thought an issue on the deployment of the Ground Launched Cruise Missile and its related systems would be relative. Many of us had the opportunity for a short or long overseas tour before overseas deployments became an option for Missileers. I was in Florennes, Belgium, Charlie was in Comiso, Italy and others enjoyed Wusheim, Germany, Woensdrecht, Netherlands, as well as Molesworth and Greenham Common, England. We all experienced a new kind of field training at Davis-Monthan AFB, AZ! For Missileers, going overseas was a unique experience that some sought, and others were assigned. For the Warner family it was a great experience and, for me personally it provided me with my first real leadership experience, as I quickly learned the GLCM mission was all about teamwork. An operations versus maintenance attitude could easily cause a unit failure. Florennes was the first unit to pass its Initial Nuclear Surety Inspection (INSI) on its first attempt, and I attribute that all to the teamwork of those assigned.

As I mentioned last quarter, we hope to focus future issues on a combination of what we experienced and where we are headed in the future, and your ideas on what we should write about are always appreciated. Crew duty has changed, dispatch timelines have changed, and security and cyber will change even more with the deployment of the upcoming intercontinental ballistic missile (ICBM) replacement, but the roles and responsibilities of our missile force in general have remained the same - nuclear deterrence to provide support to our forces around the world. Chief of Staff of the Air Force Gen Mike Ryan said it right when he declared that our ICBM force provided the top cover for our AEF forces worldwide. Please let me know what subjects you might like to see in upcoming issues.

The changeover from one Executive Director to another doesn't happen like a change of command as there is no early on the job training and no staff to hold you up. Thankfully, Charlie was trained not only as a SAC (Strategic Air Command) warrior but as a 3901st Strategic Missile Evaluation Squadron evaluator so there are checklists to help. I have "mastered" the dues process (two months of mailings under my belt), managed my way through the Museum Grants program with a big helping hand from the Grants selection committee (6 museums receiving a total of \$15,000), and am now focused on new membership (seven applications waiting for me to get through the process. But as I have learned from many other organizational experiences, AAFM will only survive if you all stay involved and invite others to join. Remember, there is an application on the back of this newsletter that you can share with Missileers that you cross paths with. I'm trying to develop some metrics for success, but my first goal is to have more than 20 people at the next National Meeting who are younger than the Executive Director (at last year's meeting in Cheyenne my estimate was under 10).

As always, I am available by cell at 719-351-3962 or via email at [director@afmissileers.org](mailto:director@afmissileers.org).

***Jim Warner, Executive Director, AAFM***



*The AAFM Board Members with New Executive Director Jim Warner on Right*

# Air Force Missileers

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*An Early Mace on Alert*



*F-105 on Victor Alert*

## Missileers and the INF – by Col (Ret) Charlie Simpson, Executive Director Emeritus

Recently, the Intermediate-Range Nuclear Forces (INF) Treaty has been at the forefront of the news, due to concerns that one party to the 1987 treaty, Russia, was not adhering to the treaty requirements. The treaty was the result of the North Atlantic Treaty Organization’s (NATO) decision to deploy INF missiles in 1978, to counter a growing Soviet medium range missile threat from SS-20 mobile missiles being deployed in the Eastern Soviet Union. President Jimmy Carter had worked to convince the Soviets to cease to deploy these weapons, but by the late 1970s, it was obvious that, to keep the balance of power constant in the NATO region, the Soviet threat would have to be countered with deployment of US/NATO systems, the US Army’s Pershing II and the Air Force’s Ground Launched Cruise Missile (GLCM). The deployment of these two systems went forward while the diplomats tried to agree on an INF Treaty between NATO and the Soviets, but that didn’t happen until well into the deployment of these two new systems.

Over the last sixty-plus years, many Missileers have been involved in nuclear forces of this type, along with the US Army, the US Navy and a significant part of the Air Force. Some of us worked the early systems, others were part of the later INF in GLCM, some earned missile badges while working on airborne systems, and many of our members were involved with arms limitation talks, treaties and the inspection processes that resulted from some of these treaties. INF systems have been part of our deterrent posture since the late 1940s, in both Europe and the Far East. This is a brief history of those forces and systems, with emphasis on those that Air Force Missileers operated, maintained, supported and secured, including the Matador, Mace, Thor, Jupiter and GLCM.

What led to the positioning of nuclear weapons in Europe? In 1950, NATO estimated that the Russian ground forces had 175 divisions, with 30 of them stationed in Eastern Europe. The Warsaw Pact forces added another 60 divisions. There were at least 6,000 aircraft at forward bases in Eastern Europe and the East of Russia. The threat to NATO and the free world was enormous – NATO had 14 divisions of ground forces and 1,000 aircraft.

### The Early Years and the Continued Aircraft Role

The earliest deployment of nuclear armed systems to Europe involved carrier-based aircraft, starting with the AJ-1 Savage aircraft, as part of the 6th Fleet in 1951. B-29s and B-50s deployed to the United Kingdom (UK), beginning in 1948, followed by B-47s in 1953. By 1953, the Strategic Air Command (SAC) had begun rotations of B-47s to Morocco, Spain and the UK, followed by Far East deployments, under an operation called “Reflex.” These deployments allowed a shorter flight time to targets in the Soviet Union. The first nuclear-capable Air Force fighter aircraft, F-84s, arrived in England in 1952, and over the next few years, the “Quick Reaction Alert (QRA)” force grew to other bases in Europe. Over the years, the F-100, F-105, F-111, F-4, F-16 and F-15 aircraft were part of the QRA force. An excellent history by Rebecca Grant, titled “Victor Alert,” was in the March 2011 issue of Air Force Magazine. While the analysts and planners called it QRA, the aircraft sitting ready with nuclear weapons were called the “Victor Alert” force by the people operating, maintaining and supporting them. The QRA force grew to bases in the UK, France (until 1959, when France refused to allow basing for nuclear-capable aircraft), Italy, Germany and Turkey, along with aircraft in Korea. The Air Force also supported NATO nuclear-capable aircraft units, with Munitions Support Squadrons (MUNSS) in England, Germany, Italy, Belgium, Neth-



*Mace Launch from Shelter*

erlands, Greece, Turkey and Korea. These units supported host nation NATO fighter units by maintaining custody of the nuclear weapons in peacetime, keeping them ready for use by the host nations if the decision was made to use nuclear weapons in a conflict. A typical MUNSS was made up of 125-150 US Air Force personnel who received, stored, maintained and secured these weapons. In 1986, there were 20 bases in Europe and Korea with aircraft on nuclear alert and over 5,900 nuclear weapons in Europe. Many Missileers had tours at MUNSS sites, with many officers serving as commanders and staff officers over the years.

## **The Navy and INF**

During all those years, the Navy maintained a nuclear role for its carrier fleet, with a variety of aircraft, as well as developing and deploying a medium range cruise missile, The Regulus. Production of Regulus I began in 1953, and 514 of the 575 mile range missiles were produced. They were deployed aboard carriers, cruisers and submarines. By 1961, only submarines carried the Regulus. The longer range Regulus II followed, but only 54 of the 1200 mile range version were produced before cancellation in 1960. Regulus was slow and easy to defend against, and was phased out of the fleet in 1964, replaced by the new Polaris Submarine Launched Ballistic Missile (SLBM). The SLBMs joined SAC's bombers and ICBMs in what has become known as the triad, our "three legged" nuclear deterrent force. The intermediate-range role was filled in 1976 with the Tomahawk Sea Launched Cruise Missile, deployed both in conventional and nuclear roles. The nuclear-armed Tomahawk, the same basic missile as the Air Force's Gryphon (GLCM), can be launched from cruisers, destroyers and submarines, and has a range of 1,550 miles.

## **The US Army Roles in INF**

The Army became part of the tactical, or theater, nuclear force with both the atomic cannon and ground launched missiles. The first were short range, including the cannon and the Little John and Honest John missiles, with ranges less than 20 miles, and there were other short range systems. The Corporal (1955), Sergeant (1952) and Lance (1972) ballistic missiles followed, with ranges of 75 miles, with the

last fielded until 1992. The Pershing I replaced Matador and Mace beginning in 1963, with a range of about 460 miles, followed by the Pershing 1A. Pershing 1As were operated by both the US Army and the German Army, with the US missiles replaced by the new Pershing II.

## **The Early Air Force Systems**

The first Air Force intermediate-range missile deployment began in March 1954 with the positioning of the first Matador B-61 (later the TM-61) missiles in Germany, in the 1st Pilotless Bomber Squadron (PBS) at Bitburg Air Base (AB), beginning the deployment of tactical missiles to Europe, and to begin our long history of operational Air Force missiles and Missileers. Two of our members, George Mindling and Robert Bolton, wrote an excellent history of Matador and Mace. "US Air Force Tactical Missiles, 1949-1969, The Pioneers." The book is available on Amazon/com.

The 1 PBS was joined in September by the 69 PBS at nearby Hahn AB. The 1 PBS and 69 PBS had been originally activated in 1951 at Patrick Air Force Base (AFB), FL. On 14 March 1956, the PBS designation was replaced by Tactical Missile Squadron (TMS), and a number of new organizations were activated or moved from stateside locations as part of the growing Matador force in Germany. On the way to the activation of the 701st Tactical Missile Wing (TMW) at Hahn (later renamed the 38 TMW), a Guided Missile Group was first activated in the states and moved to Hahn, changed to a Tactical Missile Group (TMG) and then was redesignated as the 701 TMW. The 585, 586 and 587 TMGs were intermediate headquarters at Bitburg, Hahn and Sembach, with a number of subordinate units in each group.

This 600 mile range cruise missile was ground guided, and ground-mobile. The launch crew typically consisted of nine members, one Launch Officer, a First Lieutenant or Captain, and eight enlisted members, one Crew Chief, usually a technical sergeant, two Matador Warhead Technicians, one Flight Control Systems Technician, a Guidance Technician, two Airframe and Engine Technicians, one of whom doubled as the crane operator and the other as the launcher technician, and one Booster Rocket Technician. There were three flights per squadron, with one normally on alert, called Victor Alert. like the fighter aircraft nuclear alert. Guidance and Control teams were scattered across Germany to guide the missiles, once launched, and practiced with specially equipped T-33 jet trainers acting as simulated missiles. The missile carried a 50 kiloton warhead, and was guided by the Guidance and Control teams using the Shanicle ground based guidance system. Crews occasionally deployed to Libya for the Annual Missile Launch Operation, a recurring operational test of the Matador. The missile was also deployed to South Korea in 1958.

By 1962, the Matador was replaced by the follow-on TM-76 Mace. The Mace A had a range of 800 miles and a terrain following radar guidance system, while the B model had a range of 1,500 miles and an inertial guidance system.

Both carried 2 megaton warheads. Eventually, a force of 300 Mace missiles replaced the Matadors, and the Mace was deployed to Korea, Taiwan and Okinawa. The European Mace missiles were phased out between 1966 and 1969, with the last missiles in the Pacific around until 1971. There was one other non-US Matador unit, part of the German Air Force. This unit operated Matador until it transitioned to Pershing 1A missiles, which stayed in service until 1986.

During these same early years, the Air Force jointly operated two intermediate range ballistic missile systems in Europe - the Thor SM-75 in the UK and the Jupiter SM-78 in Italy and Turkey. Air Force personnel controlled the nuclear weapons, and the systems were operated and maintained by the host nation forces. Four Royal Air Force (RAF) bases had 15 missiles each, with the system operational from 1959 to 1963. The 1,500 mile range Thor carried a four megaton weapon. Jupiter was deployed to one base in Italy with two squadrons and 30 missiles, and 15 were deployed to a single squadron in Izmir, Turkey. Jupiter was operational from 1960 to 1963, had a range up to 1,500 miles, and also carried a 4 megaton warhead. In Turkey, US personnel initially operated and maintained the missiles because the training of Turkish counterparts was delayed.

## The Post-Mace Years, Soviet Actions and the Start of Treaty Talks

With the removal of Mace, the Air Force had no missile presence in Europe, but we were at the peak of our ICBM force of 1,054 missiles in the US by that time. Throughout the 1970s, concerns grew about the Soviet's continued deployment of offensive systems in Eastern Soviet Union, especially the new SS-20s, which the Soviets began using in 1977. These deployments began the long discussion that eventually led to the deployment of Pershing II and GLCM and the INF.

The SS-20 was a modern, mobile, intermediate range ballistic missile with three independently targetable nuclear warheads and the range to target all of Western Europe. In 1979, NATO unanimously adopted a "dual-track" strategy to respond to these deployments, with one track calling for arms control negotiations with the Soviets to restore the INF balance at the lowest possible level. The second track was to modernize NATO's INF with 464 GLCMs and 108 Per-

shing IIs, with deployment beginning in 1983. NATO also planned to withdraw 1,000 of the approximately 7,400 tactical nuclear warheads deployed in Europe and to retire an existing nuclear weapon for every new weapon deployed. This track began, with base selection and construction, missile production, personnel selection and training and all the other aspects involved with fielding two new systems fully underway by the early 1980s.

The "negotiations" track continued, with talks between the US and the Soviet Union in 1980. The US called for an equal ceiling on land-based theater nuclear missile systems. These talks recessed when President Carter left office in early 1981. In November 1981, President Ronald Reagan proposed the "zero option," the cancellation of planned INF missile deployments by the US if the Soviets agreed to eliminate its SS-4, SS-5, and SS-20 missiles. The Soviet Union instead proposed a freeze on any new deployments and subsequent cuts in existing forces. INF talks began again in Geneva. The Soviets proposed an eventual ceiling of 300 medium-range missiles and nuclear-capable aircraft in Europe for each side, with British and French nuclear forces part of that number. Then, in 1982, the aptly named "Walk in the Woods" proposal called for equal levels (75) of INF missile launchers in Europe. Since a GLCM launcher had four missiles and four warheads and each SS-20 had three warheads, the US would be allowed 300 warheads and the Soviets 225. There would be no Pershing IIs and a limit of 90 SS-20s in the Asian part of the Soviet Union. Moscow rejected the "Walk in the Woods" package in September, 1982. Negotiations continued over the next four years while GLCM and Pershing II became operational in Europe.

## Pershing II Deployment

Pershing II was a two stage, solid fueled ballistic missile with a range of 1,100 miles and carried a 4 to 80 kiloton warhead. It used an active radar guidance system with inertial guidance backup, and the reentry vehicle was maneuverable, using vanes on the body for final guidance to the target. The Pershing was a fully mobile system using a M1003 transporter/erector towed by a MAN tractor. On 22 November 1983, the West German Parliament approved Pershing II deployment, and the missiles arrived in Europe the next day. The Soviet delegation walked out of the INF negotiations in Geneva. 108 missiles were deployed, with deployment completed in late 1985. Initial Operational Status (IOS) was achieved on 15 December 1983 when A Battery, 1st Battalion, 41st Field Artillery Regiment rotated onto operational status with the Pershing II at its site in [Mutlangen](#). By 1986 all three missile battalions were deployed, stationed in West Germany at Neu-Ulm, Mutlangen and [Neckarsulm](#).

## GLCM – The BGM-109G Gryphon

We covered the history of GLCM in detail in a number of previous issues of the Association of Air Force Missileers (AAFM) Quarterly Newsletter – you can find an index of articles on our web page at <https://afmissileers.org>. A lot of AAFM members, including the author, served in



*GLCM TEL and Security*

# AAFM Newsletter

Volume 27, Number 1

March 2019



SS-20

GLCM at one of the six operational bases, in various headquarters assignments, in the test organization at Dugway in Utah, or at the schoolhouse in the 868th Tactical Missile Training Group (TMTG) at Davis-Monthan AFB, AZ. GLCM was a new, challenging experience for those of us who had served in Minuteman and Titan. GLCM was a mobile system, with each missile wing having several flights of sixteen missiles each, made up of 69 officers and enlisted members, including a number of host nation security forces. In peacetime, the flights (four transporter/erector/launchers, two launch control vehicles and 16 maintenance, security and support vehicles, sat in the GLCM Alert and Maintenance Area (GAMA), a hardened structure on each base. In periods of increased readiness, and for field training, flights would disperse into the field, dig in, erect camouflage and wait for the launch order.

The missile was an Air Force version of the Navy Tomahawk, a jet powered cruise missile with a range of 1,600 miles, a nuclear warhead of .2 to 150 kilotons and guided by a terrain contour matching system. Basing included 448 missiles in 28 flights at the 38 TMW, Wüschheim AB, West Germany, (80 Missiles), 303 TMW, RAF Molesworth, United Kingdom, (64 missiles), 485 TMW, Florennes AB, Belgium, (48 missiles), 486 TMW, Woensdrecht AB, Netherlands, (48 missiles assigned/0 deployed, 487 TMW, Comiso AS, Italy (112 missiles), 501 TMW, Greenham Common AB, UK, (96 missiles).

The agreements with the NATO countries involved differed slightly, and the basic facilities that the Air Force started with also ran the gamut. Comiso was a bombed out World War II German fighter-bomber base that had basically been dormant since the war – there were no usable buildings, with those remaining just bombed out shells. The Italian Air Force renovated a few of the old buildings, and the Air Force used a couple of smaller structures, but for Comiso, the wing

became operational in temporary portable buildings (Porta-Cabins) while construction of permanent buildings, everything from the GAMA to houses, schools and dormitories, progressed. Comiso was considered a remote, unaccompanied tour for the first few years, mostly an Italian political decision. Other bases had some usable buildings but all required significant construction for the GLCM mission. Greenham Common had been used by our Air Force before for bomber basing, and each location had some unique aspect of its history and tie-in to the local host nation forces.

Host nation security forces that were part of the deployed GLCM flight, also varied by base. At Comiso, for example, the Italian base commander had his own security forces, but the GLCM contingent was a special unit of the national police, the Carabinieri, commanded by a Carabinieri lieutenant. His operation was completely independent of the regional Carabinieri units. Comiso was also unique in that all of the equipment and personnel assigned to the first flight arrived fully trained directly from Davis-Monthan, where the flight had been preparing for several months, with field training at Fort Huachuca, an Army base east of Tucson. The flight was called “Ready Merlin” and arrived one evening in October, 1983, in a number of C-5s. The flight convoyed the 60 or so miles from Sigonella Naval Air Station to the new base, and were declared combat ready shortly after. At the other bases, flight buildup and equipping was more traditional.

The off-base training conditions also varied by base – in Sicily, the wing was limited to training only at an Italian Army facility a few miles from the base. At other GLCM bases, flights were allowed to practice deployment with somewhat more freedom in site selection and movement. Protest activity was another big factor – Greenham Common and Comiso had the most protests, since they were the first two bases to be complete. I was the first Air Force person assigned permanently to Comiso – when I arrived on 30 April 1983, I was a base commander with no base. There were two Navy officers assigned to oversee construction, a twelve man team from US Air Forces in Europe (USAFE), led by a Civil Engineering Colonel, there on temporary duty (TDY) for a few days to expedite the assembly of the PortaCabins that would house the wing for the first few months and three support officers who were assigned to the Naval Air Station to get logistics, housing and local political-military relationships off to a good start. Unfortunately, the logistics officer had not been paying attention to the contractor who was assembling the PortaCabins, and had suddenly realized a few days before I arrived that the contractor was days behind schedule, hence the TDY USAFE team was there to get him moving. The services officer hadn’t adequately planned for little things like chairs, waste baskets and lamps for the Portacabin lodging units. Four days after I arrived, the initial base leadership staff (officers and senior noncommissioned officers in support specialties) arrived on a flight to Sigonella, and the 15 of us spent a few days helping pre-

# AAFM Newsletter

Volume 27, Number 1

March 2019

pare the newly finished temporary lodging. A few food service and power production personnel, mostly Reserve and National Guard people, also arrived, and a few days later, we welcomed over 300 TDY support people to start getting the base ready for the mission, and permanent party officers and enlisted members began to arrive. We also had a large contingent of short term TDY personnel building our communications systems and working on other areas – we used many hotel rooms within 30 miles of the base to house TDY personnel for several years.

We Missileers had entered a new world – far different than life in an ICBM wing in the Dakotas, Arkansas or Wyoming. Many of us considered GLCM to be one of the best missile experiences of our careers, with challenges and opportunities most of us never dreamed of back at the US bases. We operated GLCM from these starting days in 1983 to the end of the system in 1991, when the INF Treaty brought an end to our European nuclear experience. Many Missileers stayed involved in the treaty and inspection process, but the opportunity to operate, maintain, support and secure a nuclear system in Europe was over. As we would learn over those last couple of years, our mission had a significant impact on world history and the balance of power. The Soviet Union dissolved, the Berlin Wall came down, the Warsaw Pact countries were once again independent, and much more changed. GLCM and Pershing II were major contributors to those changes to our world.

## The Treaty Negotiations and the Agreement

During the eight years between initial deployment of GLCM and the end of the system in 1991, talks continued in Geneva towards the treaty that finally brought an end to Pershing II and GLCM. During 1983, after consultation with and approval by its allies, the US reiterated its criteria for reaching agreement, including equality of rights and limits between the US and the Soviet Union, exclusion of third country (i.e., British and French) nuclear deterrent forces from any agreement, agreed-upon limits to be applied on a global basis, no shift of Soviet longer-range intermediate nuclear force missiles from the European to the Asian Soviet Union, no weakening of NATO's conventional deterrent forces and effective verification measures. Later in the year, President Reagan announced that the US and its allies would accept an interim agreement to establish equal global levels of US and Soviet warheads on INF missile launchers at the lowest possible number - between 50 and 450 warheads, with zero still the ultimate goal. The Soviet Union rejected the proposal. At a NATO meeting in Canada, the US and its allies agreed to maintain NATO's nuclear capability at the lowest level consistent with security and deterrence, and to withdraw 1,400 US nuclear warheads from Europe.

In the 1984 to 1986 period, I was the base commander at Incirlik AB, Turkey, my assignment after 14 months

at Comiso. I saw the impact of the decision to withdraw warheads from Europe firsthand, as we moved a number of weapons from storage at Incirlik back to the states. In those days, the base commander had to be present during the transport of each weapon from storage to the aircraft, and had to observe until the aircraft departed. We also had to work around the Soviet recon satellite schedules, ensuring that we did nothing in the open involving nuclear weapons when we knew Soviet eyes were watching.

In late 1984, the US and the Soviets agreed to enter into new negotiations, the Nuclear and Space Talks (NST), concerning nuclear offensive arms and defense and space issues. In early 1985, the INF was one of three items on the NST negotiations agenda (along with strategic offensive arms and defense and space weapons). At the NST, the US reaffirmed the 1983 proposals on the global elimination of INF missiles and an interim agreement on equal INF limits at the lowest possible number, but the Soviet Union still opposed INF deployment by the US. The Soviets tabled a proposed bilateral moratorium on INF deployments along with subsequent reductions that would permit Soviet INF missiles at levels equivalent to British and French strategic forces but no US INF missiles. During a visit to Paris, General Secretary Gorbachev made a counter proposal to the US proposal at the NST. He suggested a freeze on US and Soviet INF missile deployments at current levels of 243 SS-20s and 120 GLCMs, followed by the "deepest possible" reductions, and announced that SS-4s were to be phased out and some SS-20s removed from combat status. The US response was to have US and Soviet INF missile launcher deployments in Europe limited to 140, with an agreed equal number of between 420 and 450 warheads in Europe. The Soviets would reduce SS-20 launchers in Asia (outside the range of NATO Europe) by the same proportion as the reduction of launchers within range of NATO Europe.

By January 1986, the world was beginning to change, and Gorbachev announced a plan for complete nuclear disarmament by the year 2000 that included eliminating all US and Soviet INF missiles "in the European zones." Reagan responded with a plan for the elimination by 1990 of Pershing II, GLCM, and Soviet SS-20 missiles in Europe and Asia as well. The US also proposed "a comprehensive verification regime that includes the use of national technical means of verification and cooperative measures between the two governments, such as on-site inspection and data exchanges." The US and the Soviet Union agreed to equal global ceilings of 100 longer-range intermediate nuclear force missile warheads for each side, with none in Europe, and the Soviets offered to freeze its shorter-range intermediate nuclear force missile systems, pending negotiation of reductions, if US short range INF (SRINF) missile systems were "frozen" at the current level of zero. The Soviets agreed in principle to some key verification elements, but linked an INF agreement to US acceptance of constraints on the Strategic Defense Initiative.



*GLCM Destruction*

In February, 1987, Gorbachev delinked INF negotiations from resolution of SDI and anti-ballistic missile (ABM) issues, clearing the way for the INF treaty. At the Geneva negotiations, the US presented a comprehensive approach for verification of an INF agreement, to include the creation of a “baseline” inventory of existing weapons, detailed procedures for, and on-site inspection of, the destruction and dismantlement of INF systems, production, test, and deployment monitoring and regular and “challenge” on-site inspections. Talks continued as the US formally presented its “global double zero” position, calling for the total elimination of all US and Soviet SRINF and long range INF (LRINF) missile systems. Gorbachev agreed to the elimination of all INFs in Europe and Asia and all short-range missiles worldwide. West German Chancellor Kohl announced that they would dismantle their Pershing IA missiles and will not replace them with more modern weapons if the US and the Soviet Union eliminate all of their LRINF and SRINF missiles, as foreseen under the proposed INF treaty.

1987 was the significant year in the history of the INF – after almost 40 years of a NATO-Soviet face-to-face standoff, several periods of increased tensions, and numerous buildups of weapon systems on both sides, an agreement was near to drastically change the nuclear picture in Europe. In September, the US presented an Inspection Protocol detailing procedures to effectively verify compliance with an INF treaty. Key elements were: (1) The requirement that all INF missiles and launchers be in agreed areas or in announced transit between such areas during the reductions period; (2) Detailed exchange of data, updated as necessary, on the location of missile support facilities and missile op-

erating bases, the number of missiles and launchers at those facilities and bases, and technical parameters of those missile systems; (3) Notification of movement of missiles and launchers between declared facilities; (4) A baseline on-site inspection to verify the number of missiles and launchers at declared missile support facilities and missile operating bases prior to elimination; (5) On-site inspection to verify the destruction of missiles and launchers; (6) Follow-on, short-notice inspection of declared facilities during the reductions period to verify residual levels, until all missiles are eliminated; (7) Short-notice, mandatory challenge inspections of certain facilities in the United States and Soviet Union at which banned missile activity could be carried out; (8) A separate “close out” inspection to ensure that, when a site is deactivated and removed from the list of declared facilities, it has indeed ended INF-associated activity.

In September 1987, a statement by US Secretary of State George Shultz and Soviet Foreign Minister Eduard Shevardnadze said the US and the Soviet Union had agreed “in principle” to conclude the INF Treaty and hold a summit between President Reagan and General Secretary Gorbachev in the fall “to sign a treaty on intermediate-range and shorter-range missiles and to cover the full range of issues in the relationship between the two countries.” Shultz and Shevardnadze signed an agreement to establish Nuclear Risk Reduction Centers (NRRCs) in Washington and Moscow to reduce the risk of conflict between the US and the Soviet Union that might result from accidents, miscalculations, or misinterpretations. The centers would be connected by a dedicated communications link and play a role in exchanging information and notifications required under existing and future arms control and confidence-building measures agreements. The centers opened 1 April 1988. In November, Shultz announced that the deployment of GLCM would stop as soon as the INF treaty was signed. On 8 December, Reagan and Gorbachev signed the “Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles.” The treaty required elimination of all LRINF missiles (ranges of 1,000 and 5,500 kilometers) by 1 June 1991, and all SRINF (ranges between 500 and 1,000 kilometers) missiles within 18 months, 2,692 missiles would be eliminated. All associated launchers, equipment, support facilities, and operating bases worldwide would be eliminated or closed out from any further INF missile system activity.

In January 1988, the US On-Site Inspection Agency (OSIA) was established to perform the on-site inspection, escort, and monitoring provisions of the INF Treaty. It later became responsible for U.S. inspection activities under other arms control agreements. The U.S. Senate ratified the treaty by a vote of 93 to 5, and the Soviet Union ratified it the following day. The treaty went into force on 1 June 1988.

### **Meeting the Requirements of the INF Treaty**

Both superpowers began immediately complying with the requirements of the momentous decision on nuclear weapons in Europe. The US began continuous portal moni-

toring at the Soviet Votkinsk Machine Building Plant, where SS-20s were assembled, and the Soviet Union reciprocated at the Hercules Plant Number 1 at Magna, Utah, where Pershing II had been produced. The Soviet Union began eliminating missiles on 22 July 22, the US on 8 September 8.

In the next year, discussions began on short-range (less than 500 kilometers) nuclear forces (SNF) and Conventional Armed Forces in Europe (CFE). In 1990, East Germany admitted it possessed 24 conventionally armed Soviet-origin SS-23 SRINF missiles and that it was dismantling them. The Soviet Union stated that it had transferred the missiles to Bulgaria, Czechoslovakia and East Germany in 1985, before entry into force of the INF Treaty. President Bush announced the cancellation of the US follow-on-to-Lance and any further modernization of US nuclear artillery shells deployed in Europe. The president said there was “less need for nuclear systems of the shortest range” in Europe “as democracy comes to Eastern Europe and Soviet troops return home.” In late September 1990, the last US missile was removed from Europe, and Germany decommissioned its 72 Pershing IA missiles and associated launchers. As of the end of May 1991, the US has eliminated 234 Pershing II and 443 GCLM missiles, and 169 Pershing IAs. The Soviet’s had eliminated 654 SS-20, 149 SS-4, 6 SS-5, and 80 SSC-X-4 INF missiles, as well as 239 SS-23 and 718 SS-12 SRINF missiles. In September 1991, President Bush announced a major unilateral withdrawal of US tactical nuclear weapons: “I am...directing that the United States eliminate its entire worldwide inventory of ground-launched short-range, that is, theater, nuclear weapons. We will bring home and destroy all of our nuclear artillery shells and short-range ballistic missile warheads. We will, of course, insure that we preserve an effective air-delivered nuclear capability in Europe. In turn, I have asked the Soviets...to destroy their entire inventory of ground-launched theater nuclear weapons....Recognizing further the major changes in the international military landscape, the United States will withdraw all tactical nuclear weapons from its surface ships, attack submarines, as well as those nuclear weapons associated with our land-based naval aircraft. This means removing all nuclear Tomahawk cruise missiles from US ships and submarines, as well as nuclear bombs aboard aircraft carriers.”

Gorbachev responded that, “All nuclear artillery munitions and nuclear warheads for tactical missiles shall be eliminated. Nuclear warheads for air defense missiles shall be withdrawn from the troops and concentrated in central bases, and a portion of them shall be eliminated. All nuclear mines shall be eliminated. All tactical nuclear weapons shall be removed from surface ships and multipurpose submarines. These weapons, as well as nuclear weapons on land-based naval aviation, shall be stored in central storage sites and a portion shall be eliminated. Moreover, we propose that the US eliminate fully, on the basis of reciprocity, all

tactical nuclear weapons of naval forces. In addition, on the basis of reciprocity, it would be possible to withdraw from combat units on frontal (tactical) aviation, all nuclear weapons (gravity bombs and air-launched missiles) and place them in centralized storage bases.”

Reductions continued as NATO agreed to remove all but 400 to 600 nuclear bombs from Europe, and Germany announced that all SS-23 “components crucial for deployment” had been destroyed. Congress passed the Soviet Nuclear Threat Reduction Act, providing up to \$400 million to assist with the destruction of Soviet nuclear and chemical warheads. Belarus, Kazakhstan, and Ukraine agreed to transfer all tactical nuclear weapons to Russia by 1 July 1992. In July 1992, President Bush confirmed that the US had completed the worldwide withdrawals of its ground- and sea-launched tactical nuclear weapons. In November 1994, the US and representatives from Belarus, Kazakhstan, Russia, and Ukraine signed a document ensuring the continued implementation of the INF Treaty.

As missiles were removed from the GLCM bases, they were transported to Davis-Monthan for destruction, with the process closely watched by the Soviet/Russian inspectors, as the OSIA inspectors did the same for the Soviet/Russian INF missiles. The AAFM video collection includes the Davis-Monthan destruction process. The GLCM wings were closed by 1991. (38 TMW 22 August 1990, 303 TMW 31 January 1989, 485 TMW 30 September 1989, 486 TMW 30 September 1988, 487 TMW 27 May 1991, 501 TMW 31 May 1991, and the training unit at Davis-Monthan, the 868 TMTG, 31 May 1990.)

In May 1991, Carol and I ventured back to Comiso during the week of the closing ceremony. We stayed in one of the new base housing units with our hosts, the last Comiso Base Commander, Col Chuck Sterns, and his wife. Many of the new houses were never occupied, but all of the great facilities we had planned eight or more years earlier were complete, some only used for a very short time. During our stay, I drove around the local area to talk to Sicilians who had become good friends during my fourteen months at Comiso. Their biggest concern was, “What happens to the base?” The Italian Air Force had also built many new base facilities, including housing for their families, but had no mission planned for the base since there was no usable runway. The base was used at least once to house refugees from the wars in the desert, and, finally, a new runway and a grand passenger terminal were constructed and Comiso International Airport opened with flights to Europe. The military facilities on the perimeter of the new runway sat vacant, some were vandalized and all are now in poor condition. Recently, there have been discussions to tear down most of these buildings and to eventually develop the area. Comiso is home to a new 36 hole golf resort, near the Castello Donnafugata, which was also near a restaurant many of us visited during our tours in Comiso. There is an active Facebook page for Comiso vets, and at least one reunion has occurred there, with an-

other planned soon. There are similar stories and activities for veterans of some of the other GLCM bases, with the 485 TMW the most active in their reunions.

## The Recent Past and Today

The Obama Administration raised concerns about Russian compliance with the Treaty beginning in 2013, a claim Russia denied. Over the next four years, US State Department reports on “Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments” repeated the claim that Russia had violated the treaty. “The United States determined the cruise missile developed by the Russian Federation meets the INF Treaty definition of a ground-launched cruise missile with a range capability of 500 to 5,500 kilometers, and as such, all missiles of that type, and all launchers of the type used to launch such a missile, are prohibited under the provisions of the INF Treaty,” to quote the 2016 report.

In a last attempt to reach an agreement on compliance, US and Russian representatives met in Geneva. Press reports stated that Russian diplomats proposed that Russia display the 9M729 missile and demonstrate that it could not fly to INF range, while the US, in exchange, could demonstrate that the MK-41 launchers in Romania could not be converted to launch INF-range cruise missiles. The United States rejected this proposal and indicated that the only acceptable solution would be for Russia to destroy the missile, its launchers, and its supporting infrastructure. In late January 2019, Russia displayed the canister for the 9M729 cruise missile for an audience of foreign military attachés and the press, noting that, although the missile was a little longer than the similar 9M728 cruise missile, the added length did not increase the range, but was needed to house a larger warhead and guidance system. No officials from the US or NATO nations were present. US officials argued that a static display of the missile’s canister would not address questions about the missile’s range in flight. In a statement released on 1 February 2019, NATO noted that Russia had “taken no demonstrable steps toward returning to full and verifiable compliance” and that “Russia will bear sole responsibility for the end of the Treaty.” At the same time, the statement noted that the “allies are firmly committed to the preservation of effective international arms control, disarmament and non-proliferation” and “will continue to uphold, support, and further strengthen arms control, disarmament and non-proliferation, as a key element of Euro-Atlantic security.

On 2 February 2019, the US suspended its participation in the INF Treaty and notified Russia of its intent to withdraw from the treaty. Under Article XV of the treaty, the withdrawal will take effect in August. Russian President Vladimir Putin also announced that day that Russia would suspend its participation in the treaty as well. Since that time, there have been numerous articles in national publications speculating

about new Russian systems, potential actions for the US and other “predictions” for the future. It is obvious that the next few months and years will see some interesting turns in relation to the INF Treaty and the situation in Europe.

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**The INF Treaty** – by Maj Gen (Ret) Robert Parker, AAFM Board Member, AAFM MbrNo A0145, San Antonio, TX

The Intermediate-range Nuclear Forces (INF) Treaty was signed by President Reagan and Soviet General Secretary Gorbachev on 15 January 1988. This treaty eliminated an entire class of missiles (about 2700) with a range of 500 to 5500 kilometers. The Treaty was ratified by the U.S. Senate on 16 May 1987. Weapons required to be eliminated by the US were the Perishing IA and II (403) and 443 Ground Launched Cruise Missile (GLCM). The Soviets were required to eliminate 1,846 missiles including the SS-20s. The treaty established a verification regime using both National Technical Means and on-site inspections in addition to having portal monitoring facilities at a missile production plant, one in Votkinsk and one at Magna UT. The Treaty was for an unlimited duration, however; either side could withdraw if circumstances jeopardized their National interests. This is where we are today, when President Trump notified the Russians that the United States was withdrawing because of various Treaty violations by the Russians including the deployment and deploying of a new Cruise missile.

The Treaty has very strict protocols on the number of inspections, numbers of inspectors and the duration of the inspections. A normal US inspection would be: the inter-agency would decide on the location of the inspection and notification to the On-Site Inspection Agency (OSIA), which in turn would organize an inspection team, normally 10 people. The Inspection team would fly from Washington, DC, to Rhein Main AB, Germany, for briefings and site familiarization. The Russians would be given notification

of the OSIA inspection sixteen hours prior to their arrival. The US inspectors would board a C-141 for a flight into Russia, normally, Moscow, and would be met by our Russian counterparts from the Nuclear Risk Reduction Center. At that time, the Russians were told of the site to be inspected and they had a max of nine hours to get the US inspectors to the designated location. The actual inspection could last no longer than 24 hours and report would be written on the findings and signed by representatives from both countries.

The other on-site regime was the Portal Monitors, one in the Ural Mountains where the SS-20s were built and one in Magna, UT, where stages for the Pershing were built. Each side could have up to 30 inspectors on site at any one time. Because the Votkinsk facility built the SS-20 and were still manufacturing SS-25s, the US was permitted to x-ray the missiles after they left the production facility to insure they were not the banned SS-20s.

Missile elimination techniques were determined by the host country. The Russians test launched a large number while they opted to blow up the larger missiles like the SS-20s. The US opted to burn and crush the stages of the Pershing at the Longhorn Army Munitions Depot, TX, and cut up the GLCMs at Davis-Monthan AFB, AZ. All banned missiles were eliminated by 1991.

I was fortunate to have been appointed in 1991 as the second Director of the OSIA in Washington, DC. In this capacity I oversaw the implementation of several arms control treaties including: INF, START II, CFE, OPEN SKIES, Chemical, and Underground Nuclear Testing. I participated in over twenty inspections in Russia, Ukraine, Belarus, Kazakhstan, and Europe. I was at our Portal facility in the Ural mountains in February when the temperature was 20 below zero and did a perimeter check, about 3 miles, on skis. The Russians asked if I would present a piece of the last destroyed SS-20 to President Reagan which I did on 7 October 1991. The Russians had great respect for him.

## **Molesworth and the INF** – by Col (Ret) Deborah Kirkhuff, AAFM MbrNo L544, Kaysville, UT.

Miles and I arrived at RAF Molesworth, United Kingdom, in January 1987, not knowing how long we would be there, given that Intermediate-Range Nuclear Force (INF) Treaty talks were under way. The North Atlantic Treaty Organization (NATO) made the decision in 1979 to pursue deployment of Pershing II and ground launched cruise missiles (GLCM) while simultaneously negotiating for their elimination. We were part of the first wave of wing members who were going to stand up the ground launched cruise missile (GLCM) mission at RAF Molesworth, a base known in recent history for being a DRMO (Defense Reutilization and Marketing Office) facility more than anything else. The 303rd Tactical Missile Wing (TMW) was the next to last GLCM wing to activate (December 1986) as the Reagan

administration pushed to accelerate deployment to keep the pressure on Mikhail Gorbachev and the Soviet Union to continue negotiating to eliminate an entire class of nuclear weapon systems – INF. We had heard rumblings regarding the treaty throughout our training at Davis-Monthan AFB, AZ, but it didn't take on an air of reality until much later. We were simply going to England to do the jobs the Air Force had assigned us to do.

What do we remember the most about our treaty-shortened time at Molesworth? The sense of mission needed to train operators, maintainers and security forces members to perform a mission we weren't sure we were ever going to see. The wing's Initial Nuclear Surety Inspection was accelerated so we could receive two-person documents and missiles - one flight's worth - the weekend prior to the treaty signing. The 303 TMW had four flights of missiles, a total of 64 operational missiles. We only received one flight because the treaty was signed a few days later and all build-ups ceased. From the moment the INF Treaty was signed our mission became dual - to maintain Launch Control Officers (LCO), as the operators were called, cops and maintainers certified to conduct our assigned mission while getting prepared to host Soviet inspection teams slated to arrive. At the same time members of our units were being selected to be part of the US inspection teams headed to the Soviet Union to conduct inspections on their side.

The actual presence of missiles at the base were of great concern to locals who had opposed nuclear weapons in Great Britain. Protesters were often stationed around the base fence to track activities on the base. Roughly speaking, cruise missiles arrived at Molesworth in December 1987 and started departing in September 1988. As wing members we saw our Emergency War Order (EWO) mission start and conclude in less than a year. The first Soviet inspection of RAF Molesworth was on 20 July 1988 and lasted only 24 hours. They were housed at the base Rod and Gun Club, an interesting choice of billeting given Molesworth had no billeting quarters - Molesworth was purely a forward operating base and all support came from RAF Alconbury. Assigned personnel either lived at Alconbury or in the local communities. Speculation by those of us in the lower ranks at the time, was the Department of Defense didn't want the Russians housed at RAF Alconbury given some sensitive missions that operated from there as part of the 10<sup>th</sup> Tactical Reconnaissance Wing. The strangeness of permitting Soviets access to nuclear bases was summed up well by a local peace activist who lived in a small camper outside the base gate for several years who commented on the "rough" treatment suffered by a local reverend who trespassed on the installation with the "sound of festivities" coming from the Russian "hotel." She reported to the local paper on the arrival of "a coach full of civilians escorted into the USAF base at Molesworth at 2100 on 22 July by two transit vans full of Cambridgeshire uniformed police, plus assorted plain cars," and the departure at the next day "without as much

# AAFM Newsletter

Volume 27, Number 1

March 2019

fanfare.” She also commented that “how strange it seems to an English Christian priest refused ten paces into the USAF base, while the Communist Russians have the freedom of the place.”

And that was the way it was. A treaty that was the first of its kind - it eliminated an entire class of nuclear weapons - came and went in its first iteration at RAF Molesworth with a seeming lack of fanfare. Inside the wing, it was tense and nerve-wracking. I was present in the “battle staff”, monitoring the location of the inspectors everywhere they went on the base. We were glad to see them leave without a major international incident; even though inspections were under the purview of the Defense Threat Reduction Agency team chief, wing leadership keenly felt the pressure of hosting an event that could very well make or break their careers. Later, we were at Comiso AS, Sicily, and inspections had become nearly hum drum - a minor hiccup in the battle rhythm of the wing. As an interesting side note, while at Comiso, we noticed how equipment being stored to be shipped out literally disappeared over night. It was the start of Operation Desert Shield in 1990 and every vehicle that was becoming surplus at the GLCM wings was swept up and shipped to the Middle East. We even got a funny phone call in our wing plans office by a caller wanting to know “how much the launch control centers cost”.

Looking back, the INF Treaty set the stage for future arms control treaties. It showed how two enemies could agree to treaty inspection protocols in spite of their many differences and motivations. The demise of the INF Treaty speaks volumes to how much the world has changed in the 32 years since the treaty was signed and entered into force.

## **My GLCM Experience** – by Lt Col (Ret) Stuart Flood, AAFM Mbr No A1896, Layton, UT

The first realization for me - I was going to Europe, unaccompanied, with little notice. Had to make quick arrangement for my family, pack and head out. Big shock for a missile guy who did not face this reality normally.

The second thing was facing a thrown together concept with many disciplines from many commands and different wings. Flight line equipment that missile guys had to learn, central control command concepts, and dispersed operations. Functioning in dispersal operations without adequate command concepts, communication links to establish because we were running and hiding as a plan. Our operational and maintenance documents for missile operations and maintenance did not directly work and had to be re-written. Communications, Aerospace Ground Equipment (AGE) repair, Phase Dock concepts all had to be learned or relearned. But all this made it a challenging task, requiring teamwork and a can-do attitude by everyone. We did not stand up and chest thump, instead we asked how we could help. This was a bit disconcerting to long term missile

folks, a real growing experience for our career fields.

Our critical vehicles and mobile Command Centers where all parked outside. If it was freezing, we could not bring them inside to work on, because the warm moist air in the hanger would immediately ice over all surfaces including in the electronic drawers. We dispersed in extreme cold weather with a mission to hide, no heat signature (that was interesting).

I would like to tell just one story of many. The wing was preparing to deploy, part of that involved getting all the rolling stock loaded, checked out and loading the missiles into the Transporter/Erector/Launchers. It was nearing time to go when one of AGE generators failed. A young Sergeant said, “I can fix it.” The whole wings rating was riding on this one Sergeant, the command post had many opinions, but the Wing Boss said go for it. The Sergeant went to work and had it fixed in a short time and all was well. I will not name her, because she is still around, but job well done. A solid can-do attitude.

Our wing level leadership was simply outstanding and supportive. They worked with the troops at all levels and they were very approachable. The best I have worked with in my entire career, leading by example. We had one place to eat, the chow hall. This may have been one of the secrets to bonding for a common purpose. I can hardly overstate the teamwork and focuses on mission, the feeling that it was important: that is how we got it done. Everyone that had an idea was listened to. When the alert was activated, folks went straight to work to get the deployment done.

We were a nuclear weapon system close to the enemy, subject to little or no warning. We practiced as often as we could, no whimpering. We wanted to present a creditable weapon system, and we did. We had to build a base at the same time and refine procedures as we went. I truly believe the ground launched cruise missile experience made us better people, as we depended on each other.

I was not there when the Intermediate-range Nuclear Force Treaty came into being, but it had to be downer for folks on one hand and make people proud on the other.

We fielded this system in a hurry, people worked hard to publish good documents, but this system deployed so quickly that some things were inadequate, and the buildings needed for operate from, were nonexistent. It was hard-working, motivated Air Force men and women, with outstanding leaders that made this system a success.

## **Florennes GLCM Rangers** - by Maj (Ret) Tom Imburgio, Shalimar, FL. Tom was also an enlisted Marine.

I was part of that extinct species called GLCM Rangers who roamed the forests of Western Europe. I can only speak to what it was like at Florennes, Belgium, otherwise known as the best remote tour in the Air Force, but the flexible deterrence the Ground Launched Cruise Missile (GLCM) provided the North Atlantic Treaty Organization (NATO) went for all the GLCM units. We weren't second

# AAFM Newsletter

Volume 27, Number 1

March 2019

11

class citizen like our Strategic Air Command (SAC) brethren, but were welcomed by US Air Forces in Europe (USAFE), especially the F-111 community, because we took their suicide targets for them. We were a nuclear novelty Air Force unit that deployed like the Army to hold the line to keep the Soviets from invading Western Europe. We weren't always welcome, as the Greenham Common guys will tell you, but we did our jobs until the treaty sent us home, most of us to ops and maintenance time as SAC Missileers.

The GLCM concept was generic, but each wing had its own flavor on how they deployed and operated due to local conditions and each flight's ingenuity. At Florennes, we had access to multiple Belgian Army training areas, giving us flexibility to practice deploying and fieldcraft. We also had the support of our Belgian sister unit at Florennes, the 2nd Attack Wing. They taught us how to hide from aircraft and in return we provided them with targets. We would set up at Camp LeGland and they would hunt us. Many a time I remember the 42nd Recce Squadron, Mirages running box patterns search, looking for us, and when they found us, calling in the 2nd Attack Squadron Mirages to simulate strafing runs on us. When we got back they would send over the photos they took to our intel noncommissioned officer, who would brief us about how we looked from the air. A Flight became quite good at camouflaging the deployed site.

One innovation was taking a dog and dog handler out as part of the flight; the dog was always quicker to find the simulated explosives than flashlight red lenses searches at night. The dog was also good for patrolling beyond the perimeter. Anyone who met that dog in the field (Xanda, the evil one) will never forget the growl and show of long, pointed teeth. We practiced resupply and decontamination of personnel and vehicles in the field. My favorite was the shoot and scoot; where, en route, we got a exercise launch order. The column halted, set up to fire on the road, simulated a launch, then packed up and resumed down the road. All timed, of course. My least favorite memory was constantly wearing chemical gear, because it was assumed that if the Soviets attacked we would be in a chemical environment.

I had the privilege of going back to Dugway Proving Grounds, UT, for a Follow-on Operational Test and Evaluation missile shoot. Clay Melvin and I got to fire missile 926, taken from Comiso. As soon as I heard the boom, I threw open the launch control center (LCC) door and saw the missile fly out of the Transporter/Erector/Launcher (TEL). I had two great pictures, one of the missile flying out of the TEL and the other of my crew commander in his seat with his ankle to hip cast. We were both given the wing covers off that missile as souvenirs.

Thirty years later, it's ironic that one of the reasons we pulled out of the Intermediate-Range Forces (INF) Treaty was because the Russians have developed and are deploying

ground launched cruise missiles. I suppose imitation is the sincerest form of flattery. I still secretly would have loved to have challenged an SS-20 unit to a shoot off competition from road march to launch, A Flight against the unit of their choice. My guess: we'd get sixteen missiles in the air while they were still getting theirs ready to launch.



*F-16 from the 406 TFS at Hahn*

**Victor Alert** - by Maj Gen (Ret) Trulan Eyre, Castle Rock, CO, Commander of the 140th Wing, Colorado ANG, 2007-2013.

My father-in-law, your Executive Director Emeritus, Col (Ret) Charlie Simpson, recently asked if I would jot down some memories of my days in US Air Forces in Europe (USAFE) sitting Victor (Nuclear) Alert in the F-16, which we affectionately called the Viper. I am honored to do so, while adding, it was 35+ years ago, but what a great time in my career, as it was during the Reagan years when I was a young Captain, newly married and "livin' the dream". My career started in 1979 when I graduated from the US Air Force Academy. I went to Undergraduate Pilot Training (UPT) at Williams Air Force Base (AFB), AZ, had my first son there from a previous marriage, and stayed at Willy as a First Assignment Instructor Pilot (FAIP) in the T-38. The F-16 was just coming on line operationally, and 3 years later, I transitioned to the Viper and was fortunate to get my first choice assignment to Hahn Air Base (AB), West Germany in 1984. I managed to stay there for 4 years, met my wife, Charlie's daughter, overseas, and we had our son during those years. While at Hahn, I was selected to serve as the USAFE F-16 Demonstration Pilot along with being an Instructor/Evaluator in the F-16, and of course lots of travel and temporary duty (TDY) across Europe. Having grown up in Colorado, my dream was to always return home, and after Hahn, I was fortunate to have been hired by the Colorado Air National Guard (ANG) at Buckley ANG Base (now AFB) in which I served the remainder of my 37 year career, retiring in 2016.

When I went through the F-16 Replacement Training Unit (RTU) at MacDill AFB in 1983, the course was centered on learning to fly the airplane and employ it in the traditional or what we called General Purpose manner, meaning basic air-to-air, and air-to-ground tactics. Very little if any, of that "other" mission was instructed, nor was that red-guarded

# AAFM Newsletter

Volume 27, Number 1

March 2019

switch on the cockpit console discussed. The jet was a dream to fly, comfortable 30 degree reclined seat with a big old bubble canopy which made you feel like you were riding the clouds untethered, and with an engine producing more thrust than weight, we had more power than we knew what to do with. I had never been to Europe, so when the opportunity presented itself, I jumped on that Hahn assignment. In 1984, Hahn was finishing up the transition from the F-4 to the F-16, the first Vipers in USAFE, and I went straight in to Hahn's 50th Tactical Fighter Wing, the 496th Tactical Fighter Squadron (TFS), one of three Squadrons in the Wing along with the 10 and 313 TFSs, each with 24 assigned aircraft.

When you check in to a fighter unit, your first duty is to get Mission Ready (MR) as soon as possible. For me that meant an immediate trip to Incirlik AB in Turkey. The weather in Germany in the winter can be marginal, so every year we deployed for a month at a time to both Incirlik, and Zaragoza AB, Spain for flying training. It was during my MR checkout that I became familiar with our primary mission in USAFE, that of nuclear deterrence. Hahn's history dated back to the early 1950s, being built by the French with reparation monies. The 50 TFW began as a Fighter Bomber Wing in 1953, and became part of NATO, picking up the Nuclear Mission after the Cuban Missile Crisis and the beginnings of the Cold War. F-86s gave way to F-100s and later the F-4. Then it was the F-16's turn and we were part of the nuclear triad focused primarily on targets in the Eastern Bloc, based on our fuel range. The primary means of delivering the weapon was what was known as a loft maneuver. We would practice this with a small 25lb training ordnance called a BDU (bomb dummy unit) which had the same ballistics as the nuclear weapon we carried. This loft maneuver was flown from a low altitude ingress because back then, the primary threats in the Fulda Gap region were SA-3s, 4s, 6s, 7s, and 8s which we would try to defeat by terrain masking. As we approached the target typically at 540 knots indicated air speed (KIAS), we would begin a rapid pull up in the vertical, with the aircraft's computed avionic software releasing the bomb to impact the target approximately 3-4 miles away, with us turning the opposite direction to egress and avoid the detonation. The computed bombing using radar and math I can't begin to explain, but it could regularly impact the target within 30 meters using this software. In fact, bulls-eyes weren't uncommon, a vast improvement from the old manual bombing days.

After becoming MR in the Viper, I returned to Hahn and began my Nuclear Mission Checkout to become Nuke Certified in the mission. We were also under the Personal Reliability Program (PRP) which the Department of Defense defined as designed to permit only the most trustworthy individuals to have access to nuclear, chemical and biological weapons. You bet! The final prep at Hahn



*F-16 Elephant Walk*

meant not only training for a flight checkride, but also study for a Certification Board in front of a panel comprised of the Wing Director of Operations, Squadron Commanders and Weapons Officers. The Cert Board was about a two hour process, which I began with a detailed briefing of my "assigned" mission and going step-by-step on how to scramble, ingress while avoiding known real world threats, arm the bomb, attack my target and hopefully return safely. This was followed by questions from the panel on everything from aircraft mechanical issues, to seemingly endless what ifs, and concluding with an extensive debrief. Fortunate to have passed both the checkride and the Cert Board, my last step in the Cert process was to actually sit alert with an over the shoulder Instructor Pilot (IP).

The Victor Alert area at Hahn was on the opposite side of the base from our Squadron. We had dedicated Alert vehicles with lights and badges that allowed us to transit the base easily. Of course, most of us were able to procure extra Alert Badges which made day to day parking and waiting in lines at the Barber Shop or Base Exchange much more manageable. Hey, what can I say, we were the world's greatest fighter pilots! Anyway, each Squadron had 2 jets on alert meaning 6 total designated "lines", with a couple of spares prepared as well. With each Squadron having about 30 or so pilots, along with Wing personnel, it meant most junior pilots like myself would end up sitting 24 or 48 hour alert shifts about every 10 days. Along with us pilots there were Maintenance and Security Forces, and associated personnel assigned to the 24 hour Command Post on base. All across Hahn, and in fact NATO, the jets were parked in hardened shelters with giant metal blast doors. Victor Alert had these shelters as well, with a double array of fencing and guard towers surrounding the area.

I remember being dropped off for my first alert assignment. We had to bring our flying gear with us from the squadron, along with any food or personal gear we wanted to have. On that day, like many, Hahn had just had a significant snowfall and the trees and fences surrounding the area were covered with at least an inch of ice. I remember thinking,



*Eyre's Fini-flight*

“how can we fly in these conditions”, then reminding myself, if called upon, weather wouldn't be a show stopper for this mission. It was foggy and made for a surreal appearance as I approached the entry shack and began the lengthy sign in process. The joke was, once inside the gates, those 6 jets were the 3rd most powerful nuclear force in the world... perhaps not entirely true but enough to make you think seriously about what it was you were about to do. The alert facility had a pilot side separated from the maintainers side, with a common use area for eating and relaxing. We each had our own sleeping room with “clean” sheets and a pillow. I'm not sure I trusted that as I usually just slept in my flight suit on top of the bed. While sitting alert, we became intimately familiar with every line in *Caddy Shack*, *Animal House* and *Bachelor Party*, as those movies seemed to be on a never ending VHS loop, hour after hour. And, without fail, my wife would bring me a meal and hand it though the gate. As usual, she'd make enough to share.

When you're on alert, it's hard to truly relax, as at any time the horn could go off and we would have to run to our jets, put on our flying gear, and start the aircraft as quickly as possible. Each jet had a pilot and a dedicated crew chief on alert and one person was never permitted alone in the shelter....the old two man crew concept. Alert response time was measured in minutes to get airborne, of which the majority was taken up with message receiving and deciphering. Verification of the tasking message we received over the radio was in the form of what we called a “cookie,” which was a small package we would tear open, coded with letters and numbers inside we would then compare against a real tasking or exercise message. I have to admit, those first few seconds, when I would open the cookie and compare it to the message sequence always got my attention. Could this be the day?

I remember going to the Command Post one day to look at what was nicknamed the Master Blaster. Back then, it was a classified map of our US targets with a black ring drawn around all the anticipated nuclear detonations

from the entire nuclear triad. Suffice to say, Eastern Europe looked like one giant mess of black rings, and how we were to survive even getting to our targets in our little F-16s was hard to figure. But then again, as I said earlier, we were the world's greatest fighter pilots! We'd make it happen and we did indeed carry an eyepatch for obvious reasons. Of course it only protected one eye. We were on our own after that.

The bomb we carried was the B-61, with varying yields set for the particular targets we were assigned. Without getting too specific, realize the atomic bomb at Hiroshima was 15 kilotons. We were carrying bombs capable of megatons, a very sizable increase. The B-61 is a very sleek bomb we called the silver bullet. It was about 12 feet long and 13 inches in diameter, shiny silver in color with a pointed aerodynamic nose up front and sharp fins in the back. Of all the bombs over the years I have seen loaded on the F-16, it was by far the most awe inspiring, of course, but the prettiest as well.

We regularly exercise scrambled at Hahn to stay on top of the game for not only the pilots, but the entire command structure of the Wing, along with maintenance and security. Actual loaded jets in the Victor Alert area were never permitted to taxi, let alone fly on an exercise, and there was always a security force truck parked in front of the shelter with a cop and a weapon to ensure we weren't going anywhere unless actually tasked. But a lot goes into transporting and mating the B-61 to the aircraft, exercising the command and control of those weapons, and ensuring it continually “on status”, which means lots of exercises, which also means lots of sucking on rubber in chem gear, something I certainly don't miss. Almost every month at Hahn for all 4 years I was there, we had a week long local exercise called a Salty Nation, which was under the auspice of the NATO Tactical Evaluation (TAC EVAL) system. And once per year we had the NATO TAC EVAL itself, where the 50 TFW was evaluated for its Mission Readiness. Those exercises and evals started with 2 days of air defense missions, followed by 2 days of air interdiction missions, and culminating on the last day with a 72 jet, entire Wing elephant walk simulating the upload of nuclear weapons on all the Wing's jets for a mass scramble and all-out war against the Warsaw Pact. Since Hahn was an accompanied tour location, our families were often caught up in the war games as they would be driving on base and a simulated attack would occur with them having to sit for long periods as if they had dove into ditches for cover. Remember, we were only miles from the border with East Germany, and these exercises were constant across NATO back then.

I mentioned the 72 jet elephant walk. During the week long exercise, the scenario would play out that at some point NATO was overrun and it was time to go from conventional to nuclear. As such, all the flying came to a stop and the process of prepping and loading nuclear weapons took over. It would take several hours for that to occur, after which a pilot was sent to the jet to “accept” it as on status.

An evaluator would then step in to evaluate how we did and either proclaim the jet having passed or failed the loadout. Then, after all the jets were unloaded (remember, no fighter flies with a real nuke unless it's a real world event), a mass scramble would eventually occur with all 72 jets taxiing out for takeoff. This meant taxiing to the runway for a simulated takeoff, taxiing down the runway and then parking on one of the flight line aprons. The simulated takeoff time was recorded for each jet and that was the evaluation of our ability to get all 72 scrambled and simulated airborne within certain time constraints. You can imagine what a task that could be for 72 jets. After parking, we were waiting for the actual exercise launch approval, which would then start some of my fondest flying memories. As you are surely aware, fighter aircraft typically fly with wingmen in dedicated formations with prescribed roles and responsibilities. However, the nuclear mission was a single jet mission meaning all of us had different exercise targets across West Germany which we would simulate attacking. But then the real fun began, because not only were Bitburg F-15s, Spangdahlem F-4s and in fact all of NATO flying their normal day-to-day training sorties, suddenly here were 72 F-16s from Hahn zooming all over Europe. Needless to say, you had to keep your head on a swivel, as the free-for-all dog-fights were everywhere. It was incredible and at the same time superb training for combat in a world suddenly changed in a way we all hoped would never actually occur.

So those are some of my memories of Victor Alert in the 80s at Hahn AB. It was a special time in my life, and a special time in both USAFE and the USAF. There was a kinship over there amongst families and airmen alike, responsible for a mission that helped win the cold war. Thankfully it never came to fruition, but I have no doubt that if called upon, we would have stepped up and met the challenge to unconditionally and without hesitation, defend both NATO and our United States of America!

## Minuteman Missile NHS Update

The long awaited maintenance workshop is under construction and should be ready for us to move in by May. This building will allow for a permanent home for equipment used by our facility staff. It will greatly improve our capacity and ability to take care of both the Delta sites as well as the modern infrastructure.

The temporary exhibit at the South Dakota Cultural Heritage Center continues to make progress. With the assistance of the curator from Mount Rushmore, artifacts from the park's museum collection are being prepared now and will be transported to Pierre in the next month. The state museum plans an official opening of the exhibit at the end of May. This exhibit will feature many artifacts donated to the park by AAFM members.

## Cuban Missile Crisis Presentation

Col (Ret) Charlie Simpson, Executive Director Emeritus, Association of Air Force Missileers, will give a presentation of the 1962 Cuban Missile Crisis. Many of our members were involved in this crisis, and AAFM commemorated the 50th anniversary of the event at our National Meeting in Great Falls, MT, in 2012. The presentation is on Sunday, 14 April 2019, 1300, at Old Bust Head Brewing Company, 7134 Farm Station Road, Vint Hill Farms, VA 20187. The presentation is a Cold War Museum event, and Cost is \$35, including presentation; a \$7 coupon toward a craft beer draft or other drink; a \$20 contribution to the Cold War Museum; and special access to the Museum (next door) for event participants following the presentation. Tickets at the door will be \$45. To register and purchase tickets, go to the The Cold War Museum Facebook page or call the museum at 540-341-2008. You can also find a link to the event on the [afmissileers.org](http://afmissileers.org) web page. You can register by mail with a check to Cold War Museum, P.O. Box 861526, Vint Hill, VA 20187

## 2018 End Of Year Financial

Income for 2018 - Dues \$30,570.67, Donations \$5,044.92, Interest/Investments \$3,626.91. Total income for 2018 \$39,242.50, with \$7,458.36 carried forward from 2017, for a total available for 2018 of \$46,700.86. Expenses for 2018 - Office \$432.40, Computer (new laptop for new ED) \$1,014.99, Incorporation \$20, Publications \$41.95, Expenses Reimbursed \$840.23, Telephone \$132.80, Credit Card expenses (Paypal) \$202.81, Postage Admin \$1,026.96, Publicity \$3,887.66 (includes new lapel pins and internet providers), Printing Newsletter \$9,882.03, Postage NL, \$2,187.75, for total expenses for 2018 \$20,069.64, carrying forward \$26,631.22 to 2019. Assets - Paypal account \$19.26, checking \$26,944.88, savings \$1,528.78, cash \$168.00, Investments \$51,509.78 for a total of \$80,167.50. Liabilities, Prepaid dues \$45,000, set aside for 2018 Museum Grants \$10-15,000, Total Liabilities of \$55-60,000.



**AAFM Member, Former Board member and Veteran of the Warren Atlas Wing, Jim Widlar, Recently Briefed 20th Air Force Staff Members at a Commanders Call.**



## The 20th Air Force Page



*Cadets Leah Johnke and Victoria Pumilio in Front of the Agriculture Building at the University of Wyoming, Laramie, WY., Both are Interested in the Missile Operations Career Field and Hope to Become Active Duty Officers Soon.*

### **A New Generation of Missileers** - by 1st Lt Ieva Bytautaite, 20 AF Public Affairs, FE. Warren AFB, WY.

Being a college student is not easy. Juggling finances, busy class schedules and heaps of homework is often too much for many young students to handle. However, at the end of the four years of struggles and sleepless nights is a sweet reward – a college degree and a promise for a better future. For Air Force Reserve Officer Training Corps (AFROTC) cadets and University of Wyoming students Leah Johnke and Victoria Pumilio, the future is bright and exciting, but the road there is not easy.

Johnke was raised in Cheyenne, Wyo. and was introduced to a military lifestyle early on. “My stepfather was a missile officer. Through the years he was my role model, living by the Air Force core values,” said Johnke. “I saw the kind of leader he was and wanted to be a part of the same branch of service that is a family.”

From the time she was a freshman in high school, Johnke knew she wanted to follow in her stepfather’s footsteps. Just like him, she was drawn to the missile operations (13N) career field and picked it as her first career choice.

“I am very excited to be an active duty officer in my career field of choice,” said Johnke. “I’m most looking forward to having the chance to not only serve but take care of the people who I serve with.”

Johnke is currently a senior, majoring in psychology and is set to graduate and commission later this year. Besides

having the typical responsibilities of a college student, Johnke is also in charge of leading the cadet corps, planning training events, and ensuring her underclassmen are prepared to lead the detachment as they progress through cadet ranks.

Pumilio is a sophomore studying philosophy and is from Littleton, CO. Although serving in the military wasn’t always what she wanted to do, she knew her heart belonged in serving her community. “I’ve always known I wanted to serve either my country or community,” said Pumilio. “Over the years, I’ve looked at the military, police force and fire departments. However, now that I’m doing AFROTC, I know for sure that this is where I belong.” Pumilio is currently competing for a missile operations (13N) career field scholarship, which would cover tuition costs and other educational expenses.

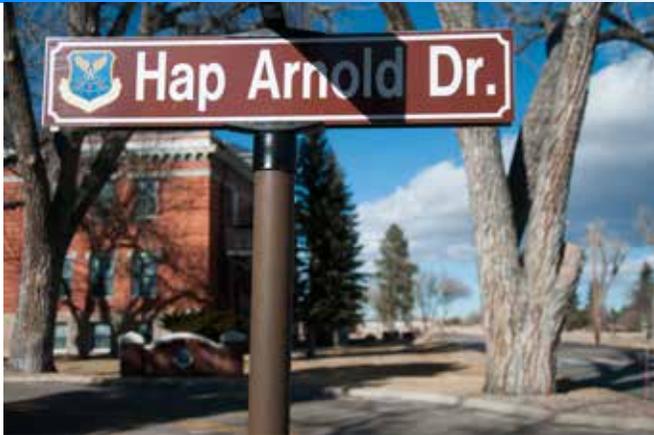
Pumilio and Johnke both enjoy visits from active duty officers, especially other missile operators, and appreciate the opportunity to learn about what it is like to become an active duty officer.

During a visit to AFROTC Detachment 940, 13 February 2019, Maj Gen Fred Stoss, 20th Air Force commander, spent several hours speaking to cadets about missile operations and the importance of Intercontinental Ballistic Missiles to national security. He also answered questions and gave the cadets advice from choosing assignments to keeping motivated. “Don’t let your mistakes define you. Dust off and press on,” said Stoss. Before concluding his speech, Stoss called the cadets “the greatest generation” and encouraged them to reach for things bigger than themselves.

“General Stoss’ visit was very insightful,” said Johnke. “And further bolstered my excitement to become a future Missile Operations Officer.”



*Cadet Leah Johnke Speaks to Capt Victoria Fort, 20 AF Aide de Camp, About What it is Like to be a Missile Operator and an Officer. Johnke is a Senior Studying at the University of Wyoming and is set to Become a Missile Operator upon Commissioning Later this Year.*



## “Hap” Arnold Drive Renaming

20th Air Force (AF) personnel held a “Hap” Arnold Drive renaming ceremony, a first of many events to be held throughout the year to celebrate the 75th anniversary of 20 AF, on FE Warren Air Force Base, WY. On 12 February 2019, the drive was renamed the drive in honor of 20 AF’s first commander, General. Henry “Hap” Arnold. (USAF photos by 1st Lt Ieva Bytautaite)



*Maj Gen Stoss, 20 AF Commander, Col Huser, 90th Missile Wing Commander, CMSgt. Farve, 90 MW Command Chief, and CMSgt Good, 20 AF Command Chief, Cut the Ribbon During the Ceremony.*



*Maj Gen Stoss, 20th Air Force Commander, and the Headquarters Staff in Front of 20 AF Headquarters*



*UH-1N at Warren*

## Helicopter Group – A Force Multiplier for ICBM Mission - by Col Joshua D. Bowman, Commander, 582nd Helicopter Group, FE Warren AFB,

Helicopter support to 20th Air Force (AF) operations has evolved considerably in the three decades the command has operated the UH-1N helicopter, but the changes over the last four years have been no less than a revolution.

In the early days of N-model operations, the three Huey flights predominantly performed capsule crew swaps and convoy support in the form of route reconnaissance. These missions were less specifically about nuclear security than overall surety - assuring continuity of operations and maintenance activities writ large. In the post-9/11 world, roles and missions changed. Department of Defense (DoD) and US Strategic Command (USSTRATCOM) directives shifted toward a security role for the command’s helicopter force, while specific capability requirements and shortfalls were revealed through successive MIGHTY GUARDIAN exercises. By the mid-2000s, the mission directives became clear - provide airlift for convoy and tactical response forces (CRF and TRF) to defend warhead movements and at-risk launch facilities.

This radical change in mission, however, did not result in a commensurate change in force structure. Although helicopter flights were administratively changed to squadrons, they were not organized, trained, equipped, structured or led to produce the Combatant Commander’s directed results. The Huey lacked the speed and endurance to meet mission demands, the fleet and the crew force were too small to establish the required 24/7 posture, there existed little traditional operations support squadron functions to support flight operations and there were no rated aviators in the chain of command between squadron and major Command (MAJCOM) commanders (sometimes between the squadron commander and Chief of Staff of the Air Force (CSAF), depending on the Air Force Specialty Code (AFSC) of the MAJCOM commander). Tactically, the helicopter squadrons



*UH-1N Convoy Escort*

did the best they could to keep pace with these new missions - and to support the Security Forces customer—but progress was predictably slow.

Things changed as 20 Air Force implemented the Force Improvement Program in 2014. Among other initiatives, the command stood up the 582nd Helicopter Group (HG) with operational control over helicopter operations, realigned its three helicopter squadrons beneath it, and activated the 582nd Operational Support Squadron (OSS) to support those units. Although these actions did nothing to rectify deficiencies in fleet size or helicopter performance, it provided many crucial benefits in the realms of standardization and tactics. The new construct provided most of the



*The New MF-139A*

normal benefits experienced in an aviation operations group - including a senior officer subject matter expert to assess and accept risk at the operational level, and the command authority to implement standard rotary wing mission-essential tasks (METs) common to the Combat Air Forces and the joint world. The tactical paradigm shift to joint METs included air assault, Command, Control Intelligence, Surveillance and Reconnaissance (C2ISR), casualty evacuation, air interdiction and close air support. Today, all squadrons are capable of performing these tasks as a multi-ship force package, day or night, in support of the Convoy Response Force (CRF), Tactical Response Force TRF) of in-field Security Forces.

Though the command's helicopter force can now perform all required USSTRATCOM tasks, fleet size and Huey performance limitations are still issues.

Fortunately, the MH-139A acquisition resolves this issue. The aircraft will meet directed performance parameters and will be fielded in sufficient numbers to provide the 24/7 coverage that the nuclear security demands. In sum, the tactical benefits instituted by the 582 HG combined with the enhanced capabilities of the MH-139A will result in a full operational capability for 20th Air Force's helicopter enterprise - the capability to provide immediate, flexible and decisive combat air power in defense of America's ICBM force.

*Col Joshua D. Bowman is the commander of the 582nd Helicopter Group, headquartered at F. E. Warren Air Force Base, WY. He commands all of the AFGSC rotary-wing forces in defense of America's strategic, land-based arsenal of ICBMs.*



*582nd Helicopter Group and the 37th, 40th and 54th Helicopter Squadron Patches*

**Keep your mailing address, email address and dues current with AAFM. Email us at [aafm@afmissileers.org](mailto:aafm@afmissileers.org), call 719-351-3962, or mail to AAFM, PO Box 652, Johnstown, CO 80534.**

## Letters to AAFM

### 2018 AAFM Grants

Six museums were the beneficiary of the AAFM's heritage grant program for 2018. Each of these individual grants was allocated for the preservation of our missile heritage. The Ronald Reagan Minuteman Missile State Historic Site in Cooperstown, ND, received \$1,000 for a Mark 11 Reentry Vehicle display, the Strategic Air Command and Aerospace Museum in Ashland, NE, received \$390 for lighting outdoor missile displays, the Atlas, Snark, Thor, and Blue Scout, the Titan Missile Museum, Green Valley, AZ, received \$3,000 to develop the story of Titan II in the Cold War, to include pamphlets for visitors and local schools, the National Museum of Nuclear Science and History in Albuquerque, NM, received \$2,800 for Snark restoration, the Museum of Aviation at Robins AFB, GA, received \$3,000 for a display stand for their MACE missile and the Indiana Military Museum in Vincennes, IN, received \$1,350 for the refurbishment of their Mace missile.

The 2018 Grants were made in memory of these AAFM members: Col (Ret) Max M. Axelsen, MSgt (Ret) Vonard Bedker, CMSgt (Ret) Van Bertram, Maj (Ret) George E. Birch, Col (Ret) Charles E. Blackburn, Lt Col (Ret) George D. Blume, Lt Col (Ret) Lucien E. Bourcier, Col (Ret) Ronald V. Buchert, Col (Ret) Martin M. Burdick, Capt (Ret) John F. Cotner, Lt Col (Ret) Wallace English, Lt Col (Ret) William D. Eva, Col (Ret) William F. Gavitt, Jr, Lt Col (Ret) Charles F. Gregory, Former SSgt Albert A. Goats, MSgt (Ret) Bobby J. Haralson, Lt Col (Ret) Casimir Harazda, Col (Ret) Anthony T. Hogan, Mrs Frank B. (Patty) Horton, Col (Ret) Thomas H. Johnson, Maj (Ret) Richard A. Johnsten, CMSgt (Ret) Walter Kundis, Former Capt Emmette D. Luter, Lt Col (Ret) Ronald E. Morin, Col (Ret) Edward W. Osborne, Former Capt Charles H. "Chuck" Rich, Lt Col (Ret) Steven A. Thomae.

### Contacting AAFM

For membership and dues, donations, mailing and email address updates, deaths of a Missileers, reunion notices, meetings, projects, grants, questions about the donations/store, general questions about AAFM and Air Force missiles and all other AAFM-related business, contact the AAFM Executive Director Jim Warner, [director@afmissileers.org](mailto:director@afmissileers.org) or 719-351-3962.

Submit AAFM Quarterly Newsletter articles, letters to the editor, questions about articles or comments or questions about the web page to the Newsletter Editor, Charlie Simpson, at [aafmmail@afmissileers.info](mailto:aafmmail@afmissileers.info), [aafmnewsletter@afmissileers.org](mailto:aafmnewsletter@afmissileers.org) or call 980-453-0500.

A former Security Forces member who competed is looking for a 1978 Olympic Arena (SAC Missile Comp) patch - if you can provide one, contact Richard Kemp, 3200 Vineyard Court, Maineville, OH 45039, email: [rkemp2@twc.com](mailto:rkemp2@twc.com).

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

**The Bomber Heritage of the ICBM Force** I just read the article and wanted to say good work! You certainly brought an interesting perspective to how the way we did business in missiles evolved from how SAC managed bombers. The article also brought back memories. I began my AF career in 1966, first on the Hound Dog system, then SRAM, then after commissioning in 1979 on Minuteman II and III and Peacekeeper. In my first couple of assignments there were still a few of the old former pilot types around. I recall my Airborne Missile Maintenance Squadron commander at Barksdale had been a B-29 pilot. By the time I got into big missiles it was as you describe: mostly maintainers and operators who had 'grown up' in ICBMs. *Lt Col (Ret) Denny Lyon, AAFM MbrNo A0937, Layton, UT.*

*The Air Force Museum Foundation Friends Journal Winter 2019 edition, includes an article by your AAFM Newsletter editor, and you can see the article at [https://afmissileers.com/Bomber\\_Heritage\\_for\\_ICBMs.pdf](https://afmissileers.com/Bomber_Heritage_for_ICBMs.pdf).*

**Movies and Nukes** - "The Day After" film clip of a Minuteman crew running the launch checklist includes deputy Tim Krause, who was on crew at Minot, in the late 1970s, when the original film was shot. Later, Tim became an Assistant Operations Officer in the 742nd Strategic Missile Squadron at Minot. He went on to become a 19xx, like many of us did after crew time, serving at Osan and retiring at Kadena. I was one of Tim's "charges" in the 742nd in the mid-80s. We both retired on Okinawa, he from the fighter command post, me from the Air Mobility Command command post, in the mid-90s. "The Day After" cribbed the footage from "First Strike," a 1979 film made by KRON TV, Defense Department and RAND Corporation. First Strike is a fascinating film, using real Air Force people working in missiles, bombers, and in other genuine locations. *Capt (Ret) Bill Sims, AAFM MbrNo A0242, San Antonio, TX.*

**Missile Journeys** - I was an enlisted Titan II E-Lab Technician at Little Rock AFB, AR, 1973-79, went to Officer Training School and amazingly enough, into Minuteman at Whiteman AFB, MO, 1980-85. (Was in Hound Dog for a year waiting to get to Titan II school.) I retired in 2001 and my current job is international deorbited debris recovery. There are only 3 of us assigned to Department of Defense (DoD) and we do all DoD international deorbited debris recovery. *Lt Col (Ret) Dan Reichel, AAFM MbrNo A2292, Melbourne, FL.*

*You can read about an interview Dan did at <http://www.spacesafetymagazine.com/space-debris/falling-satellite/retrieving-space-debris-world-interview-dan-reichel/>*

Annual dues are free for active duty enlisted and still \$20 per year (\$5 for active duty officers and students), \$50 for three years (\$14 for active duty officers and students) and \$300 for a lifetime membership. Life membership donations can be made in up to 12 monthly installments. Dues can be paid by mail with a check or on our web page using PayPal. No other credit card options are offered. Our benefits and programs:

- Quarterly newsletter featuring articles and stories by members, official news releases and other information, 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.

- Email updates to every missileer on our contact list. Keep AAFM advised of email address changes.

- AAFM's web page, at [afmissileers.org](http://afmissileers.org), featuring information about all of AAFM's programs, "Warble Tone" with the latest news about missileers, meetings, books and much more, including "Taps for Missileers." Greg Ogletree's collection of missile patches, the entire newsletter library and the on-line museum are included.

- Member Directory every three years, available free electronically and for \$10 a mailed print copy. Interim updates.

- 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 Competitions.

- 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 2019** - Samuel Epstein, Katie Fosterling, Dan Lawrence, Darrell Marshall, Brian Millburn, Nathan Plath.

New Life Members (some transitioned from regular members) - Larry Barnett, Andy Healy

## Taps for Missileers

**Former SSGT George F. Kovach**, an AAFM Member, served in Mace in the 71 TMS and lived in Newport News, VA.

**Lt Col (Ret) James (Jim) D. Luetkemeier**, an AAFM Member, served in Minuteman in the 91 SMW, in Peacekeeper, at SAC and the Joint Staff, and lived in Springfield, VA.

**SMSGT (Ret) Ben W. McAnsh**, an AAFM Member, served in BOMARC, in Titan II in the 381 SMW, in air-launched systems in the Hound Dog and drones, and lived in Carrolton, GA.

**Lt Col (Ret) Bruce "Scotty" MacIntyre** served in Minuteman in the 351 SMW and the 4315 CCTS, in GLCM in the 868 TMTG and Hq USAF, and lived in Woodland, CA.

**Lt Col (Ret) Thomas N. Resha Jr.**, an AAFM Life Member, served in Minuteman in the 321 SMW/MG/MW, in 1 STRAD, at the SWC, and lived in Colorado Springs, CO. (Died in 2013).

**MSgt (Ret) Pablo Sanchez, Jr.**, an AAFM Life Member, served in Titan II in the 308 SMW and lived in Houston, TX.

**Kevin D. Welsh**, an AAFM Member, served in Titan II in the 390 SMW and lived in Carson City, NV.

## Commemorative Coin

25th Anniversary of AAFM and 60th  
Anniversary of the Missile Badge

\$10 each. Order online at the AAFM  
Donations/Store or send a check to

AAFM, PO Box 652, Johnstown, CO 80534



## Available for Members

**2018 Membership Directory** - 90 pages with information on current, past and deceased members. Free electronically or \$10 for a mailed copy. Email [aafm@afmissileers.org](mailto:aafm@afmissileers.org) or send a check to

AAFM, PO Box PO Box 652, Johnstown, CO 80534.

**AAFM Email List** - addresses for all members with email, email [aafm@afmissileers.org](mailto:aafm@afmissileers.org) for a copy.

**Dues Status** - check the address block on your mailed copy of the newsletter - the number above your name (919 means dues expire in September 2019) or email [aafm@afmissileers.org](mailto:aafm@afmissileers.org) if you receive the electronic newsletter.

# Donate to AAFM Missile Heritage and Enlisted Recognition Funds

Use the Form Below for Mail or go On-line to [afmissileers.org](http://afmissileers.org)

## Lapel Pins



Missile Badge - Silver, 1 1/4 inch, Indicate quantity of each - **Basic Badge** \_\_\_\_\_ **Basic with Ops Designator** \_\_\_\_\_  
**Senior Badge** \_\_\_\_\_ **Senior with Ops Designator** \_\_\_\_\_ **Master Badge** \_\_\_\_\_ **Master with Ops Designator** \_\_\_\_\_  
 Space Badge - Silver, 1 1/4 inch, - **Basic** \_\_\_\_\_ **Senior** \_\_\_\_\_ **Master** \_\_\_\_\_  
**Other Lapel Pins** - Indicate quantity for each **AAFM** - \_\_\_\_\_ **SAC** - \_\_\_\_\_ **Cuban Crisis** - \_\_\_\_\_  
**Minuteman II Alerts** - 100 - \_\_\_\_\_ 200 - \_\_\_\_\_ **Master Technician** - \_\_\_\_\_  
**Any Two Pins** - \$10. **Any 6 pins** - \$25. **Any 15 Pins**, \$50. **Total Amount for Lapel Pins** \$ \_\_\_\_\_

**Full Size Reproduction Missile and Combat Crew Badges** Finish, styles and sizes - NS Non-shiny, CF chrome finish, FS full size, SS, smaller size for shirt outer wear. Mark quantity below. Not all versions available

**Basic, No Ops Designator** - NS FS \_\_\_\_\_ SS \_\_\_\_\_ **Senior, No Ops Designator** - NS FS \_\_\_\_\_ SS \_\_\_\_\_  
**Master, No Ops Designator** - NS FS \_\_\_\_\_ SS \_\_\_\_\_ **Basic, Ops Designator** - NS FS \_\_\_\_\_ CF SS \_\_\_\_\_  
**Master, Ops Designator** - CF SS \_\_\_\_\_ **Combat Crew Badge** NS FS \_\_\_\_\_   
 \$10 each - **Total Amount for Badges Ordered** \$ \_\_\_\_\_

Official Chrome Finish badges, any of the six in either full size or shirt size available by special order, prices vary.

**Challenge Coins** **AAFM** - \$10 each \_\_\_\_\_ **3 for \$25** \_\_\_\_\_ **3901 SMES Mission Complete** \$10 each \_\_\_\_\_



**ICBM Deterrence Coin** \$10 each \_\_\_\_\_  
**Missile Competition Coins** - Any \$3 for \$15.  
**Guardian Challenge Coins (AF Space Command Competitions)** 2006 \_\_\_\_\_ 2008 \_\_\_\_\_  
**Global Strike Challenge (AF Global Strike Command Comp)** 2010 \_\_\_\_\_ 2011 \_\_\_\_\_  
 2012 (Cuban Missile Crisis) \_\_\_\_\_ 2014 \_\_\_\_\_  
 Indicate Quantity for each **Total Amount for Coins** \$ \_\_\_\_\_

## Patches



**AAFM** - \$2 for \$10 \_\_\_\_\_ **5 for \$25** \_\_\_\_\_ **Subterranean Sentinels** - \$10 each \_\_\_\_\_ **3 for \$25** \_\_\_\_\_  
**Cuban Missile Crisis 2012 Commemorative** - \$10 \_\_\_\_\_ **3 for \$25** \_\_\_\_\_  
**Reproduction Patches** - Made for reunions and donated to AAFM - \$10 each  
**341 MIMS** \_\_\_\_\_ **321 OSS** \_\_\_\_\_ **6555 ATW** \_\_\_\_\_ **SAC with Stripe** \_\_\_\_\_ **50 Years Deterrence** \_\_\_\_\_  
**ICBM Deterrence** \_\_\_\_\_

**AAFM CD and DVD Collections** - for research and historical use only - CDs include Photos, Tech Orders, articles, publications, other data, DVDs are Collections of films and videos from various sources, including documentaries that AAFM advised on. \$10 for each CD or DVD set - Indicate Quantities.

**CD sets** - **AAFM and Historical Data** \_\_\_\_\_ **Early and Airlaunched Missiles** \_\_\_\_\_ **Atlas D, E, F** \_\_\_\_\_  
**Titan I and II** \_\_\_\_\_ **Minuteman I, II and III** \_\_\_\_\_ **Competitions and Peacekeeper** \_\_\_\_\_ **GLCM** \_\_\_\_\_  
**Matador and Mace** \_\_\_\_\_ **All Eight CD sets** - \$50 - \_\_\_\_\_  
**DVD Sets** - **AAFM and Historic Videos** \_\_\_\_\_ **Atlas D, E, F and Titan I and II** \_\_\_\_\_ **GLCM** \_\_\_\_\_  
**Minuteman I, II, III and Peacekeeper** \_\_\_\_\_ **Early Airlaunched Missiles** \_\_\_\_\_ **Air Force Space Videos** \_\_\_\_\_  
**SAC** \_\_\_\_\_ **Competitions** \_\_\_\_\_ **All 8 DVD sets** - \$50 \_\_\_\_\_  
**SAC Memorial DVD** - Dedication at Dayton \_\_\_\_\_ **AAFM 2012 National Meeting at Malmstrom** \_\_\_\_\_  
**The Groobers Missile Music CD** \_\_\_\_\_ **Total Amount for CDs/DVDs** \$ \_\_\_\_\_

**Publications** - **Greg Ogletree's "History of the Missile Badge"** - \$10 \_\_\_\_\_ **Bill McKee's Cartoon Book**,  
 "Missile Business" - \$10 \_\_\_\_\_ **AAFM Poetry Collection** - \$15 \_\_\_\_\_  
**AAFM 2012 Book "Missileers and the Cuban Missile Crisis"** - \$15 \_\_\_\_\_

**Prints** - **Signed/numbered Print "Countdown - 5,4,3,2,1"** - \$15 each - Quantity \_\_\_\_\_  
**Randy Mayse signed print for Malmstrom 25th Anniversary** - TE on site - \$25 each Quantity \_\_\_\_\_  
**Cuban Missile Crisis Painting of Malmstrom's A-06** - \$15 each - Quantity \_\_\_\_\_  
**Joe Andrew's painting, "The Guardians"** - \$10 each Quantity \_\_\_\_\_ **Total Amount for Publications** \$ \_\_\_\_\_  
**AAFM Golf Cap, \$15 Each** Quantity \_\_\_\_\_ **Total** \$ \_\_\_\_\_ **AAFM Brief Case, \$15 each** Quantity \_\_\_\_\_ **Total** \$ \_\_\_\_\_

Bob Wyckoff's Collection of Poems - plus AAFM's "We are Missileers"

All Poems printed on Photo Paper for Framing - \$15 \_\_\_\_\_

Minuteman I, II and III 14 inch Desk Models - in white or real colors. Delivery time about four months - \$220 each - call AAFM for details and to order or go to our web page. Limited number of MMIII in current real colors - \$175.

Order and Pay on-line at the Donations/Store area on our web page, [afmissileers.org](http://afmissileers.org) with a credit card. Books and Special Collectibles (pins, patches, prints, and more) also shown there. Or complete the form and send your payment (checks only) to Association of Air Force Missileers, PO Box 652, Johnstown, CO 80534. Shipping included - Note that the minimum order amount is \$10 due to increased cost of shipping.

### Order Information

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Total Amount of Order \_\_\_\_\_

## Association of Air Force Missileers - Membership Application

Complete and mail to AAFM PO Box 652, Johnstown, CO 80534 or log on to [afmissileers.org](http://afmissileers.org)

### Membership Categories - Free for Active Duty Enlisted

Annual (\$20) \_\_\_\_\_ Active Duty/Student (\$5) \_\_\_\_\_ Three Years (\$50) \_\_\_\_\_ Active Duty/Student (\$14) \_\_\_\_\_  
Lifetime (\$300) \_\_\_\_\_ (Payable in up to 12 installments)

Name _____	E-Mail _____
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Address _____	Phone _____
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City _____	State _____	Zip _____	Rank/Grade _____
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Signature _____	Active Duty _____ Retired _____ Discharged/Separated _____ Guard/Reserve _____ Civilian _____
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Awarded Missile Badge - Yes \_\_\_\_\_ No \_\_\_\_\_

Can AAFM release this information - only to members and missile organizations? Yes \_\_\_\_\_ No \_\_\_\_\_

List your Missile Experience including Systems and Units - e.g. - Minuteman, 90 MW, Atlas 556 SMS, Hound-Dog 319 BW, etc. Include all higher headquarters, training, test, evaluation or other special assignments.

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Specialties - Operations \_\_\_\_\_ Maintenance \_\_\_\_\_ Munitions \_\_\_\_\_ Comm \_\_\_\_\_ Facility Mgr \_\_\_\_\_ Safety \_\_\_\_\_ Civil Eng \_\_\_\_\_ Support \_\_\_\_\_  
Research/Devel/Test \_\_\_\_\_ Instrumentation \_\_\_\_\_ Security \_\_\_\_\_ Contractor \_\_\_\_\_ ( ) Other \_\_\_\_\_  
Missile Competition Participant \_\_\_\_\_ Years \_\_\_\_\_ Commander -Sqdn \_\_\_\_\_ Group \_\_\_\_\_ Wing \_\_\_\_\_ Other \_\_\_\_\_

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

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## **Reunions and Meetings**

**44 SMW/MG/MW Black Hills Bandits-** 19-21 May 2019, Hart Ranch in Rapid City, go to <http://www.blackhillsbandits.org> for details and registration.

**455/91 SMW/MG/SW/MW Operations,** 24-29 September 2019, Holiday Inn on the Riverwalk, San Antonio, TX, contact Richard and Diana Sarfin 210-818-9402 [rsarfin@aol.com](mailto:rsarfin@aol.com) or Vince and Terry Soll 210-323-5347 [justsewn@aol.com](mailto:justsewn@aol.com).

**TAC Missileers (Matador and Mace)** - 10-13 September 2019, Newport News, VA, Contact Max Butler at [maxandlois05@gmail.com](mailto:maxandlois05@gmail.com), Phone 812-307-0187, or go to [tacmissileers.org](http://tacmissileers.org).

**Association of Air Force Missileers 2020 National Meeting** - Planning underway for our next meeting in 2020. Bring your unit reunion to our National Meeting.

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 Lakes Marketing and Printing, Spirit Lake, IA.

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