

The 321st - 1964 to 1998



First Minuteman Missile Arrives
August 1965 321SMW Patch

321st Strategic Missile Wing - The Beginning

By Colonel (Ret) Charlie Simpson, Executive Director, AAFM and one of the first crewmembers in the 321SMW

On 1 November 1964, Colonel Gil Friederichs assumed command of the newly activated 321st Strategic Missile Wing (SMW), the sixth and final Minuteman wing in the Strategic Air Command intercontinental ballistic missile force. Colonel Friederichs came to the 321st with considerable Minuteman experience. He had commanded the rail-based Minuteman wing at Hill Air Force Base, was first vice commander of the first Minuteman wing, the 341SMW at Malmstrom, and the first commander of the 455SMW (later designated the 91SMW) at Minot.

The 321SMW was unique in the Minuteman force - it was the first unit with the Minuteman II missile (LGM-30F), and was the only complete wing with the new Sylvania ground system. The ground system at the earlier units was Boeing-developed, using a redundant underground cable system to connect the launch control centers (LCC) with the launch facilities (LF). The new Sylvania system used a combination of a simpler primary cable system combined with a medium frequency radio data transmission system. The LCC and launch control equipment buildings (LCEB) were larger, with significantly more displays on the two consoles and much other new equipment. One other squadron, the 564th Strategic Missile Squadron (SMS) at Malmstrom, the last unit to be activated and built, had the same ground system.

The configuration was generally referred to as Minuteman II, while the other wings that were being modernized with the LGM-30F were called Minuteman Mod. The 321SMW was WS-133B, the modernized units were
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A Word from the Association

Board Elections - Members elected two new board members in April, Joe Andrew and Bob Parker. Lance Lord and Jim Crouch were reelected. Thanks to departing board members Ed Osborne and Jim Widlar for their service - they now join our list of "Founding and Former Board Members."

Joe Andrew is a retired CMSgt now living in Woodbridge, Virginia. Joe served in Matador in Korea, in Minuteman at Malmstrom, as a 3901SMES evaluator and at SAC Headquarters. After retiring, Joe entered the field of finance, and now teaches at Webster University and works as a business appraiser and telecommunications business analyst.

Bob Parker is a retired MGen, and was commander, 20AF, responsible for all ICBM units, before retiring to San Antonio, Texas. Bob served in the 44SMW, 91SMW, 321SMW and 341SMW, 4ACCS, 431SCCTS, SAC Headquarters, the Air Staff and headed the On Site Inspection Agency.

The board elected Jay Kelley as president, Jim Burba as vice president, Dayna Castro as Secretary and Bob Kelchner as Treasurer. Officers will serve for two years, until 2000. The board members are elected for six year terms.

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AAFM Travels - During the last few months, we have had local area gatherings at Warren, San Antonio and Albuquerque. If you would like to host a local area meeting, we can provide our display, materials and information and funds for refreshments. Since we don't have chapters, this is an excellent way to get other missileers together in your area.

Letters to the Association

Address your letters to AAFM, Box 5693, Breckenridge, CO 80424, or send by e-mail to AFMISSILEERS@compuserve.com. Letters may be edited to fit - content/meaning will not be changed.

Dear AAFM

I want to thank the AAFM for your recent assistance. As you are aware, I was attempting to gather historical information on the Missileer career field, origin of the badge, and its significance to use for a retirement ceremony for Technical Sergeant Susan Boyer, who was originally a Missileer. Her retirement would not have been complete had it not been for your expedient help on providing us with all the information needed to add to her retirement program. I know she truly was proud to again see the Missileer's as part of her life as she spoke often of her successes within the career field.

Sincerely, *Jeffrey J. Kallas, MSgt, USAF, First Sergeant, 375th Civil Engineering Squadron, Scott AFB*

Dear AAFM

Reference the errata item in the August 1997 issue (page 2), we trained Glen L. Martin. They were having no luck with the triple pulse system. I showed them the design flaw in their design—poor power supply isolation. Also they needed two antennas—one on top and one on the bottom. We suggested, and Martin obtained the MC-696 (not 896) encoder.

Lee Bishop, CMSgt (Ret), Mbr A1052

Dear General Crouch,

On behalf of the entire board of Trustees, staff and volunteers, I want to express our great appreciation for the award of a \$2,500 to renovate our THOR.

We are thrilled at the financial support by the AAFM to

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allow the renovation and display of this fine example at the National Atomic Museum. As we begin our work, we will take photographs and pursue newspaper coverage of this which will be sent to you for your information. Upon completion of this project, an article about our work with your generous support will be submitted for your publication.

As our unit is prepared for display, we will indicate the AAFM support and memorialize this efforts as you have suggested. Thanks you for your support of the National Atomic Museum and the Foundation.

Sincerely, *Jim Walther, Director*

Dear AAFM

Last night, I spent a pleasant hour reading the December 1997 issue of the newsletter and enjoying the frequent tugs of nostalgia. In fact, I can associate something with every one of those "Vandenberg Dates." (I was Ops Officer at 15AF, March AFB, and we had constant interface with Vandenberg.) I hope you can work out an arrangement with Space Command folks to continue to grow. When I was executive director of the Air Force Association, we took a bold stroke to remove "War" from in front of "Veteran" in our enabling association legislation - else we would have atrophied quite rapidly if deterrence continued to be successful.

"The Greenbrier Bunker", by Fritz Bugas, was excellent. I would like permission to pass copies around to the members of my current law firm, since we frequently have "off-site" meetings, bar groups, etc. at the Greenbrier. I am confident my colleagues would enjoy (as I did) reading Bugas' article.

All the best to you and all missileers - I was honored to be among you, and proud of my "pocket rocket."

Cheers, *Gen (Retired) Russ Dougherty, CINCSAC, 1974-777, Arlington, Virginia.*

Editor's note - we sent General Dougherty several copies of the December issue for the law firm.

From your new President I want you all to know that I am humbled and honored to have been elected to lead the association which represents the world's finest missileers - you !

Having been involved in a few changes of command in my more than 37 years in the Air Force, I believe the new guy - me - should be long on listening, and short on talking on this occasion. Its important however, to extend a big thank you and well done to Jim Crouch for his leadership the past three years. I'll endeavor to sustain what Jim and Charlie Simpson have going, and also use it as a stepping stone to grow the AAFM.

In the "talk" category, the activity this past year regarding the space folks who may wish to see our association embrace their business has stirred some strong feelings. I live in Colorado Springs, and have been involved in a few conversations on the subject. Rest assured, I will stay in touch with Space Command and will represent your interest.

In the "listen" category, let me hear what's on your mind - whatever the subject. You can e-mail me at jaymarkell@worldnet.att.net, fax to 719-685-5888 or mail to 3160 Cathedral Spires Dr, Colorado Springs, CO 80904

Jim Burba and I covered the Guardian Challenge Missile and Space Competition at Vandenberg early May. Charlie Simpson will attend the inactivation of Ed Rausch's 321st at Grand Forks in early July. We all should be looking forward to attending the big meeting at Cocoa Beach in October. See you there, if not sooner!

Thanks again for the vote of confidence. Do good, confront evil and press-on !

Respectfully *Jay Kelley, LtGen USAF (Ret)*

Coming Events -

AAFM National Meeting, October 21-25, Cocoa Beach, Florida. Registration forms available from AAFM at 970-453-0500 or by e-mail (see box on page 2)

44th Bomb Group Veterans Association/44SMW - October 25-29, Savannah, Georgia. The original Ploesti Raiders welcome all missileer members of the 44th. AAFM will be there. Contact 44BGVA, PO Box 2367, Salt Lake City, UT 84110-2367.

Donate to the AAFM Missile Heritage Fund and assist in funding missile displays. Patches, lapel pins, cups, publications and other items provided to you to recognize your donation



First Minuteman Missile, LF Golf-15, August 1965

321SMW- The Beginning (Cont) - WS-133AM.

The 351SMW, the 44SMW and the first three squadrons of the 341SMW were modernized with Minuteman II missiles. The 90SMW and the 91SMW went directly from Minuteman I to Minuteman III.

The new home of the 321SMW was a four story, concrete blockhouse built for the Semi-Automatic Ground Environment (SAGE), a computerized air defense system built in the late 1950s and early 1960s. During the short life of the SAGE system, it evolved from numerous control centers like the one at Grand Forks to a few scattered across the perimeter of the United States.

The initial manning of the 321SMW consisted of many officers, noncommissioned officers and airmen who served in Atlas, Titan I and Mace units. The liquid fueled missile systems began closing in 1964, fitting perfectly with the activation schedule for the 321SMW. Combat crews in the first squadron, the 447SMS, and part of the 446SMS were, for the most part, lieutenant colonels, majors, captains and a few first lieutenants who had served less than eighteen months on an Atlas or Titan crew, or had been in maintenance in one of the earlier systems. The majority of the more senior members of the rest of the 446SMS and the 448SMS came from the cockpits of B-47s, KC-97s, B-58s and early B-52s and KC-135s. New second lieutenants made up the balance of the crew force. The same level of experience permeated the maintenance side of the 321SMW - officers, NCOs and airmen came from the earlier missile systems or from SAC aircraft units. The majority of personnel who came to the wing in the early days were not new to

SAC and its evaluations, inspections and strong demands on its people.

In mid-1965, SAC changed the makeup of the combat crew for Minuteman II. The two members of Minuteman I crews at the other wings were allowed to alternate "rest" periods while on duty in the LCC. The Weapon System Safety Group at Kirtland determined that both members of Minuteman II crews must be alert and awake at all times. SAC's solution was the three man crew, consisting of the Missile Combat Crew Commander (MCCC), the Deputy Missile Combat Crew Commander (DMCCC) and the new Alternate Missile Combat Crew Commander (AMCCC). At Grand Forks, all but a couple of the MCCCs were lieutenant colonels and majors, the AMCCCs were senior or mid-range captains and the DMCCCs were young captains or lieutenants. The AMCCC was trained and evaluated as both commander and deputy. During alert tours, the crew members would alternate duty below ground and rest topside during a 24 hour alert tour. The AMCCC spent half of his time at the command console, and half at the status console, paired with either the DMCCC or the MCCC.

The first year at Grand Forks was a major test for the people in operations, maintenance, communications, security and support - and difficult for the Site Activation Task Force (SATAF) and the contractors. Like any new system, the Wing 6 variation of Minuteman had teething problems. The computers in the LCCs were new technology. Problems like warped memory disks, new **3901SMES Evaluator, 321SMW Technician** (continued page 5)



321SMW- The Beginning (Cont) - backup power systems and new data transmission techniques kept the crews and maintainers busy. A serious problem in reliability of the new NS-17 missile guidance set required a massive effort by the Air Force and Autonetics to overcome. Missile maintenance teams would place an NS-17 on a missile one day, and remove and replace it with another a day or two later. The problem was so severe many missiles were not operationally ready, supply (NORS), because repaired or new guidance sets were not immediately available. The constant changing of guidance systems put an enormous workload on the missile maintenance teams, often in the hostile environment of extreme cold and wind. Open LFs meant security forces scattered at sites all over eastern North Dakota. The missile crews had no problem with boredom, since a number of LFs had maintenance teams entering and departing every day.

In "A Brief History of Minuteman Guidance and Control", a March 1995 publication from Autonetics, the author states "After struggling with these problems through much of 1966 it became evident that precipitous actions were required by both the Air Force and Autonetics in order to resolve this exceedingly complex problem. The two major thrusts were: Accelerated Build-Up to Enhanced Output at the AF's repair facility (AGMC Depot, Newark Air Force Station) and MMII G&C Recovery Program - primarily at Autonetics, started January 1967. In addition, SAC agreed to temporarily remove some silos/missiles from operational status simply to provide a bit of breathing room..."

The situation improved dramatically over the next few months - and everyone who served in Minuteman is aware of the high reliability of guidance systems as the systems matured.

In 1966, the Minuteman Education Program (MMEP) began at Grand Forks. The program offered a master of science degree in industrial management, requiring about two and a half years to complete. The majority of the crew force enrolled, and classes were part of the normal alert/training/off duty cycle for crews. The ninety three man crews worked an eight day cycle, with two days of MMEP classes followed by six days that normally included two 24 hour alert tours, two Combat Crew Rest and Relaxation (CCRR) days, and one or two

days of training. With this work cycle, the "off duty" portion, with the exception of the two partial CCRR days (the day a crew returned from alert) was almost non-existent for crew members enrolled in MMEP.

In late 1968, SAC revised the makeup for the Minuteman II crew force. The three man crew was replaced by a two man crew, and the crew was still not permitted to "rest" in the LCC. Therefore, it took two crews for each site for continuous coverage. Each wing experimented with various schedules, varying between 36 and 48 hours in length. For most of the time, Grand Forks used a 40 hour tour. One crew would report for pre-departure briefing at 0730, and change over with the duty crew at about 1000. That crew would depart for the base, since its 40 hour tour was over. A second crew had pre-departure at 1530, replacing the crew on duty at 1800. The crew that had just completed eight hours on duty would rest topside for eight hours. Each crew spent three eight hour periods below ground on alert and two eight hour periods in the launch control facility (LCF) sleeping or resting. The "morning" crew would complete its 40 hour tour at about 0200 of the second day, and return to the base in the dead of night. If the North Dakota weather was really bad, the crew would remain at the site until released, in the event that replacement crews could not depart the base. One of the real joys of the 40 hour tour was the arrival at the missile building at 0400 to discover that someone had unplugged your engine heater and plugged his in, leaving the off going crew member with a car that wouldn't start in the 40 below North Dakota night.

Beginning in 1970, the Minuteman II missiles at Grand Forks were replaced by the new Minuteman III. Many 321SMW missiles were moved to the 44SMW, which was undergoing modernization from Minuteman I. The Minuteman III missiles remained for up to 28 years - moving west to Montana to replace the Minuteman II missiles in the 341SMW.

When SAC was inactivated and ICBMs moved to the new Air Combat Command, the 321SMW became the 321st Missile Group. A year later, the ICBM force was moved to Air Force Space Command, and the missile units that would continue, the 90th, 91st and 341st, were redesignated as Missile Wings (MW). Since the

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321SMW- The Beginning (Cont) - 321MG was in the early steps of inactivation, its designation was not changed, and when the other three units became Space Wings in 1997, only one unit retained a "Missile" unit designation - the 321MG.

On 2 July 1998, the 321MG joins two other Minuteman units, the 44th MW and the 351MW, as organizations that had accomplished their mission and gone into history. The many outstanding men and women who served as part of the 321SMW and 321MG had lived up to the original motto - "We Can Do It" - they had provided strategic nuclear deterrence for 34 years, and had truly won the Cold War.



LtCol John Darr in his SATAF Office, 1965, Grand Forks

THE GREAT WING VI AIRLIFT

A Short Story From the Annals of SATAF

By LtCol (Retired) John W. Darr, AAFM member number A0193. John had several jobs in the Site Activation Task Force (SATAF) at Grand Forks when the 321SMW opened, including SATAF commander, and commanded the 446SMS and 448SMS

The year was 1965. With a typically-frigid North Dakota winter approaching, things were more-or-less on schedule for the turnkey of Golf Flight, the very first flight of ten operational Minuteman II missiles, to the 321SMW. It was important that turnover occur sometime during the month of October. Long hours of hard work, dedication, and no small amount of sweat were demanded of countless unsung heroes, both from the 321SMW and from SATAF. The latter unit, an element of Air Force Systems Command, comprised members of

the U.S. Army Corps of Engineers, several other Air Force Commands, and civilian contractors - Boeing, Autonetics, Sylvania, TRW, et al. Colonel Jack Dacus was SATAF Commander; Colonel Gilbert Friederichs commanded the 321SMW. I was SATAF honcho for weapon system engineering - whatever that was!

In those long-ago days, Douglas C-133 Cargomasters provided normal delivery of missiles from Hill AFB, Utah; however, with all the activity going on in Southeast Asia, Grand Forks AFB had yet to experience its first air delivery. Most missiles arrived by rail, with some coming via highway. The Lockheed C-141 StarLifter had only recently entered the inventory, and was not yet qualified to airlift Minuteman.

The Minuteman II missile, then a brand-new and greatly advanced member of America's arsenal, employed exciting new technology, especially in the on-board computer in the "can," or Guidance & Control unit. As should have been expected, we experienced our full share of growing pains in putting those first missiles on alert. Both cans and missiles frequently failed to attain - and maintain - "contractor alert" status.

Our failure rate in those early days strained the supply system. As we were to later learn, we were rejecting what in good faith we believed to be faulty missiles when, in many cases, it was the can that was failing to perform properly. We found ourselves replacing cans and missiles at a breakneck rate. With every replacement, the promised delivery date came into greater question.

It was soon apparent that we needed to employ some creative measures in order to avoid the calamity - no, the disaster - of late delivery. The result: a chain of events which occasions the retelling of the following story.

I went to our deputy commander, Lt Col Dexter Baker, to explain our plight. Could he please do something - anything, I pleaded - about getting airlift support? Anything less would be inadequate to our needs. If something pretty dramatic didn't happen, there was no way we'd make our delivery date.

Dex, undaunted by run-of-the-mill problems, let alone challenges of this magnitude, immediately picked up his phone and called a friend. His friend, from World War II B-24 days in the Pacific, was then at MAC Headquarters - Military Airlift Command. The problem, Dex

(continued page 7)

Airlift (*cont*) - clearly explained, earned the response that the friend "... would look into the matter."

Look indeed! Within a few days we had more C-133s - each with a Minuteman II in its belly - than could find parking space. We were absolutely inundated with missiles! Again I sought the assistance of Colonel Baker; the time had come to stem the tide. Would he please call his friend and let him know we truly appreciated his response? However, it was time to quit helping! We were full-up.

Without a moment's pause, Dex called his friend. After expressing our gratitude for his magnificent response to our earlier problem, Dex provided the coup de grace, "Good God, old buddy! I asked for a drink, and you gave me a hose in the face!"

With that our missile delivery problems were solved, although I cannot recall ever again seeing a C-133 at Grand Forks AFB. The C-141 was shortly thereafter qualified to deliver the birds; the reliability of the cans and missiles improved greatly, and as time went on we rejected fewer and fewer of each.

Back in those early days of Wing VI we faced a great number and variety of problems. I was fortunate to have participated in a few of the solutions. Most however, lacked the humor - and efficiency in resolution - of this one!

Oh, one more thing! Golf Flight turned over to the 321SMW on the very last day of October, 1965 - Hallowe'en!

C-133 Delivers Minuteman II to Grand Forks, 1965



Charlie Belt and Ted Tower, 321SMW, 1966

Grand Forks - the First Crews

By Colonel (Retired) Charlie Simpson, Executive Director, AAFM

I arrived at Grand Forks and the 321SMW in May, 1965, having spent almost four years in Titan I maintenance at Mountain Home AFB, Idaho, as job control and site maintenance officer. When the SAC personnel team visited Mountain Home shortly after Atlas and Titan I phase-out was announced in 1964, I asked for an assignment in Titan II maintenance, with Davis Monthan my first choice. SAC had a different plan for me and hundreds others. The sixth and last Minuteman wing was being manned, and SAC needed lots of crew members in January, 1965, I found that my new home would be North Dakota. SAC decided that officers who had less than 18 months of Atlas or Titan crew time would get four years in the Minuteman ops.

I wasn't the only Mountain Home vet to head north - many of the noncommissioned officers that I worked with in maintenance joined the 321SMW maintenance force, and several other officers joined me at Grand Forks.

We were in a playful mood the last few months in the 569SMS. Our missiles were gone and we had little to do. A master sergeant who worked with me, Herb Vice, and I decided to play a little trick on our former deputy commander for maintenance, now the vice commander of the squadron. Lieutenant Colonel G. B. Jannot was a very senior former B-29 pilot and aircraft maintenance officer who helped open and close the 569SMS. He didn't yet have an assignment, so Herb and I invented one for him. We convinced a lieutenant friend in person-

(continued page 8)

First Crews (Cont) - nel to provide a "notice of assignment" form, and left it in Jannot's in basket with an assignment to the 321SMW. The lieutenant in personnel got the biggest chewing out - but Herb and I got ours, too. Imagine our surprise when Colonel Jannot got a genuine notice a week later, to Grand Forks. I think he blamed Herb and me for years for this assignment.

I traveled to North Dakota in early May to take one car and check on housing. It was warm, sunny and green, and when I returned to Mountain Home to prepare for my move, I told Colonel Jannot how great the weather was. Three weeks later, in the 321SMW parking lot, I got another Jannot chewing out - he was in a short sleeve 1505 shirt, his jacket packed away, and I was in my parka, standing in six inches of snow. Jannot was the chief of the operations branch in the 446SMS in the days when we had full colonel squadron commanders, and he later became commander when the grade level was reduced. He left missiles in 1969, heading off to war as a C-123 pilot in Viet Nam.

The first few months at Grand Forks was slow , with no missiles and no missile sites. I was given the job of 447SMS commanders call officer, developing the agenda and preparing briefings for the monthly calls. All of us had jobs - drill and ceremonies officers (we had parades every two weeks), base beautification officers and other "keep-busy" jobs.

I became an Alternate Missile Combat Crew Commander on crew N-069, with Major Joe Lear as commander and Lieutenant Gary Grimm as deputy. Joe, a navigator, had served on an Atlas F crew at Schilling, and Gary on an Atlas E crew at Forbes. In September, we went to Chanute for Minuteman II training. In those days, the Air Force insisted that we know everything about the missile and facilities, so we spent four weeks coloring water and sewage flow charts, tracing circuit diagrams and learning how the electrons got from the button we pushed to the missile in the silo.

Next came Vandenberg and Operational Readiness Training, three weeks of Emergency War Order (EWO) training and three weeks in the Missile Procedures Trainer (MPT). Since I was the junior AMCCC, I ended up with my next junior counterpart on the choice shift, midnight to 0600, six days (nights?) a week. I never did figure out when to sleep, since everybody else was



General Holloway presents Blanchard to 321SMW, 1969
asleep when I was in the MPT and awake when I was trying to sleep.

In November, we returned to the wing and local upgrade training - more EWO, more classroom and more MPT sessions. Three weeks later, we began our final trek to combat ready status. The upgrade standardization evaluation consisted of a full day at the launch control facility and a six hour MPT evaluation. As an AMCCC, I got two six hour periods, one as commander and one as deputy. AMCCCs got two evaluations for the price of one, but only one Highly Qualified pin, and only if we excelled in both phases. Following the evaluation, we trained for our written EWO tests (100% scores required) and the two hour oral certification before the wing commander. On 9 December 1965, we became the eleventh combat ready crew in the wing, and were immediately designated an instructor crew. Experience wasn't the key - we just happened to be trained in the earliest group. Our first alert was the next day, at one of two sites that had been turned over to the wing. By mid-December, we had Golf and Hotel. Our second alert was on Christmas day, with the rest of the time filled training new crews.

The pace was hectic, since SATAF was turning over facilities quickly. We trained or evaluated (we became an evaluator crew in May) new crews twenty four hours a day, with an occasional alert to stay current. We had a short break in July, 1966 when we were selected to travel to Eniwetok to watch a Titan II reentry vehicle impact in the lagoon after a test launch. We returned home just in time to start the Minuteman Education Program (MMEP), with six work days (alert and training) followed by two days of University of North Dakota
(continued page 9)

First Crews (Cont) - classes. There weren't a lot of days off - only when our eight day week coincided with a Saturday or Sunday with no alert or MMEP class on the schedule (rare).

We were fully into the SAC evaluation and inspection schedule, which meant a full wing evaluation by the 3901st Strategic Missile Evaluation Squadron every six months, and an Operational Readiness Inspection at least yearly - and normally more often.

In mid-1967, we became the wing senior standardization crew, with Dick Couzins as our new DMCCC. Gary became an AMCCC. At the end of 1967, SAC implemented new execution procedure for ICBMs, Revision C. This EWO procedure was an order of magnitude more difficult than past procedures, with complex preparation, execution, launch hold and continuation procedures. The day after Christmas, the wing commander, Colonel Gerry Fall, had us run through the procedures for the division commander in the MPT to demonstrate errors in the SAC-supplied procedures. The deputy and I stepped through the complex checklists and launched all of our missiles, even though we knew we weren't really supposed to. The checklists said one thing, the book that contained the "rules" another. Colonel Fall explained the problem to the general, and flew to Offutt to talk to the CINCSAC. He had decided that our wing could not assume alert on 1 January unless we had checklists that worked. The CINC agreed, and Fall brought new checklists back.

He wouldn't let a crew go on alert under the new procedures until he personally watched the crew in the MPT, so we struggled to certify 15 crews before 31 December. Those of us who made the cut went to the field that day and stayed for two full tours, because it took that long to get 15 more crews certified. The next few weeks were a busy time, as the less experienced crews had difficulty getting through the commander's scenarios. There was no doubt, though, that our crew force was expert on this new execution procedure.

Colonel Fall decided that this MPT certification procedure was a good idea, so at each revision to the EWO procedures (normally yearly), he watched every crew in the wing. He even carried this procedure to Malmstrom when he left the 321SMW in 1970, and later

as commander of the 4th Air Division, Brigadier General Fall demanded the same high standards of all his missile wings.

In November, 1968, SAC changed the crew force from three to two man crews, and I became an evaluation crew commander. About the same time, we started preparing for the 1969 Missile Competition, and I was one of the four final crew commanders. In May, 1969, Herb Grote, my deputy, and I joined ten other 321SMW team members (two ops crews and three maintenance teams) at Vandenberg, and came home with the Blanchard trophy. We won nothing else - we finished second in the individual categories, but we brought home the important one. That summer, I was part of the first graduating MMEP class, and figured my days at Grand Forks were about over. I had applied for Education With Industry in Space Vehicle Management, but picked the wrong year to do it. In 1969, the program was cut in half, and I was "frozen" to the base for another year.

In 1970, I was selected again for the missile competition, and finished dead last. Two weeks later, with major's leaves that were only two months old, I left Grand Forks and the 321SMW for California. I had spent five years and five days, 115 alerts (I missed equaling my last crew number S-116, by one) in what I knew was the premier missile wing in SAC.

June 1997 History Errata

The special history issue published in June 1997 had some errors - the correct information:

Page 1 - nomenclature for Coffin based missiles should be C - P designates pad based.

Page 3 - Atlas 2 should read Atlas II

Page 5 - Luffenbaum should be Luffenham.

Page 7 - The 564SMS activated 12/65, there are some who say that the Titan II was also operational at Vandenberg during part of the 1960s, and the 490SMS at Malmstrom actually received a few LGM-30B missiles. Note that some of the references to units (e.g., 321SMW, now 321st Missile Group) used the original designations - the author chose not to change designations to the current ones for the historical perspective).

Page 8 - the Peacekeeper carries "up to" 10 warheads

page 9 - Four missile wings should read three wings and a group (now three Space wings and a missile group).



Colonel Friederichs, first commander, 321SMW

A Man of Many Firsts

By Col (Ret) and Mrs Bob Mattson. Bob is member number A1294. Cindy Mattson is the daughter of Colonel Friederichs. They met when Bob was assigned to the 321SMW as a targeting officer.

Colonel Gilbert F. Friederichs, first Wing Commander of the 321st, was a man of many firsts and appropriately so for the community of Grand Forks. He was a native of Wahpeton, North Dakota, entering the Army Air Corps out of ROTC from what is now known as North Dakota State University.

In his twenty six year career, his accomplishments most likely will never be duplicated in today's streamlined Air Force. He was in on the ground floor of SAC's Intercontinental Ballistic Missile Program. He was a "professional" Base Commander for nearly eight years, commanding at Castle AFB, March AFB, Anderson AFB, and F. E. Warren AFB. In the thirty months at Warren, Colonel Friederichs activated the base for SAC from Training Command and oversaw the construction/activation of the Atlas facilities and the initial operational capability (IOC) of the Atlas wing.

In December 1960, Friederichs was announced as the first non-rated Wing Commander in SAC and assumed command of the 4062nd Strategic Wing, the first railborne Minuteman system, at Hill AFB. Following curtailment of the mobile program, he was assigned as the Vice Wing Commander at Malmstrom's 341st and

oversaw activation of our nation's first Minuteman wing. After IOC of the 341st in July 1962, he was assigned to Minot AFB as the first Wing Commander and "activator" of the 455th (now 91st) and oversaw the wing IOC.

In 1964, after experience in the activation of the three wings, Colonel Friederichs was selected as the first Commander of the 321SMW, the nation's first Minuteman II Wing. He oversaw activation and IOC of the 321SMW until May 1967 when he retired after nearly fifteen years of continuous Base/Wing Command.

Colonel Friederichs retired in the Ogden, Utah area and worked for many years for The Boeing Company as Program Manager at Air Force Plant 77, once again involved in Minuteman and also in SRAM missiles. He also found time in retirement to serve as Utah State President of the Air Force Association and as President of the Ogden/Hill AFB AFA Chapter. He passed away in November of 1996. His wife, Metta, still resides in the Ogden area.

The India Faucet *By Terry Tobin, Member Number A1420. Terry lives in Wahpeton, North Dakota.*

I remember my alert duty at the 321SMW in eastern North Dakota. It seemed like every site had its own unique peculiarities. Some of these include, bringing your parka to Mike-zero in the middle of summer just to keep warm, the ground water leak over the light switch at Lima-zero, the bad "frost boils" in the road in front of Alfa-zero, and most memorably the water faucet in the bathroom at India-zero. Somehow the water faucet was installed very close to the commode. An experienced crew member (at his home site) would carefully sit down to do his business on the toilet. However, the visiting crews were not always so well informed. If you were not careful, you could sit down too quickly and turn the handle with your thigh and fill your back pockets with a spray of water. Luckily I had a change of clothes along to wear while the others dried out.

**Help AAFM Continue to Grow
Let Your Missileer friends know about
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will mail brochures and newsletters**

Air Launch History

CMSgt (Retired) Walter Kundis, whose career in the military included PT boats, Titan II crew duty and a final job as the PACAF missile expert, Dave Stumpf and your executive director have put together a comprehensive history of missiles launched from aircraft. The history includes information on air-to-air and air-to-surface systems from the late 1940s to date.

This review of what some of our members call the "small missiles" will be a major part of the September issue. The missiles we will cover include Genie, Sidewinder, Sparrow, Falcon, HARM, AMRAAM, Shrike, Bullpup, Quail, Hound Dog, Skybolt, ALCM, ACM, Firebee and any other we find information on before the issue.

We can use some good photos, as well as more information on each of the systems. If you worked with air-launched missiles, send us your personal stories and any helpful information that you have. We have over 150 members with air-launch experience - there should be some good stories and articles out there.

Articles and Stories

Many of you have provided inputs for our newsletter - so many that you may not have seen yours yet. Don't give up - your story or article will appear in a later issue - twelve pages fill up fast - just be patient - and keep sending in those great stories.

National Meeting and Book

You have seen the registration form in the last two newsletters - and several of you have already sent in your reservations. We expect a great turnout, and, as you can see, we have a superb set of activities for all. The people of the 45th Space Wing are going out of their way to make our visit enjoyable. You may know that the John Glenn space shuttle launch is scheduled a few days after our meeting (October 29th). General Randy Starbuck, the 45SW commander, has offered to let any of us who stay around to watch the launch. Realizing that missiles and rockets don't always lift off on time, it may be a gamble, but if you can stick around, let AAFM know when you register.

The Turner book that is being put together for us is nearing completion. Many of you submitted biographies and stories. David Stumpf and I have been working on the rest of the contents to make the book something you will enjoy having. The basic line-up for the contents will be a foreword by our president, Jay Kelley, a history and information about AAFM, a history of ground based and air-launched missiles, a history of missile competition, some special recognitions, poems, cartoons, photos and more.

If you haven't ordered the book yet, it may be too late to get your bio in, but books are available from AAFM History Book, Turner Publishing Co, PO Box 3101, Paducah, KY 42002-3101

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

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

Mail with donation to AAFM, Box 5693, Breckenridge, CO 80424

The Early History of the 321st

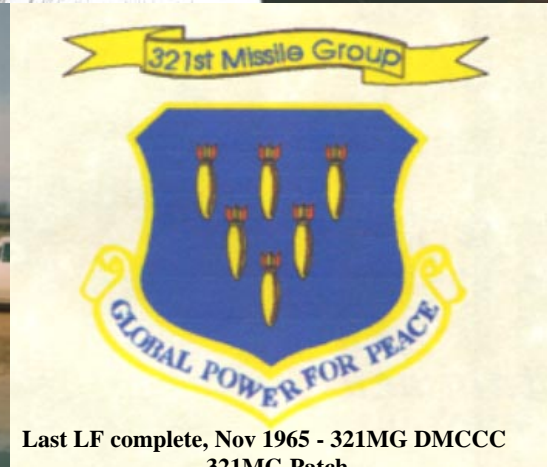
The 321st Bombardment Group (Medium) was constituted on 19 June 1942 at Barksdale Field, Louisiana and activated on 26 June. Over the next several months, the unit prepared for overseas duty with North American B-25 twin engine bombers. This preparation took place starting at Columbia Army Air Base, South Carolina, and moving to Walterboro, South Carolina, and then DeRidder Army Air Base, Louisiana. Between January and March, 1943, the unit moved to Algeria, and was based there and in Tunisia, Corsica and Italy as it took part in combat operations in the Mediterranean theater. As a part of the 57th Bombardment Wing and 12th Air Force, the 321st engaged in combat operations in North Africa, France, Sicily, Italy, Bulgaria and Greece. The unit received Distinguished Unit Citations for missions near Athens, Greece and Toulon, France.

The unit was inactivated in Italy on 12 September 1945, redesignated the 321st Bombardment Group (Light) and allocated to the reserves. On 29 June 1947, the 321st was activated at Mansfield, Ohio, and was inactivated again on 27 June 1949. It was activated as the 321st Strategic Missile Wing, Strategic Air Command, at Grand Forks Air Force Base, North Dakota, on 1 November 1964.

During World War II and while in Ohio, the 321st included four Bomb Squadrons, the 445th, 446th, 447th and 448th. As a missile unit, operations squadrons were the 446th, 447th and 448th Strategic Missile Squadrons.

321st Commanders - 1964-1998

- Col (Ret) Gilbert F. Friederichs - 1 Nov 64 thru 31 May 67
- BGen (Ret) Gerald G. Fall - 31 May 67 thru 23 May 70
- BGen (Ret) Paul Krause Paul - 23 May 70 thru 8 Nov 72
- MGen (Ret) Stuart H. Sherman, Jr - 8 Nov 72 thru 16 Feb 74
- BGen (Ret) William L. Shields, Jr - 16 Feb 74 thru 10 Mar 76
- Col (Ret) Joe L. Church - 10 Mar 76 thru 4 Oct 77
- Col (Ret) George Holt, Jr - 4 Oct 77 thru 12 Sep 78
- Col (Ret) Kenneth L. Holden - 12 Sep 78 thru 10 Mar 80
- Col (Ret) Nathan Hartman - 10 Mar 80 thru 7 Jul 82
- MGen (Ret) Frank B. Horton - 7 Jul 82 thru 18 Sep 84
- Col (Ret) Kenneth B. Van Dillen - 18 Sep 84 thru 25 Nov 85
- MGen (Ret) Robert W. Parker - 25 Nov 85 thru 8 Jun 87
- Col (Ret) Rickell D. Knoll - 8 Jun 87 thru 23 Feb 89
- LGeneral Lance W. Lord - 23 Feb 89 thru 31 May 90
- Col James H. Reid - 31 May 90 thru 23 Jun 92
- BGeneral Jerry M. Drennan - 23 Jun 92 thru 10 Jun 93
- Col (Ret) John P. Gibeau - 10 Jun 93 thru 5 Jul 95
- BGen Robert P. Summers - 5 Jul 95 thru 1 Jul 96
- Col Richard E. Webber - 1 Jul 96 thru 8 Oct 97
- Col Edward W. Rausch - 8 Oct 97 thru 2 July 98



Last LF complete, Nov 1965 - 321MG DMCCC
321MG Patch