

Trucks, Cars, Choppers, Planes, Boats and Others How Missileers Get Around



Transportation and Missileers - Throughout the more than fifty years that make up the history of USAF missile systems, we have traveled by about every means known to man. From Jeeps, six-by-six trucks and tracked vehicles to aircraft, we have used a wide variety of ground, air and water vehicles to transport missiles and missileers.

We have moved our big missiles in C-133s, C-141s, on trailers and on train cars. Small missiles have traveled in even more varied ways - remember the recent story of the commercial trucker who disappeared with a truckload of air-to-air missiles on a cross country trip? We have moved missileers in even more different ways.

In my days in Titan I, I traveled by pickup truck, big blue diesel bus, H-19 helicopter, my own Jaguar sports car (the long paved access roads in Idaho were great for a “high speed approach.”) and in convoys of several other vehicles transporting the two stages of the missile to the site. In Minuteman, we rode in a variety of vans and trucks, cars, station wagon and helicopters. The current missile force travels in Expeditions, new transporter-erectors and reliable choppers.

Those of us who served in the Ground Launched Cruise Missile system worked with one of the most varied off-road transportation system in USAF history - from the big MAN tractors that towed the transporter-erector-launcher and launch control centers to the variety of trucks, Hummers and other vehicles we used to get to the flight area. If it rolled, flew or floated, we probably used it. This issue includes a number of stories and articles about our travels - and it only scratches the surface.

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A Word from the Association -

History Issue - we had a great response from members, AF units and many others about our last issue. The concise history was fun to put together. Bob Kelchner printed about 5,000 copies, with almost 2,000 going to members and organizations (we mail to a large number of AF units and historical/heritage organizations). I recently added a number of copies to our mailing list for each missile operations and maintenance squadron, as well as most of the space units. We also provided 3,000 copies to the Civil Air Patrol for their "Rocketeers" program, and we distribute a number of copies through other means.

Errata - We had two (at least) errors or omissions in the History Issue. We all know that the Atlas F was already full of RP-1 as it sat on alert in the silo - all the crew had to add was LOX before raising the elevator. Member Lee Bishop pointed out that the Matador did initially use the Shanicle guidance system, but it didn't work very well, so the Martin Company trained Lee and others on a triple pulse radar guidance system using the APW-11 and the MC-896 Coder with the MSQ-1.

We also moved the 10th Strategic Missile Squadron from Malmstrom to Minot in our Olympic Arena/Guardian Challenge issue - it's still at Malmstrom.

Travel with AAFM - I have been on the road to several locations in recent months - and will visit more bases and other places missileers gather in coming months.

AAFM Information - AAFM is a non-profit, tax-exempt organization under section 501 (c) 3 of the IRS Code. The AAFM newsletter is published four times each year by:

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In January, I checked out the hotel for the 1998 National Meeting (see page 11 for details). In February, we hosted an **AAFM** gathering at Peterson AFB, with good briefings from Space Command on the future of missiles, then returned later to present the Payne and Phillips trophies. In April, Jim Crouch and I traveled to Vandenberg for Guardian Challenge, where **AAFM** and the Society of Strategic Air Command jointly provided the commemorative mugs to each competitor. In May, I visited the Greenbrier Hotel in West Virginia to tour the bunker built to house Congress in the event of nuclear war. The Greenbrier offers tours of the bunker, and is looking at ways to portray our role in the Cold War.

In June, I made my annual trek to Minot for golf and a meeting with missileers - the 91st hosted us and we had a good meeting on base. I was invited to speak at the Tucson reunion of the 390th Strategic Missile Wing (the Titan II unit that was at Davis Monthan), and used this opportunity to visit the Titan Missile Museum in Green Valley. If you haven't been - stop in and see what a great job they are doing with the old Titan site. During the Tucson visit, our display was a prominent part of reunion activities.

In late June, Jim McHugh put together a Retiree Fair at Warren, and I asked Chuck Seniawski to represent **AAFM** with our display. I plan to get to Warren later this year for an **AAFM** gathering.

Upcoming Events - We just mailed out nomination requests for the 1997 **Honorary Lifetime Member** program, asking units to name an outstanding local-area supporter to membership in **AAFM**. This is the second year for this program, and we expanded to include the Space wings at Vandenberg, Patrick and Peterson. We honored civilians from Minot, Cheyenne, Grand Forks, Rapid City and Great Falls in 1996.

The 1997 **Missile Heritage Grant** applications have been mailed to more than 20 museums - a panel of three board members will review the applications later this year and decide who gets funding for 1997. Note the story on page 3 about the Snark that Hill mounted using our funds.

321st Missile Group Closing - the 321st will close in 1998, and many of you have asked about planned activities. I have contacted the commander, and asked that he keep us informed so those of us who served at Grand Forks can take part in the ceremonies and other activities - watch the web page and newsletter for more, and each 321st veteran will receive a direct mailing when details are available. - *Charlie Simpson, Executive Director*

Letters to the Association

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

Dear Editor

I am a member of The Air Force Space Operations Association, a non-profit organization, more commonly known as AFSOA. This organization was formed several years ago by a group of Air Force and contractor people who had played instrumental roles in the early development and operation of Air Force satellites. There are several hundred members, including active and retired military and civilians. AFSOA held its first convention at Colorado Springs, with tours at Cheyenne Mountain and Falcon AFB. The second convention was held at Sunnyvale, CA, with a tour of the Satellite Test Center.

Visit the Air Force Space Operations Association web site to learn more about this non-profit group that is dedicated to: Promoting professional military space operations; Publishing the history of military space operations; and Sustaining the camaraderie of military space operators. You can find our site (still in development) at: <http://home.earthlink.net/~twn/afsoa/afsoahome.html>.

For further information, contact AFSOA, 5733 Green Meadow Dr, Agoura Hills, CA 91301.

Thanks, Tom Carr

Help - We need a copy of the March 1997 Newsletter - can't retrieve the stored copy from the computer - send to AAFM

Board of Directors -

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AAFM Heritage Grant Funds Hill Aerospace Museum Snark Missile

In 1995, the *Association of Air Force Missileers* provided \$2,800 to the Hill Aerospace Museum to mount a Snark missile at the museum. In July, Jack C. Price, AAFM member and Vice Chairman of the museum, reported that the Snark is now in place.

The Snark is one of several missile displays planned for the Hill museum. Jack sent us a description of the two phase plan for missile displays. When completed, the area around the museum visitor and education center will include BOMARC A and B, Atlas, Titan II, Hound Dog, ALCM, Quail, Genie, Peacekeeper, Minuteman II and III, GLCM, SRAM, Sparrow, HARM, Firebee and a number of other displays adjacent to the Snark.

If you are in the Salt Lake or Ogden area, stop and visit the Hill museum - it's located just off Interstate 15 on the edge of Hill Air Force Base. See first hand what your donations are doing to preserve our missile history.

Taps for Missileers

CMSgt (Ret) Bradley Solomon, a member who lived in El Paso, Texas, passed away this year. Bradley served in Matador in the 1st TMS.

LtCol (Ret) Bobby R. Quisenberry and his wife Pat died in July in Virginia. Bobby served in Minuteman at Whiteman, in the 4315CCTS at Vandenberg, at SAC Headquarters and in Titan II.

Major General (Retired) John Hepfer, who was a key player in Minuteman development and testing, passed away earlier this year.

Transportation and Missileers (cont)



Air Force Gooney Birds (C-47) were used to ferry missile crews in Montana for a short time

Moving Missileers in Montana -

The 341st Strategic Missile Wing at Malmstrom AFB, with 4 squadrons (10th, 12th, 490th and 564th) 200 Launch Facilities (LF) and 20 Launch Control Facilities (LCF - now called Missile Alert Facility or MAF) cover a large part of the west central Montana prairie. The wing's missile complex stretches from about 50 miles west and north, to 150 miles east and south of Great Falls. The 490SMS had the wing's farthest LCFs ranging from 90 miles for Mike-1 to 150 road miles for Oscar-1. With the farthest sites, the 490SMS probably experienced the widest variety of transportation methods and crew changeover schemes ever devised by clever and cunning wing staff members. . As a member of the 490SMS from 1964 to 1967, I experienced most of these methods and schemes. Here is a thumbnail of my missile crew transportation memories:

Planes: A C-47 Gooney Bird flew the 100 miles from Malmstrom to Lewiston Airport and carried all five 490SMS crews plus Charlie, Delta and Echo crews from the 10SMS. I remember one pilot, a short, old 10SMS Operations Branch Officer (OBO), who used to scare the crews to death with white knuckle landings, and choppy, bumpy flights. At Lewiston, crews would pick up prepositioned station wagons, drive to LCFs, and changeover. Relieved crews would return to Lewiston, board a C-47 for trip back to Malmstrom, and another white knuckle landing. Eventually, crews refused to fly with the old 10SMS OBO. Another problem: crews going to sites closest to Lewiston had to wait on the crews from the farthest sites; the cause of much griping. Flights suddenly stop; no qualified pilots available.

Buses: By far the slowest, most boring change-

over method was to be bused out to Lewiston, do the car thing to the various LCFs, return to Lewiston and bus back to Malmstrom. Luckily, this didn't last long the crews revolted!

Choppers: I remember well the H-19, an old piston engined, Sikorsky chopper that held only two crews. It was a bulbous looking contraption that looked anything but flyable. The pilots sat up high in cockpit, and passengers sat below and behind. The interior layout was such that I can remember staring through the pilot's legs at the pedal controls. The H-19 was very noisy, slow, and reeked of exhaust fumes and burnt oil. The seats were oil stained and oil dripped from the gearbox onto our white (house painters) crew uniforms. I think I ruined a uniform on each flight. Eventually the H-19s were traded in on the....

CH-3: (Cargo version of the Vietnam War HH-3E Jolly Green Giant) Much bigger and faster than the H-19, held 20+ pax, a regular cattle car. The 341st had two of these monsters. It was a relatively new aircraft, but like the H-19, it was noisy, smelly and oily. The pax sat under the huge rotor and gear box which made a terrible graunching sound. Too big to land at most LCFs; it dropped crews at a central point like the C-47. I hated flying in it and it took longer to get out and get home due to the wait for the farther out LCFs. I recall wishing we could get rid of them. Be careful what you wish for one crashed and the other caught fire; both were completely destroyed. Luckily, with no loss of life or injuries. Next came the...

UH-1F (Huey): Much better, clean, quiet (everything is relative) and more efficient at changeover of crews. Only drawback, same for all the air transports,

(Continued on page 5)



H-19 used to transport crews to sites in the 1960s



Minuteman Transporter-erector and other vehicles on site during missile change

Moving Montana Missileers (Continued) - they only flew in good weather; when things went to pot you drove. Worst situation ... weather closed in after you got relieved grounding the choppers at LCFs; stranding you, sometimes in blizzard conditions, for days. Best situation ... riding the co-pilot seat on a clear day, the pilot letting you try to fly this very unstable flying machine. Or the pilot, newly returned from Vietnam, practiced strafing runs on trains, chased herds of antelope all over central Montana or surprised the crewmembers in the back by demonstrating that a helicopter could really perform 90 degree banked turns like a fighter!

Cars: In the end, when the weather turned bad, we drove ... Ford station wagons. All my deputies were from warm climes (Alabama, California, and Arkansas) with zero snow driving experience. I let one drive in snow once, didn't get two miles from base, spun off the road. Being from Pennsylvania, a die-hard car nut and self-proclaimed excellent driver, especially in snow, I did all the driving from then on. In real bad weather, the squadron would have Transportation install tire chains on all the vehicles and tell us not to exceed 20 mph. Naturally, we hated chains, too slow and uncomfortable, and we would remove them immediately once off the base. Although the wing limited its vehicles to 55 mph, Montana's speed limit was "Reasonable and Prudent". I can recall telling wide-eyed Deputies, while going 65 mph on snow-pack, "We will be OK Dep unless we have to stop or turn!" I think I held the record for the fastest time to Kilo-1 in the snow. By the way, you would have to wait until after changeover to report to the base that you arrived; otherwise they may have started questioning how you drove 125 miles in an hour and forty minutes at 55

mph!!! The best part of driving out to the 490SMS area was the breakfast stop in the tiny town of Stanford at a restaurant that had the best cinnamon rolls in Montana. Of course, when the wing staff caught wind of this crew perk they quickly came up with numerous reasons as to why crews should not stop. I can remember hearing a commander's words "I better not get any reports of blue vehicles parked at that restaurant in Stanford!" Cooler heads prevailed; however, and it was deemed better for safety that crews take a rest break. That is unless you were carrying classified materials out to the LCF, something, you will recall, we did with agonizing regularity.

After I left the crew force, I believe most of the wings acquired big, suburban type vehicles, some with 4 wheel drive, and used these exclusively. This system probably gave some stability to the crew changeover procedure and did away with the hit or miss, weather dependent, chopper flights. Although I bet it wasn't near as exciting, interesting or as much fun!! (By John J. (Pat) Napolitano, Member Number L0015, San Antonio, Texas)



A Titan I being unloaded from a C-133

Boating to BOMARC - Stationed with the 4751st ADSM at Hurlburt Field (Eglin AF Auxiliary Field 9, Florida in the late 1950's and early 1960's, I rode a ferryboat to work. The BOMARC launch site was on Santa Rosa Island and the only other way to get there was a considerably longer route through Fort Walton Beach. Air Force sailors manned the boat which took us from the base across Santa Rosa Sound. Then it was a bus or auto trip of several miles to the site. Occasionally a power outage on shore kept the ramp from working and we were stranded on the boat, but never for very long. (By Richard A. Rice, Member number A0378, Waverly, Tennessee)

How We Got Back From Work

My deputy Mike Babbidge and I had finished a tour at Echo, the 66th SMS Command Post. A chopper (Huey) had brought the relief crews from Bravo and Delta as well, so we had stops at both on the way back to Ellsworth, about 110 road miles away.

The weather wasn't good, and was getting worse. Sleet, snow, freezing rain, but not enough to force the chopper to sit down at one of the control centers. We left Bravo for the last leg to the base and things got worse. I always enjoyed sitting up front with the pilot (being non-rated I guess it gave me a thrill). In any event the defroster-deicer for the front windshield wasn't doing well, especially on my side. The pilot said if we could sit down for a couple of minutes the engine would warm up enough to clear the windshield and we would be on our way. My question was why not? No way! You had to get 15th AF permission to land any place other than the base or a missile site. We knew we didn't have time or the courage to go through that ritual.

The pilot said "Well, I'm going to get as close to the ground as possible to see if that would do any good." It didn't! My memory escapes me but I think they carried an ice scraper on board. I won't blame or take the blame for this idea but the next thing I remember I was standing on the helicopter skid holding on with one arm and scraping the windshield with the other at about five feet above the ground. I did a good enough job so that the pilot's visibility was sufficient to get us back to the base.

What lengths we went to not to have to stay one minute longer than we had to at a control center especially an extra night or two! (By Larry Hasbrouck, Member Number A0203, Ocean Springs, Mississippi)

Arizona Highways - As a MCCC instructor and later, a stanboard evaluator for the 390th SMW (Titan II) at Davis-Monthan AFB, Arizona, 1965-1968, we often flew in Huey Helicopters to the missile sites to complete instruction or evaluations. Some of our helicopter pilots had recently returned from Vietnam and some were prone to continue their combat flying by "attacking" 18-wheeler convoys on the interstate highways on the way to the missile sites.

One flight that I will always remember was when a helicopter instructor placed a visor on the student pilot, placed the helicopter in a 45 degree bank and then turned the controls over to the student. The student was to right the helicopter, and he did, but it took a few corrections

and us non-flight status missileers recognized very quickly what the term "white knuckle flight" meant. (By Dick Adams, Member Number A0862, Sherman, Texas)

The Colonel's Car - The 1965 Ford Station Wagon belonged to our squadron commander - at least the AF had assigned it to him. My deputy, our facility manager and I were heading to Hotel from Grand Forks AFB on the gravel county road leading north from Highway 2 to the LCF. It was January, normally cold for North Dakota, and the roads were, as usual, snowpacked. I corrected for the large hump in the road and sailed into the roadside ditch - which was filled with windblown snow. The Ford slowly settled to the frame - we were really stuck. Our FM walked to a nearby farmhouse, and the farmer showed up with a pre-war Farmall - the Ford didn't budge. The farmer said "I'll be right back." In a couple of minutes, the largest new green John Deere you have ever seen came chugging down the road. It only took a couple of minutes to have the Ford back on the road. The farmer refused an offer for payment - he said "This is the most fun I have had all winter." (By Charles G. Simpson, Member Number L0001, Breckenridge, Colorado)

We post notices of reunions, meetings and other events in our newsletter and on our web page - mail, fax or e-mail your notices to AAFM

Coming Events -

44th Bomb Group Veterans Associaton - Reunion in Salt Lake City October 9-12, 1997. This organization is the original members of the WWII unit. Missileer members of the 44th SMW/MW are invited - AAFM will be there. Contact AAFM for more details.

1998 AAFM National Meeting - Ocotber 21-25, 1998, Cocoa Beach, Florida Holiday Inn. Details and registration available early in 1998. Will include tours of Patrick and NASA activities. See page 11.

Are all of your missileer friends members???
Send us their addresses and we will
send a newsletter and brochure
Help AAFM continue to grow

Lox, Atlas and Steam - During my Air Force career, I had the dubious distinction of being responsible for two of the most cantankerous "beasts" in SAC's missile fleet—the liquid-fueled Atlas F and Titan II. Around 1963, as an Instructor Missile Combat Crew Commander in the 551st Strategic Missile squadron, Lincoln AFB, Nebraska, my crew was undergoing a Stanboard Check during a Dual Propellant Loading Exercise. This was before SAC became sadder and wiser about using RP-1 and LOX (instead of liquid nitrogen) for exercises and before the tech data emergency procedures (especially those pertaining to AGE) did more than scratch the surface of the catastrophic things that could happen and how to recover from them.

After loading Lox, in the middle of the launcher platform ascent sequence, we experienced a major malfunction. The primary diesel power generator shut down automatically. We switched to the standby generator. Shortly, we noticed that it was overheating rapidly, and we had to shut it down also. This caused the launcher platform to stop rising—before the liquid oxygen boil-off valve had cleared the silo cap. The super-cooled gaseous oxygen began to boil-off and vent through the valve, impinging on the steel launcher platform suspension cables. That could cause the cables to snap, dropping launcher platform and loaded missile into the bottom of the silo. A potential catastrophe was in the making.

Of course, our trusty "Dash One" didn't cover this predicament. And, when I turned to the Stanboard Crew Commander to rescue us, I could tell by the pained expression on his face that he didn't have the answer either. Fortunately, I had an outstanding crew, and we had spent many hours of alert duty studying the AGE systems and how they interact with one another. We knew that this complex had been experiencing problems with its automatic water valves servicing the cooling tower. We panned the topside TV camera to the water cooling tower and, sure enough, there was no steam cloud rising. Necessity being the mother of invention, I decided to improvise. After a quick review of the water plumbing schematics, we devised a plan that the Stanboard Crew Commander bought off. I sent the Missile Facilities Technician and the Ballistic Missile Analyst Technician into the silo to reposition some water valves manually in order to reroute cooling water to the diesel generators. Thank God, it worked! We restarted the generators and successfully backed out of the PLX. (By Elmer Brooks, Member Number A0120, Rockville, Maryland)

Watch Out - Falling BOMARC

Stationed at Hurlburt Field, Florida in the early 1960's, my Air Force unit was test launching BOMARC anti-aircraft missiles over the Gulf of Mexico from a launch site on nearby Santa Rosa Island. The missile, about 50 feet long, 3 feet in diameter, with sharp wing and tail surfaces, looked more like a supersonic fighter without a cockpit than a guided missile. Loaded with highly toxic fuels, and an explosive device designed to reduce it to fine pieces of scrap metal in the event that it strayed off course, the BOMARC presented a variety of potentially lethal hazards in the event of a mishap. Just such a catastrophe occurred one day when instead of arcing over the Gulf - an 1800 guidance error sent it toward the mainland of Northwest Florida. The explosive device did its job right over the administrative area of the launch site and parts began raining down toward those of us who had been evacuated there to observe the launch. Three young Airmen had driven a military 3/4 ton truck down the road a few hundred feet closer to the launch pad to get a better view. When the blast occurred they all ran for the safety of the truck, however, all did not share the same concept of what type of safety the truck afforded. Two of them dove underneath while Airman #3 jumped behind the wheel and drove off. Fortunately no one was hurt but it is a good example of how different we humans react under stress. (By Richard A. Rice, Member Number A0378, Waverly, Tennessee)

The Missileer Eye Doctor and the Russians

Doctor Doug Smith, a member of AAFM, served four years as a missile launch officer at Malmstrom AFB, Montana, from 1970 to 1974. Like many of us, he pulled many alerts beneath the Montana plains. During the peak of the Cold War, he manned ten Minuteman missiles targeted for the Soviet Union.

Doug left the Air Force, earned a degree in Optometry from Pacific University in 1979, and began practice in Oregon. Early this year, he visited Petropavlovsk, a former Soviet nuclear naval port in Siberia. He visited there as part of a group of Rotarians from Oregon and Alaska, working to connect medical clinics and the city's library to the Internet.

Doug is studying Russian, and is raising funds to purchase low-vision eye-care equipment and a laser for eye surgery for the many diabetes patients living in that region of Russia. He expects to meet some of his former adversaries, Russian missileers, on his next visit.

“This is a (Really Tough) test of the...” The test in the May issue was obviously more than most of our members could handle - we only had two entries (Greg Ogletree and Ron Plante), and both missed several questions. We have awarded prizes to both - each missed the same number of questions. Correct answers are below - watch for another test of your missile knowledge in a future issue.

1. Where was the SM-62 deployed, what was it called and what was its propulsion system? Presque Isle AFB, Maine, in the 702nd Strategic Missile Wing - with a Pratt Whitney J57 jet engine (and two solid boosters).
2. What bases had Atlas E units? 548SMS, Forbes AFB, KS, 566SMS, Warren AFB, WY, 567SMS, Fairchild AFB, WA and 576SMS, Vandenberg AFB, CA.
3. Where was the 568SMS assigned and what system did it possess? Larson AFB, WA, Titan I.
4. What was the propulsion system for the TM-61? The “61” was misprinted as a “67” - Matador - Allison J-33.
5. Where did the Matador and Mace crews in Europe go for test launches? Wheelus AB, Libya
6. Where was the Jupiter deployed? Gioia Del Colle, Italy and Cigli, Turkey
7. Who made the launcher elevator system for the Atlas F and Titan I? AMF, the maker of bowling alleys
8. What were the four crew positions in the Titan I control center? Launch Control Officer, Guidance Control Officer, Ballistic Missile Analyst Technician and Missile Maintenance Technician
9. What happened to OSTF-1? The Titan I test facility that is now a large hole in the ground at Vandenberg - the Waterbury brake on the AMF launcher failed and the full missile went from top to bottom of the silo very quickly, ending in a large explosion - a recent newsletter told the story of the explosion
10. What Minuteman Maintenance teams competed in the 1969 Olympic Arena? Targeting and Alignment team and Missile Maintenance Team
11. In the late 1960's, Minuteman crews had three members (Commander, Deputy and...) what was the title for third member and where did he sit? Alternate Missile Combat Crew Commander, qualified as both MCCC and DMCCC, so he could sit in either chair while the “regular” occupant could sleep. In the early days, most MCCCs were Majors or above, AMCCCs were Captains and DMCCCs were lieutenants
12. What are TCCPs and PARPs? Titan II Tactical Countdown Continuation Procedures and Post Attack Response Procedures
13. What was a SCOBEA? a “better Chemox”, the Self Contained Oxygen Breathing Emergency Apparatus
14. What engines power the Titan II? The LR-87 (Stage I) and LR-91 (Stage II)
15. What propellants did Titan II use, and what characteristic made them ignite? Aerozine 50 and nitrogen tetroxide - they were hypergolic - they ignite upon contact
16. What specialty were the majority of the members of a GLCM flight? Security Police (both US and local national forces)
17. What was the Skybolt? Air-launched ballistic missile designed to be carried by the B-52 - McNamara killed it
18. In the early Minuteman days, what small component had to be carried to launch facilities by two officers separate from the G&C and installed on site? The P-Plug (for permutation). One of the joys of being a crewmember was getting to carry a P-Plug out to some remote site in a blizzard to meet a maintenance team emplacing a guidance and control system
19. Where was the Long Life II missile launch and what happened to it? Sometimes referred to as “Long Laugh II” by the press, it was an attempt at Grand Forks to launch a specially modified missile for a short flight from an operational silo. Long Life I at Ellsworth was a great success - Long Life II failed twice because of over engineering on the safety features, and Giant Boost (called “Giant Bust” by some), the third attempt, also failed for some of the same problems.
20. What movie about the SAC ORI featured the Titan I system? What base was used for the filming? “A Gathering of Eagles” starred Rock Hudson as the commander of a wing with B-52s and Titan I missiles. Rock got to replace a wing commander who had just failed an ORI. Filmed at Beale AFB, CA, and released in 1963. Good photos of Buffs in minimum interval takeoffs, and some good Titan scenes. One of our members, Col (Ret) Bernie Garfinkel, recently sent us some photos that included a Titan I missile topside at a Beale site, with a B-52 flying over in the background. The movie was on the Encore channel recently.

Look for another test in a future issue

Congratulations from the Missileer Staff!

the Missileer

AFSC - Forging Military Spacepower

Gemini Extra

Vol. 3, No. 20 AIR FORCE MISSILE TEST CENTER, PATRICK AIR FORCE BASE, FLA. April 6, 1964

Test Wing Launches First Gemini



LIFT OFF -- The ten-story-high Titan II sits on a pillar of almost invisible blue fluor out of a dense cloud of orange smoke.

EASY THERE -- The 138-foot high vector, weighing 140 tons, is carefully lowered prior to launch.

The 6555th Aerospace Test Wing successfully launched a ten-story-high Titan II on April 6, the morning which placed the first three and a half ton manned NASA Gemini spacecraft in low earth orbit.

Much of the credit for this successful launch goes to a military civilian team headed by Maj. Gen. L. Davis, Department of Defense Representative for Project Gemini. It is representative for Project Gemini.

The Air Force Space Systems Division designed modifications to the half-million pound Titan II, already operational at the nation's most powerful missile, to qualify it for its heavy role in manned space flight.

The 38th Air Transport Wing, MATS, delivered the 130,000-pound Titan II to Cape Kennedy with less than two weeks to go to the launch site.

The Gemini Launch Division of the 6555th, working with engineers and technicians of the Martin Company, received the booster, checked it out, mated it, and launched it from a complex modified under their supervision.

The AFMTC, Pan American and U.S.A. provided launch support, on-Cape communications, airborne telemetry data, all types of services to more than 100 men representatives on hand and other varied services.

The five of the engineers were tracking stations were operated by both:



MAJ. GEN. L. L. DAVIS,
Department of Defense
Representative for Project
Gemini



COL. HAROLD G. RUSSELL
Commander the 6555th Aero-
space Test Wing



LT. COL. JOHN G. ALBERT
is Chief of the Gemini Divi-
sion



MAJ. CARL B. AINSWORTH
is Chief of Flight Testing of
the Gemini Division

into space took about 4 minutes as opposed to 8 and 12 minute flights for Apollo and Shuttle crews respectively.

General Stafford continued on to describe the tremendous roar and vibration of stage one, the bang of stage separation, and the relative smoother and quieter operation of second stage flight. He further enlightened the audience of the tremendous G-forces experienced and the pulsating, or pogo, effect of the modified Titan II engines.

For the grand finale, former military and civilian members of the Gemini Launch Vehicle Division, 6555th Aerospace Test Wing, met at Patrick AFB on Saturday evening. Gone was the youthful exhilaration and enthusiasm of post-launch parties - replaced by quiet conversation, photos of grandchildren, and pictures of the good old Gemini days. Most of the team had very successful post-Gemini careers both in and out of the Air Force, and most are now retired from the world of work. The next get-together is planned for the Fall of 1997 when the completed Gemini monument in the US Space Walk of Fame is dedicated. (By Richard A. Rice, Member Number A0378, Waverly, Tennessee)

Patrick AFB Newspaper from April 8, 1964

30th Year Gemini Reunion Held In Florida

Gemini veterans from around the country converged on Florida's Space Coast in July to commemorate the 30th anniversary of the Gemini space program. Sponsored by the US Space Walk of Fame, the festivities began on Friday, July 19, 1996, in Titusville, with a ground-breaking ceremony for a Gemini monument to be a lasting memorial to program participants.

A commemorative banquet that evening in Cocoa Beach was attended by over 400 Gemini Alumni, including former Air Force and NASA members of the launch team as well as those who worked for the various contractors who designed, built, and operated the program hardware. Lt Gen John G. (Jack) Albert (USAF Ret) former chief of the Gemini Launch Vehicle Division, 6555th Aerospace Test Wing, served as Master of Ceremonies.

Astronaut, Lt Gen Tom Stafford (USAF Ret), captivated the audience with reminiscences of his Gemini flights. Of interest to AAFM members with Titan II experience were his comments relative to his flights aboard Gemini 6 and 9. He referred to the Titan II as an ICBM designed to deliver megatonnage to Moscow and not as a manned launch vehicle. His rapid, not-too-gentle flights

THE MISSILEER

Gemini Extra

Page 2



READY FOR TAKE OFF -- The Interference Control flight crew is shown boarding their C-131 to make the Cape to intercept any stray radio signals which may affect the booster's performance. From left to right are: A-1 Capt. Duane R. Farber, pilot; Capt. Charles E. G. Leach, navigator; Capt. William R. Newman III, navigator; Capt. Jack W. Ludwick, ECM Op.; Tsgt. J. D. Jones and flight engineer, Tsgt. Ronald M. Rhodes. (USAF photo by Williams)



WHO OWES WHERE? -- Al Houston (left), WFL, and Howard Rowland, AF, discuss their locations at the time of launch with Tsgt. Jerry Williams, Base Site Manager. (USAF photo by A2e Nelson)



RANGE CONTROL -- Directing and coordinating range support of the launch are (left to right): S. J. Bourgeois, and J.P. Moore, FAA superintendent of range operations; D. E. Korbey, RCA, instrumentation coordinator; Lt. Joseph M. Capri, Capt. Linnor Rowles, CWG Range System and Major Clyde Wicks, range coordinators. (USAF photo by A2e Nelson)

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COMMAND TABLE -- It was from this spot, called the command table, that Col. Albert, Test Controller, passed clearance to launch. Seated; left to right, are Maj. Higgins, Maj. Moran, Col. Albert and Maj. Ainsworth. (USAF photo by A2e Vermillion)



GUIDANCE CENTER -- This is the view that Capt. Charles G. Rowland, 3rd AF guidance press officer, had of the GE homing radar guidance system. At the console in the foreground are Art Griffin (right), guidance test conductor, and John Swartz, his assistant. In the background are Jim Tilden (left), track console operator, and Joe Richards, 3d sergeant. (USAF photo by A2e Vermillion)



HAPPY CREW -- Here are some of the members of the Gemini Launch Division from, left to right: Maj. Carl B. Ainsworth and Maj. Walter L. Flagg, both, Sgt. Max E. Felling; Lt. Leon J. Mayberry; SMgt. Aubrey E. Young; Lt. Donald A. Williams; Capt. Patrick J. O'Conner; Maj. Alexander C. Ruff; Tsgt. Chris L. Armstrong; Lt. John A. Schell; Lt. Col. John G. Albert; Capt. Richard M. Gentile; Sgt. Stanley L. Lask; SMgt. Harry J. Hillery; SMgt. James E. Charvay; Tsgt. Walter B. Cook; Lt. John J. Calligan; Capt. George Monahan; Capt. James G. Dixon; Sgt. Richard A. Rice and Tsgt. Bobby G. McCool.

The Airlaunched Missile Page -

Have some good air-to-air and air-to-ground missile stories? - send them in (with photos, if possible) for our special history of airlaunch missiles issue.

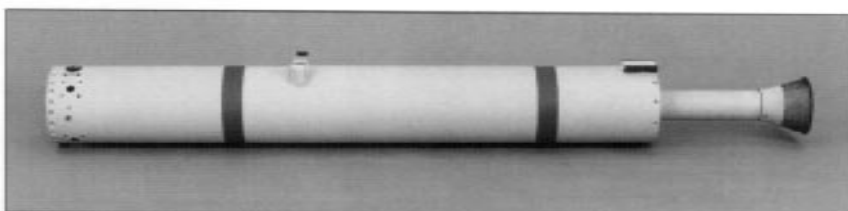
Take Careful AIM - I arrived at Truax Field, Madison, Wisconsin in February of 1960, after mandatory retraining, as a Air Launched Missile Maintenance Technician. (SSgt). We had 1000 AIM4A and 4C missiles on hand at Truax, with more in storage at the Baraboo Ordnance Depot in Wisconsin. We started to receive new missiles from Hughes Aircraft Company, in Tucson, Arizona by truck. One of the trucks was run off the road in Illinois. There was an ongoing occurrence of people trying to force truckers off the road at that time.

The driver of the truck refused to move the truck with a "classified" shipment unless he was afforded a police escort all the way to the main gate to Truax. After some time of dickering with the different agencies, and the driver refusing to move, the escort was arranged. We had been alerted of the shipment and were standing by. When he arrived at the gate to the Missile Maintenance

Section, the truck was being led by a Security Police vehicle, followed by a Madison City Police vehicle, a DaneCounty Sheriffs vehicle, and a Wisconsin State Patrol vehicle. As new missiles were received, older missiles were prepared for "Dead Storage" and taken to Baraboo Ordnance Depot, we brought back an equal number of missiles, checked them out, prepared for shipment, and they were shipped to Tyndall AFB, FL for checkout and firing training. (By Lee Higley, Member Number A0531, Tacoma, Washington)

AMRAAM - The Advanced Medium Air-to-air Missile was developed jointly by the USAF and the Navy for use with the F-15, F-16, F-18, F-14, F-22 and NATO and allied fighters. The AIM-120 replaces the AIM-7 Sparrow, and is a medium range, look-down, shoot-down missile with fire-and-forget and multiple launch capabilities.

The propulsion system was developed in 1979 by Alliant Techsystems and Hughes Aircraft. Testing was conducted in 1985 and 1986, and production began in 1987. Propulsion is a boost-sustain propellant grain design solid motor with reduced smoke feature, weighing 156 pounds and about 75 inches long. (Information from Alliant Techsystems)



F-15 launching AMRAAM, and AMRAAM rocket motor (photos from Alliant Techsystems, Inc.)

1998 National Meeting

Plans are well underway for the 1998 National Meeting of the *Association of Air Force Missileers*. This, the third biennial gathering of the membership, is scheduled for October 21-25, 1998, at the Holiday Inn in Cocoa Beach, Florida.

Several members are already working on the details of the upcoming meeting. The five day event will include a welcome reception, tours of Air Force and NASA facilities at Patrick AFB and Cape Canaveral, local area tours, a golf tournament, a membership meeting, a board meeting, several social gatherings, and a closing banquet featuring a guest speaker. As in our two previous gatherings, the real highlight will be the opportunity to tell some missile tales to other missileers.

The Holiday Inn is located on the Atlantic Ocean in Cocoa Beach, with outstanding facilities for our meeting, including a large meeting room, a hospitality suite for our organization, pool, tennis courts, beachside facility for a dinner and much more.

Watch for more details in the next newsletter - a registration form and information of each event.



Join us at Cocoa Beach, Florida for the next National Meeting - October 21-25, 1998.

Support the *AAFM Missile Heritage Fund*

Donate to the fund we use for our annual grants to museums and receive the items below:

- \$3 ___ AAFM Lapel Pin \$5 ___ AAFM Patch \$5 ___ Subterranean Sentinels Patch
- \$5 ___ Bill McKee's Cartoon Book "Missile Business"
- \$5 ___ Reprints of 1993-1994 AAFM Newsletters
- \$5 ___ Greg Ogletree's "History of the Missile Badge"
- \$5 ___ Bob Wycoff's poem "Missileer" and five other poems
- \$8 ___ Engraved Ball point Pin \$8 ___ AAFM Cup or ___ 1997 Guardian Challenge
- \$10 ___ AAFM Golf Cap - dark blue with silver-gray logo Commemorative Cup
- \$20 ___ 44 Missile Wing Commemorative Book

Name _____

Member No _____

Address _____

City, St, Zip _____

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

TITAN TALES: DIARY OF A MISSILE CREW COMMANDER

The Cold War forms the background for this true story, and against that steady ebb and flow the ragged pulse of the war in Vietnam slowly rises in intensity throughout the book. Titan Tales describes two years in the life of a young Air Force officer. We see him in his daily missile crew duty, commanding a Titan ICBM, and also as a father who is learning those duties at the same time. From the missile base in Arkansas, the family travels to California for a seven-week tour that culminates in the step-by-step action of an underground launch of a Titan II. Later, the story takes us back across the United States to Florida. There are many excerpts throughout the book that describe a direct observation of nature and life which are written in a strong Zen-like quality. You may find yourself observing not just a part of nature, but a deep place within yourself. The book is also written with humor and reads with a lively pace and has a rhythm that will lead you on from page to page.

John Womack served as a crewmember in the Titan II for six years. He commanded a senior instructor crew at the alternate command posts and launched a Titan II from Vandenberg. He has presented speeches and seminars on the Titan II, and published articles in professional magazines concerning missile operation, missile safety and management techniques. After serving three tours in Vietnam, and retiring from the Air Force, he is now an outdoor photographer and free-lance writer who lives in the southern Blue Ridge Mountains. Titan Tales sells for \$15.95, and is available from the publisher as well as stores. Please send check, money orders or inquiries to Soliloquy Press, 383 Stamey Mountain Rd, Suite #2, Franklin, NC 28734.

Other Reading - *Beyond the Wild Blue*, by Walter Boyne, is an excellent history of the USAF. You may have seen the TV series earlier this summer based on the book. *The Navaho Missile Project*, by James N. Gibson, has the story of the Navaho development, with lots of photos. I found both books at a Borders bookstore.

Membership Application for the Association of Air Force Missileers

Name

Active duty ___ Retired ___

Discharged/Separated ___

Guard/Reserve ___

Civilian ___ Other ___

Rank/title _____

Missile Badge? Yes ___ No ___

Address

City

St

Zip Code

Phone

e-mail address

My name and address may be released to units, other members, reunion groups, etc.

Signature

A detailed application that documents your total missile experience will be sent upon receipt of your membership.

Suggested donation for membership -

One Year - \$20 ___ (\$5 for active duty enlisted)
 3 Years - \$50 ___ (\$14 for active duty enlisted)
 Lifetime - \$300 ___ (Payable in up twelve
 monthly installments)

Mail to:
AAFM
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Breckenridge, CO 80424