AAFM Newsletter

Association of Air Force Missileers

Volume 7, Number 1 *"Victors in the Cold War"* *March, 1999*

Atlas - Then and Now

Early Atlas Launch - AF Photo

Atlas - The First ICBM - *by Col (Ret) Charles G. Simpson, Executive Director, AAFM*

The Atlas was our first intercontinenal ballistic missile (ICBM) - the first missile to put an American astronaut into orbit around the earth - and still one of the workhorses in the United States space program. Atlas has its roots in the Convair MX-774, developed and tested in the late 1940s, during the United States Air Force's early research into missiles. Atlas continues today in its latest configurations, and Lockheed Martin, the manufacturer of the current Atlas space launch vehicles, has decided to call its newest launch vehicle the Atlas V.

The MX-774 - In late 1945, the Army Air Force began defining four categories of missiles to be developed

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The New Atlas V - *reprinted with permission from the Lockheed Martin Astronautics News*

Lockheed Martin Astronautics announced Feb 2 that launch vehicle configurations based on use of the new Common Core Booster the company is developing will be called Atlas V.

Astronautics is developing the new. more efficient, more powerful, lower cost rockets with a nix of its own investment and USAF funds. The rockets will used to competitively support the commercial and US government market for space launch services. In addition to serving the growing need for higher capability space launch services: to geostationary transfer orbit, these products are anticipated support near-term deployment of a number of large scale commercial satellite constellations. Under the Air Force Evolved Expendable Launch Vehicle (EELV) program, Astronautics was awarded

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Atlas Centaur - Lockheeded Martin Photo

In This Issue: Atlas, Then and Now...1 A Word from AAFM, Letters... 2 Taps...3 Guardian Challenge 99 ...8 WD-40 and Atlas, Models... 9 Cracked Titan II, Missile Badge Pins ...10 MMII Moved ...11 Bits and Pieces ...11

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A Word from the Association

1998 Financials - Income included dues ($21,445.38), donations ($2,071.05), interest ($217.94) and other income, including investment income ($7,602.55) for a total of $31,336.92. We carried $113.96 over from 1997 to provide a total for 1998 of $31,450.88.

Expenses included awards ($2,779.94), grants ($7,514.00), postage ($3,876.46), printing ($12,565.34) and office/admin ($4,715.14) for a total of $31,450.88. The items substantially different from budget were investment income ($7226) , printing (newsletters $5892 over budget because of color and extra copies, directory $1473 over because of larger format).

Current Assets are $47,535.74 with Cash in Bank of $5,407.70 and value of Investments $42,128.04. Current Liabilities are $45,706.74 (Prepaid Lifetime and 3 Year dues)

The Missile Badge - The comment in this column in the December issue (...most people now in both space and missiles want a common, distinctive badge...) generated a fair amount of feedback from members who are currently serving in either missile or space assignments. Most voiced strong opinions that they did not want a common badge - they want the missile badge to continue to represent missile duty and the space badge to relflect space duty. My comment was based on our discussions with AFSPC senior leaders - it sounds like the junior folks need to make their opinions known up the chain of command. We are all proud of the missile badge - it is distinctive and means a lot to all missileers. The active duty missileers need to speak out to ensure its future.

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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 - Anyone who has any Titan II artifacts or knows where they might be, no matter how seemingly inconsequential or large, is asked to contact Becky Roberts at the Titan Museum in Green Valley AZ. They particularly need a Pettibone or Coles crane and other major maintenance items. The museum telephone number is (520) 625-7736. ***Bob Eichel, mbr no A0341, Albuquerque, NM.***

Dear AAFM - I'm trying to find: (1) A copy of the MASCOT (Missile And Space Career Opportunity Text) (2) A SAC-era certificate that was called something like the "Missile Long-Timer's Award.", with a missile badge in its center and cobwebs stretching out from it on both sides. I saw these in a file cabinet drawer at Malmstrom in 1981, but never actually saw any awarded. I think they were for 10 years of crew duty, which I doubt anyone ever achieved in Minuteman, but there were probably quite a few enlisted Titan crew members who qualified for the award. I don't know why they were at Malmstrom. (3) A copy of deactivation books that were done for several missile wings: especially, Whiteman, Little Rock, McConnell, and any of the GLCM wings (I have Ellsworth). I'm willing to pay a fair price for any of these, providing they are in reasonably good condition. ***Greg Ogletree, mbr no L0049, Lompoc, CA, E-mail gregogletree@juno.com or phone 805-737-9453..***

Dear AAFM - I am almost at the end of my first year as an Air Force Junior ROTC instructor at Bonnabel High School in Kenner, Louisiana. It's the most fun I've had since I retired. I was curious to know if any other AAFM members are or were AFJROTC instructors and where.

(Continued on page 3)

Letters ***(Cont)*** - I've been promoting AAFM here and AFJROTC units are always looking for active and retired Air Force members to support their programs. This might be a good community service outlet for AAFM. ***Don Keltner, mbr no A1061 Kenner, LA***

Dear AAFM - I am in the process of donating a few miscellaneous items to the AF Museum here at Wright-Patterson before I graduate from AFIT in March. I am enclosing a copy of the descriptions I am providing with the donated items. The panels were taken from the CDB 'paper trainer' at Minot subsequent to REACT activation; some of us couldn't bear to see the parts taken to DRMO and just scrapped. Hopefully these items will contribute to the missile displays planned for the new Cold War wing of the museum scheduled to open by 2003. I'm sure the museum would be more than happy to accept additional donations by AAFM members; with the exception of the Ellsworth MPT, missile exhibits here are rather scarce. The new wing will house the museum's collection of ballistic missiles, which are currently undergoing renovation due to the deterioration they experienced while displayed outdoors for many years. ***George Nagy mbr no A0620, Fairborn, OH.***

Dear AAFM - I am looking for any information about the C-133 Cargomaster carrying the Atlas missile. My e-mail is luke1@superior.net. ***Tom Andrus, mbr no A1531, Amsterdam, NY.***

Dear AAFM - I recently read that our association had donated $1,000 to the Fairchild Museum for a display on the 567SMS. Being a dedicated missile guy I headed out one snowy February day to see what they had done. It was like going on alert at Hotel LCC at Minot again. I met Lancelot Wright, an AAFM member who was working that day. He gave me a personal tour of the work they've done. It is very impressive and will be a very great asset to our missile history. They have recreated the launch control console - all the lights and the klaxon work! They even replaced the stopwatches that were pat of the operation. Four displays depict the activities on an Atlas site and in the launch control center. I was very impressed with the work they've done. I don't give this praise lightly, as I was the project officer in charge of constructing the MMII outdoor display at Ellsworth, and know how much effort has gone into this project by many dedicated people. ***John Evan Davis, mbr no A0954, Nine Mile Falls, WA.***

Dear Gen Kelley - your check for $2,486 delighted the 8AF museum staff. We appreciate the confidence expressed in the 8AF Museum and renew our pledge to produce the finest tribute possible to USAF Missileers. As we move forward with developing the specific exhibit elements, we will be seeking the Association's guidance to ensure we produce an effective and accurate story of missile operations. Please extend my personal appreciation for this unique expression of generosity and confidence to all members of the Association. ***LtGen Buck Shuler Jr, Chairman of the Board, the Mighty Eighth Air Force Heritage Museum, Savannah, GA.***

Taps for Missileers

Colonel (Retired) Tim Sinclair served in the OSI, as a crewmember in the 351SMW (Whiteman), at SAC/DOC, at Hanscom, the Pentagon as Air Staff GLCM project officer and was the Tactical Air -Surface Missile SPO at Wright Patterson. After he retired he worked for Modern Technology Corp. at Warner Robbins.

Lieutenant Colonel (Retired) Gordon Weihs, an AAFM member who lived in Omaha, served in the 44SMW at Ellsworth, at 15AF and SAC in missile maintenance, and at Barksdale, Lakenheath, Mildenhall, Okinawa and some other short stints before his Missile days.

Colonel (Retired) Robert Zachmann, an AAFM member who lived in San Jose, was the first commander of a missile wing in the USAF - in 1956 he commanded the Matador unit, the 701st Tactical Missile Wing in Germany.

Senior Master Sergeant (Retired) Tracy Walton, an AAFM member who lived in Wichita, served in the 381SMW at McConnell.

Master Sergeant (Retired) Rex Case served in Titan I in the 569SMS at Mountain Home AFB.

AAFM National Meeting
May 2000
Colorado Springs, Colorado

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AAFM Member steering Atlas transporter

Atlas V ***(Cont)*** **-** contracts in October 1998 to complete development of a new family of rockets that will be ready for service in late 2001 and to provide streamlined launch capabilities. The Air Force envisions these new rockets will eventually replace current families of Delta, Atlas and Titan space launch vehicles for use in launching a wide range of government and commercial payloads. The Atlas V will he launched from both Cape Canaveral and Vandenberg.

"The capabilities of the Atlas V configurations span the full range of projected requirements of the satellite industry, whose spacecraft continue to grow in mass and volume," said Dr. Ray Colladay, Astronautics president. "Melding together the best practices and proven capabilities of our Atlas and Titan vehicle programs, this new Atlas V family will greatly enhance our ability to serve our international and domestic customers."

Atlas V will encompass a group of launch vehicle configurations that represent significant improvements to the company's Atlas III rockets and feature common elements, including the 12.5 ft diameter; 89 ft tall, structurally stable Common Core Booster powered by an RD-I80 engine and equipped with fixtures for solid rocket boosters that could be attached to increase capability, the common Centaur upper stage with either one or two RL10 engines, standard, flight-proven Atlas payload fairings that enclose and protect the spacecraft during launch, existing or similar payload adapters and hardware, a new, larger payload fairing, measuring 17 ft 9 in in diameter; to accommodate the large payloads envisioned with the Atlas V Heavy configuration and larger intermediate lift vehicle variants.

The baseline Atlas V intermediate configuration uses the Common Core Booster , the Centaur upper stage developed for the Atlas IIIB, and the standard payload fairings and interfaces currently in use with the Atlas II and Atlas III. The baseline intermediate class Atlas V will boost payloads weighing more than 11,020 lbs to geosynchronous transfer orbit.

The Atlas V heavy configuration uses three Common Core Boosters combined together. The common Centaur upper stage will be mounted atop the center booster and will be encapsulated in the 17 ft 9 in Contraves composite payload fairing. The Atlas V heavy vehicle will be capable of carrying payloads weighing 14,310 lbs directly to geosynchronous orbit, approximately 22,240 miles above Earth. This vehicle will be capable of delivering more than 28,660 lbs to geosynchronous transfer orbit. "Atlas products apply state-of-the art designs, materials and processes, which have resulted in new product lines with significantly higher performance and offer significantly increased value to our customers in terms of price and reliability", said Nate Lindsay, Advanced Space Launch Systems vice president and general manager. "The use of standard and 'kit-able' vehicle elements for Atlas V provides broad flexibility for the full range of medium-to heavy-lift payload customers."

In addition, because Atlas V is much more operationally efficient than previous Atlas and Titan systems, significantly less time will be required to process and prepare each vehicle for launch, enabling much greater flexibility in launch manifesting. The

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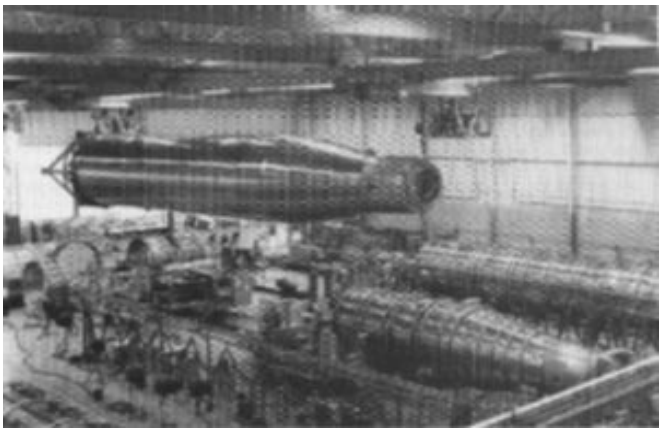

Atlas ICBM assembly at Convair

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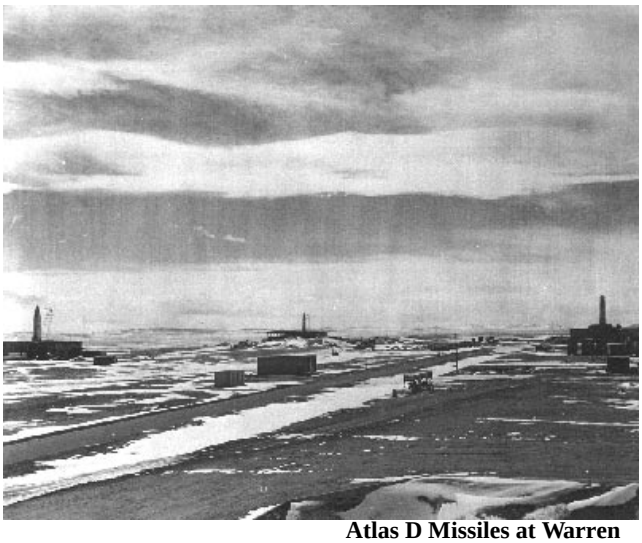
Atlas V ***(Cont)*** - hardware and software elements that make up the Atlas V are a combination of new hardware and components that will be flight-proven on existing Atlas configurations. The Common Core Booster will be powered by the new RD-180 engine using liquid oxygen and kerosene propellants. The basic RD-I80 is anticipated to be flight-proven on Atlas III a full two years prior to its first use for Atlas V. To date, 13 RD-180 engines have been test fired for a total of more than 12,500 seconds to validate the booster propulsion systems - this is equivalent to the cumulative engine run-time for 55 Atlas V flights. The RD-180 and booster propulsion systems will undergo additional validations for other specific Atlas V applications.

The common Centaur upper stage uses liquid oxygen and liquid hydrogen propellants and has the performance option of using one or two RL10 engines. The new Centaur will be flight-proven on the Atlas III configuration more than a year before first use on Atlas V.

Astronautics in Denver has overall responsibility for the Atlas V launch vehicle. Astronautics' Harlingen Operations builds metallic payload fairings, interstage adapters and aft thrust structures. The company's San Diego Operations welds Centaur structures. Astronautics' Launch Operations organization at Cape Canaveral and Vandenberg oversees launch site operations for all Lockheed Martin configurations. Other members of Lockheed Martin's Atlas V team include RD AMROSS, LLC (a joint venture of Pratt & Whitney, West Paint Beach and NPO Energormash, Khimky, Russia) - RD-180 engine for the Common Core booster (P&W also provides the Centaur RL10 engine); Contraves Space, Zurich, Switzerland - composite payIoad fairings; CASA, Madrid, Spain conical interstage adapters; Honeywell, Clearwater, Fla - avionics system; Hensel Phelps, Greeley, Colo. - general contractor for launch site activation, AJT & Associates, Cape Canaveral, Fla - design of launch facilities and GenCorp Aerojet, Sacramento Calif. - solid rocket motors. ***(Common Core Booster is a Lockheed Martin Trademark)***



Atlas D Missiles at Warren

Atlas - First ICBM ***(Cont)*** - over the next ten years. The Consolidated Vultee Aircraft Corporation (Convair) proposed, and received funding to study a supersonic, ballistic, rocket-powered missile capable of delivering a 5,000 pound warhead over ranges up to 5,000 miles with an accuracy of 5,000 feet. Convair project manager Karl J. Bossart led the team that began work on this revolutionary new weapon system.

While the design of the MX-774 was, in some ways, a takeoff from the German V-2 ballistic missile, Bossart and his team made many significant improvements in missile design. The V-2 used double wall propellant tanks - the MX-774 used the external skin as the skin of the tanks. The entire V-2 reentered the atmosphere with its warhead - the MX-774 warhead separated from the missile after powered flight ended. The MX-774 used swiveling, or gimbaled engines, eliminating the need for steering vanes.

In 1947, after deciding that ballistic missiles wouldn't provide any tangible results in the next eight to ten years, the Army Air Force decided that cruise missiles like Snark and Navaho held more promise for the future. Convair was allowed to continue testing of the three test vehicles under construction. Both of the first two tests failed because of engine failure, the first at one mile altitude and the second at ten miles. The third and final flight lasted for 51 seconds, but also exploded due to a liquid oxygen valve closing unexpectedly. The tests

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Atlas D Erected and Loaded

Atlas - First ICBM ***(Cont)*** - did prove the concepts of gimbaling engines, lightweight airframe construction, nose cone separation and the autopilot and command system.

MX-1593, Project Atlas - After cancellation of the MX-774, the new United States Air Force funded a Convair study of a long-range missile capable of carrying an 8,000 pound warhead a distance of 5,000 miles, with an accuracy (circular error probable) of 1,500 feet. Convair took the Atlas name from its parent company, the Atlas Corporation. The ballistic missile concept would be a 160 foot long, 12 foot diameter missile using the North American alcohol-LOX 120,000 pound thrust engine developed for the Navaho combined with a Reaction Motors 20,000 pound thrust engine. The Atlas would have five or seven engines, would carry a 7,000 pound warhead and would have a CEP of 1 mile.

Over the next few years, until late 1954, several factors impacted the development of the Atlas and ballistic missiles in general. A roles and mission disagreement between the Army and Air Force went on for some time - the Army contending that missiles were "artillery" and should all be under the control of the Army. The size of nuclear weapons was decreasing as more weapons were tested, and advances in technology allowed changes in the concepts for design of ballistic missiles. Over this period, the configuration of Atlas was somewhat fluid - the size and weight, number of engines and warhead weight were all factors that varied as discussions and studies continued.

Finally, during 1954, plans for Air Force ballistic missiles firmed up. The Western Development Division, under Major General Bernard Schriever, was formed in Los Angeles to oversee ballistic missile development.

WS-107A, the SM-65 - In early 1955, the configuration for Atlas was finalized - a 240,000 pound vehicle with two 135,000 pound thrust North American rocket engines and a third sustainer engine of 60,000 pounds thrust. At the same time the "stage and a half" Atlas was approved, the two-stage Titan I was also approved for development. This two-track system provided a backup in case one concept failed, and was reflected in the development of guidance systems and other subsystems. Throughout the development of the two missiles, the basing configuration also remained fluid, with the total number of missiles, missile sites, radio guidance sites and missile units and bases reviewed and changed numerous times.

First Flights - the first test launch of an Atlas, an A model with only the two booster engines, took place at Patrick AFB, Florida on 11 June 1957. The engines failed shortly after launch and the missile was destroyed after less than a minute of flight. The second test, on 25 September, also failed for the same reason. On 17 December 1957, the third Atlas launched for two full minutes of powered flight and was declared a complete success.

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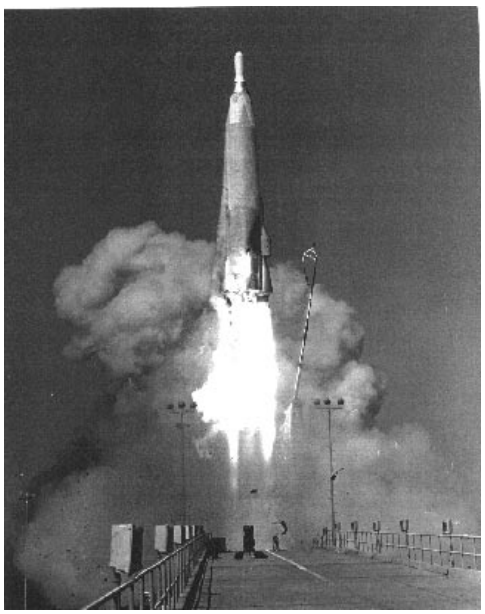

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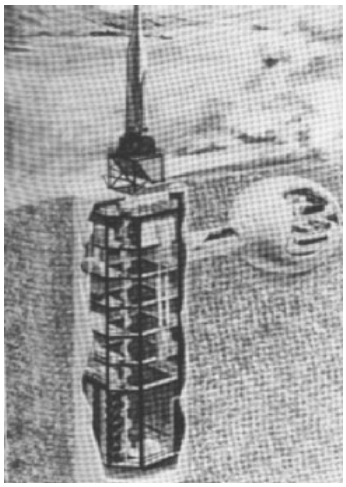

Atlas F Silo

Atlas - First ICBM *(Cont)* - Atlas D - The 360,000 pound thrust SM-65D, later the PGM and CGM-16D, was deployed at Vandenberg AFB, California, in the 576th Strategic Missile Squadron (SMS), at Francis E. Warren AFB, Wyoming in the 564SMS and 565SMS and in the 566SMS (later the 549SMS) at Offutt AFB, Nebraska. The first Vandenberg missiles were deployed in soft complexes with gantries. The Warren and Offutt configuration included three above ground "coffins" at each site, with three missiles, a control center and a radio guidance system. A single missile crew controlled three missiles. The 564SMS had two sites, the other two squadrons had three each. At the Atlas D operational sites, the roof of the coffin was rolled back, the missile erected from horizontal to vertical, liquid oxygen and rocket propellant (RP-1) added and the missile was then ready for launch. Each site could launch one missile at time - the radio guidance system would guide one missile to completion of powered flight before the second was launched. The first Atlas missile was placed on alert at Vandenberg on 31 October 1959.

Atlas E - The SM-65E (CGM-16E) had improved engines for a total of 389,000 pounds of thrust, a larger warhead and all-inertial guidance. Each of the three Atlas E squadrons (567SMS at Fairchild AFB, Washington, 549SMS (later the 566SMS) at Warren and the 548SMS at Forbes AFB, Kansas) had nine missile sites. The 576SMS at Vandenberg had one Atlas E site. The E sites consisted of a "semi-hard" coffin with the roof at ground level. Like the Atlas D, the roof was retracted, the missile erected, propellants loaded and the missile was ready for launch. Since each site was independent, with all-inertial guidance, a separate launch crew manned each missile site.

Atlas F - The SM-65F (HGM-16F) had 390,000 pounds of thrust and all-inertial guidance. The Atlas F was deployed in a hardened silo with an adjacent control center, with one combat crew per missile. Each of the six Atlas F squadrons had twelve silos scattered around the support base. These were the 550SMS, Schilling AFB, Kansas, the 551SMS, Lincoln AFB, Nebraska, the 556SMS, Plattsburgh AFB, New York, the 577SMS, Altus AFB, Oklahoma, the 578SMS, Dyess AFB, Texas and the 579SMS, Walker AFB, New Mexico. The Atlas F sat vertically in the silo on a giant elevator platform. At the start of the launch sequence, the liquid oxygen was loaded onto the missile from the underground LOX storage tank, then the two large blast doors over the silo opened and the elevator raised the missile topside for launch.

Pressurization and Stretch - The airframe of the Atlas is unique - the missile is a thin stainless steel shell that depends on the presence the propellants to maintain its structure. One of the revolutionary developments of Bossart's original MX-774 group, this design results in a lighter airframe, but requires constant attention to ensure that the missile doesn't collapse. When the missile is empty of fuel and oxidizer, it must be in "stretch" or pressurized, whether it is in the silo or coffin or on the

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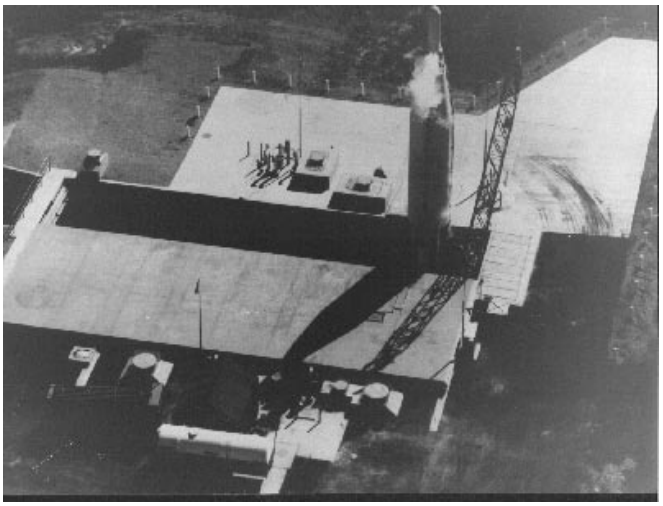
Fairchild Atlas E



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Atlas - First ICBM ***(Cont)*** **-**missile trailer used to transport it. If the stretch mechanism is disconnected without pressure in the missile, it collapses like a flat tube of toothpaste. A number of missiles were lost during the period that Atlas was operational as an ICBM.

Lox-Loading Exercises - throughout the operational life of the Atlas, simulated launch exercises were conducted to verify the launch capabilities of the missiles. Every missile was tested a number of times during its lifetime, and an intensive test of all Atlas ICBMs was conducted immediately after the Cuban Crisis. Early operational readiness inspections (ORIs) conducted by the Strategic Air Command indicated reliability problems with both Atlas and Titan I, and missile units regularly failed inspections in the early years. An ORI at an Atlas unit was a two-week period filled with intense activity. When the Inspector General team landed at the base, the unit was told to prepare its missiles for dual-propellant loadings. Base maintenance teams removed the warhead and replaced the explosive ordnance with simulators, and television cameras were placed around the coffin or silo. Each missile was exercised independently, with a simulated launch message initiating each countdown. The missile crew, with the IG team members looking over their shoulders, went through the entire launch countdown, with successful missiles completing a simulated flight to their targets. ORI standards dictated that about two thirds of the unit's missiles must be successful for the unit to pass the ORI - few Atlas units were able to pass during the short life of the system. Several dual propellant loadings were spectacular failures - three at Walker and one at Altus. The failures resulted in explosions that destroyed the missile silos. Walker troops joked about the "early" phaseout of the 579SMS. Atlas was an exciting system for crewmembers and maintenance.

Atlas and Space - The brand new Atlas entered the space business early in its lifetime - in September, 1959, an Atlas D was the booster for the first Project Mercury test flight (Big Joe I), and on 20 February1962, an Atlas carried John Glenn to orbit around the earth. For forty years, Atlas has been the booster for satellites, space probes, moon and solar system missions and more, using a variety of upper stages, including the Agena and Centaur. Atlas missiles are still being manufactured by Lockheed Martin in Denver, and will continue to be a space workhorse well into the next century.

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Jeez Grandpa...that's where you used to work on missiles? It looks like an empty field!

First in the new series "The Cold Warrior" by Bill Mckee. Bill provided the cartoons for our recent book "Air Force Missileers." His "Missile Business" book is available.

GUARDIAN CHALLENGE 99

AIR FORCE SPACE COMMAND

Guardian Challenge 1999

The 1999 Space and Missile Competition is scheduled for 3-6 May at Vandenberg. Competitors from the three ICBM and four space wings will compete in the 32nd annual competion, begun as Curtain Raiser in 1967. AAFM will be there with a new display and will again present commemorative coins to each competitor.

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WD-40 and Atlas - *By Ron Plante, member number SA015. Ron lives in Bettendorf Iowa, and works for the Corps of Engineers, involved with cleanup of old Atlas and Titan sites.*

Certainly everyone has heard of (if not used) this handy lubricant/penetrant/rust displacer/etc. What you may not know is that it was originally developed for Convair and the Atlas program.

When I read this in a newpaper article, I wrote the manufacturer for more specific information. Unfortunately, all they sent was a general summary of the company history. According to this history, WD-40 (WD for Water Displacement, 40 for their fortieth attempt) was developed by the Rocket Chemical Company in 1953 to protect metals from rust and corrosion. At that time, the specific customer was Convair, which used it to protect missile skins. WD-40 "...was eventually specified for use on NASA's Atlas missile."

WD-40 Company History - Some Excerpts

1952 - Rocket Chemical Company, San Diego, California, develops a line of rust resisting and rust removing products for metal patts and tools. These industrial chemicals are designed exclusively for use in the aerospace mdustry. The company consists of three persons in one small room including Mr. Norm Larson who, with the fmancial support of three San Diego investors, started the company from inception.

1953 - WD-40 is developed by Rocket Chemical Company. This is a "Water-Displacement" formulation that was successfully achieved on the fortieth attempt, hence the name WD-40. The formulation served the function of displacing (removing) moisture from metal, and protecting metals from rust and corrosion. It was developed for Convair, an aerospace and defense contractor, for use in protecting missile skins. It was eventually specified for use on NASA's Atlas missile. Today's WD-40 is comprised of this original formulation.

1955 - Norm Larson experiments with putting WD-40 into aerosol cans. He determines that the product may have potential in consumer markets.

1959 -Rocket Chemical Company contracts with an aerosol packager to package the product for consumer markets.

1961 - The first truckload order for WD-40 is filled. The entire warehouse was emptied as employees came in on a Saturday to produce additional concentrate to meet disaster needs of the victims of hurricane "Carla" along the Florida coast. WD-40 was used to recondition flood and rain damaged vehicles and equipment. Also a light scent was added to the WD-40 formula to overcome the smell of the petroleum distillates. The was to be the only modification ever made to the original formula. The propellant was changed once to eliminate chioroflurocarbons for environmental protection.

1969 - The name of the company becomes the WD-40 Company.

There must be some members who can add to this. Did operational units ever use WD-40?

Missile Models - *by Scott Mattson, member number A0924. He lives in Cheyenne.*

Most people whose career involved them intimately with a machine like to have a replica of it on their desk, in their study, etc. Missileers are no exception. Unfortunately, missiles don't seem to evoke the romance that bombers and fighters do. It's almost ironic. There are plenty of B-52 models available, but you have to put a man in a capsule atop an Atlas D to get someone to make a model of it; i.e. Revell's Mercury/Atlas with launching pad. It can still be found in the larger hobby shops. The same can be said of many of the space launch vehicles. Several models are available of the Saturn V and Space Shuttle, but they aren't missiles, are they? There are a few missiles available in plastic kits, and one replica company will make you a copy of your favorite missile.. for a price.

Revell did a series called "History Makers" and re-issued a Snark, Bomarc, Redstone, Nike-Hercules, a Thor/Jupiter IRBM set and a Jupiter-C. All had detailed launch platforms. That was a while ago, although one might be able to find one if you look around. Glencoe Models still offers a nice Jupiter-C, but this is really just a satellite booster. The Russian company APEX offers a pretty sharp model of the first Russian ICBM, Old # 7 as the Sputnik booster. It wouldn't take much to alter it to look like an ICBM. Mach 2 of France offers a series of Thor-based boosters, Including nice versions of the Thor IRBM test and operational missiles. I just received their Thor-Agena model (booster for the Discoverer recon sat

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Models (Cont) - ellites) and it's a decent kit (1/48 scale). Monogram makes its kit of USSR/US missiles. This kit contains nice models of the Titan II, MM III, Peacekeeper, SS-19, and SS-18, among others. The only problem is the missiles are rather small. The Titan II is only 8" tall. You can still find the old Monogram kit which contained 36 US missiles, including an Atlas. This kit does not contain the detail of the later one. Your local hobby shop can order you some of these, or "Fine Scale Modeler" magazine also has some sources and leads.

If you are really desperate, you can beg for some old retired missileer to give/sell you one of his "extra" models/replicas or you can pay Rick Tyson of "Replicas by Tyson" to make you one. Rick and I have done some work for each other in the past. I researched missile configurations for him and he did Atlas F and Titan I replicas for me. The work done by Rick's company is top-notch, but you pay what you get! His number is 937-473-5726. That about covers it. Perhaps if we missileers create enough demand, the model companies will issue more of "our" machines.

The Cracked Titan II *- by Colonel (Ret) Ron Buchert, member number A1460. He lives in Tampa.*

In the late sixties one of the Titan II missiles at McConnell was taken off alert when the longeron (the rod on the side of the missile that extends from top to bottom through both stages) cracked. The missile was recycled, brought back to the MIMS hangar, and parked while the experts decided what to do about it. Numerous people came to view it because nothing similar had happened before. One day the lieutenant general who commanded 8th AF decided to fly all the way from Westover AFB to view the crack. We had just completed one of those annual - it seemed - NAF missile wing realignments and each numbered air force (NAF) was assigned at least one Minuteman and one Titan wing. This meant that McConnell and Whiteman now reported to a NAF 2000 miles away instead of to their old NAF, Barksdale AFB. The visit was to be very short: land, see the missile, take-off and go home.

When the general landed the wing commander, vice commander, DCM, DCO, TAC wing commander (the 381st was a tenant on an F-105 training base), base commander, and many others met him. The entire group traveled by caravan to the MIMS hangar where they were met by another cast of thousands. When they reached the missile the DCM and the MIMS commander steadied the ladder while the wing commander assisted the general to climb the ladder and everyone else watched except the MIMS senior chief who accompanied the general up the ladder to explain the problem.

The general said nothing during the explanation and after a few minutes he and the chief climbed down. At the bottom of the ladder the general turned to the wing commander and said "The ladder needs painting." and turned to leave. The convoy returned to the general's aircraft, took off, and went home to Westover. Of course the general probably said something additional en route to the aircraft but the ladder comment was all that most people present heard.

Reunions -

390SMW - Excaliber Hotel, Las Vegas, 5-8 Oct 1999. Contact 390th SMW Memorial Association, P.O. Box 17916, Tucson, AZ 85731, by calling (520) 886-3430, or Harry Helt at jolene@azstarnet.com.

578SMS - 22-23 October1999 in Las Vegas. Contact Gene Wilson at mftr59@yahoo.com or Stan Socha, 5889 N Center Rd, Saginaw, MI 48604.

Missile Badge Pins

Landstrom's Jewelers is making original Black Hills Gold missile badge tie tack/lapel pins available to AAFM. The badges incude a very small double leaf at the bottom of the badge (about as wide as the bottom of the badge and about as deep as half of the star on the senior badge, and come in gold or silver.

Available are the basic badge ($59.20 gold, $29.60 silver), senior badge with star ($72 gold, $36 silver), master with wreath and star ($94.40 gold, $47.20 silver) and master with operations designator ($108 gold, $54 silver). Prices include shipping and insurance

Send a check made out to Landstrom's Jewelers to AAFM, Box 5693, Breckenridge, CO 80424. Include the address the pins should be shipped to - they will be shipped direct from Landstrom's about two weeks after ordering.

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March Museum Minuteman II

Minuteman II Relocated - *by Paul*

Trainor, mbr no A0532, Moreno Valley, CA

On 25 Feb 99 the March Field Museum had a contractor install the Minuteman II missile in front of the museum. The missile had been removed by the contractor several weeks earlier from its former location on the left side of the road just after going inside the old main gate used at March AFB. The relocation move cost the museum around $18,000, which was helped considerably by AAFM's $3,000 grant. The old white paint was sanded off in preparation for a new white coat, which will be applied soon.

The first stage is a brown-red rust due to some rain; the second stage apparently consists of a non-rusting metal alloy, the third stage is wound-up threads of Kevlar, the RV-Guidance stage is mostly scratch-built sheet metal already painted with a grey primer.

Bits and Pieces

UK Base - I am researching the history for RAF Melton Mowbray, Leicestershire, England and would like to hear from anyone who was stationed there with the USAF, 1959 - 1963. Brian Fare, 73 Baldocks Lane, Melton Mowbray, Leicestershire, England, UK, LE13 1EW, e-mail bjf@fare38.freeserve.co.uk

Book Research - In 1965, an Air Force satellite called OV-1 was apparently launched from the same Atlas missile that was carrying a test reentry vehicle. I'm not sure whether this was a scheduled Atlas FOT&E shot and they added the satellite, or if the whole thing was set up as a special test to see if you could deploy an RV and a satellite on the same launch. Anyone with information

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Bits ***(Cont)*** - on this program, please Email Matt Bille at MattWriter@AOL.com or phone 719-592-9057. Matt is mbr no A0923 and lives in Colorado Springts.

Model Rockets - The High Power Rocketry Association , called "Tripoli Rocketry Association" has existed over 30 years. It is high power because thethrust of the motors we use ranges from 20-400 pounds with a burn time of 1-10 seconds. The organization covers the US andl a few other countries, with 3,000 members. The web site is www.tripoli.org/.

People Searches - Looking for Roger Carlson, who was on a Titian II crew in the 1960's. Call Shirley Foxwell at: 757-484-7631. Looking for McConnell BMAT Tom Lach, MCCC John Marsh, MCCC Ron Falter and DMCCC Ron Rehm. Contact AAFM if you know them.

308SMW Book - I would like a copy of the Little Rock Deactivation Book. Charlie Letteer, mbr nr A1286, Lancaster, PA, phone 717-796-3466.

December Article - The Fairchild Goose never went into production, but the Bell Rascal was operational for a couple years at Pinecastle AFB with DB-47s in the 321st BW. Ron Plante, mbr no SA015, Bettendorf, IA.

ALCS - A Marine officer, the first, recently qualified in the ALCS system aboard the E-6B ABNCP. The ABNCP is still known as the "Looking Glass" when it is performing that role-it's "TACAMO" when doing it's SLBM mission. A fine point but clearly a distinction (and some heritage to go along with it). Two former EC-135s are being reconfigured for WC-135 missions and Open Skies Treaty verification roles. Brian Hanson, mbr no A0748, Omaha, NE.

Cold War Recognition - A Cold War Recognition Certificate will soon be available to personnel who faithfully served the during the Cold War era from 2 Sep 1945 to26 Dec 1991. Online application is preferred; however and will begin in April, with application and instructions available at: http://147.103.18.232/. When more information becomes available, AAFM will let you know.

Space Ops - The Air Force Space Operations Association invites you to join an organization dedicated to enhancing the professionalism of AF space operations through recognition of excellence and the documentation of a proud heritage. The preservation of past personal and professional associations is also one of our objectives. AFSOA MEMBERSHIP. % Bill Clark, 19404 Shubert Drive, Saratoga, CA 95070-4048; e-mail: whrclark@juno.com

Chapters - If you are an Air Force Association member, have you joined your local chapter? In the Denver area,, the Mile Hi Chapter is looking for members. The same applies to members of the Air Force Sergeants, The Retired Officers Association and other professional military organizations. If you aren't active in your local chapter, you may be missing something.

Pioneers - The Lance P. Sijan AFA Chapter in Colorado Springs has a collection of Space and Missile Pioneer Hall of Fame Lithographs and posters available. At the suggestion of Air Force Space Command the chapter commissioned artist, Jay Ashurst, to create artwork acknowledging the efforts of 12 distinguished space and missile pioneers. The artwork is on display ,in the Headquarters, AFSPC building and referred to as the centerpiece of the Space and Missile Hall of Fame program. The following Space and Missile Pioneers have signed the lithograph in pencil: Mr. James Plummer, General Schriever, Lt. Gen. Charles H. Terhune, Jr., Major General Richard D. Curtin. Brigadier General William G. King and Colonel Frederic Oder. For information contact Chuck Zimkas at 719-576-8000.

SAC 2000 - the 54th anniversary reunion of SAC is being celebrated in Omaha 12-16 July 2000. Contact the Society of the Strategic Air Command, PO Box 1244, Bellevue, NE 68005.

Missile Heritage Fund - our grants to museums continue to grow, thanks to the generosity of ***AAFM*** members. Contribute and receive an ***AAFM*** memento to recognize your donation.

$5 - choose an ***AAFM*** lapel pin, ***AAFM*** patch, Subterranean Sentinels Patch, Bill McKee's "Missile Business Cartoon" Book, Bob Wycoff"s poems ("Missileer") or reprints of 1993-1994 newsletters.

$8 - choose an engraved ***AAFM*** ball point pen, ***AAFM*** mug, special 10/30/50 Anniversary mug (honoring the anniversaries of AFSPC, the competition and the USAF or "History of the Missile Badge"

$10 - choose an ***AAFM*** golf cap, 1998 Guardian Challenge/***AAFM*** coin, 1995-1997 newsletter reprints or ***AAFM*** Desk CLock.

$20 - the 44th Missile Wing Commemorative Book.

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