The Bomber Heritage of the ICBM Force

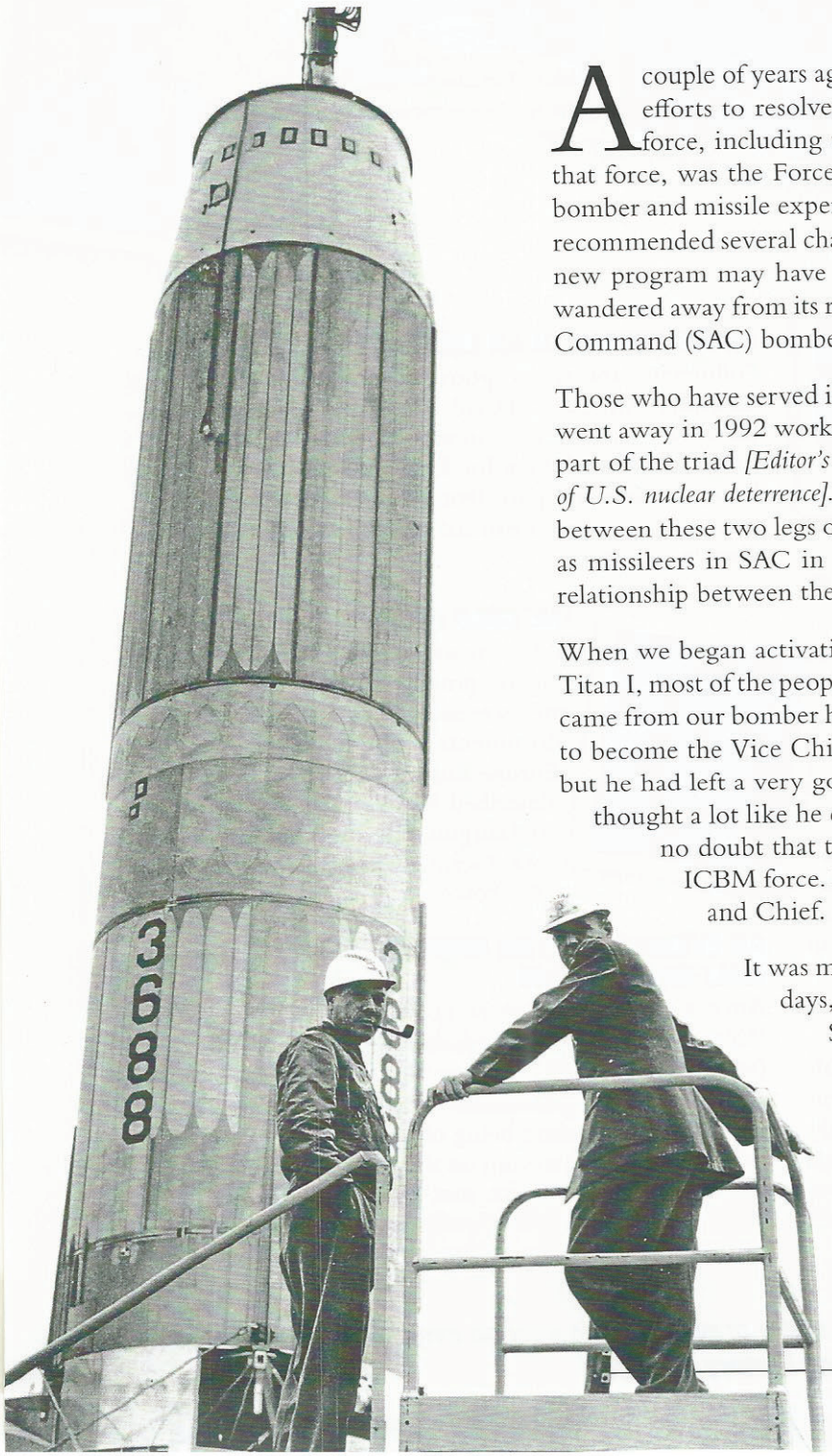
by **COL CHARLIE SIMPSON, USAF (RET)**

A couple of years ago, one of Air Force Global Strike Command's many efforts to resolve some of the issues in the nation's nuclear deterrent force, including the intercontinental ballistic missile (ICBM) part of that force, was the Force Improvement Program. A task force, comprised of bomber and missile experts, looked at the way we did things in each area, and recommended several changes based on the bomber model. In some ways, this new program may have indicated that the ICBM force had, over the years, wandered away from its roots — roots deep in the heritage of the Strategic Air Command (SAC) bomber force.

Those who have served in the ICBM force in the twenty-five years since SAC went away in 1992 worked in an arena separate and distinct from the bomber part of the triad *[Editor's Note: bombers, missiles and submarines make up the triad of U.S. nuclear deterrence].* But before that time, a lot of things were common between these two legs of our nuclear deterrent force. Those of us who served as missileers in SAC in the early years are especially cognizant of the close relationship between the missile and bomber parts of SAC.

When we began activating the early missle units, from the Snark to Atlas to Titan I, most of the people, most of the philosophy, and most of the procedures came from our bomber heritage. General Curtis LeMay had moved from SAC to become the Vice Chief of Staff of the U.S. Air Force, and then the Chief, but he had left a very good leader in his place, General Thomas Power, who thought a lot like he did. Those of us new to SAC's ICBM career field had no doubt that these two imprinted the bomber philosophy onto the ICBM force. LeMay kept a close watch on it all, both as Vice Chief and Chief.

It was more than just the bomber philosophy — in the earliest days, our missiles even had bomber (B) designations. Snark was initially the B-62, Atlas the B-65, and Titan the B-68. However, it wasn't long before those designations were changed, with introduction of the Strategic Missile (SM) designator, so Snark became the SM-62, Atlas the SM-65 and Titan the SM-68.



◀ Two senior officers observing emplacement of the first stage of a Titan I missile at one of the Lowry sites, circa 1961 or early 1962.

ORGANIZATIONS

In the late 1950s, the Air Force began activating the first missile units, including the Snark missile wing at Presque Isle Air Force Base (AFB), Maine, and the early Jupiter, Thor, and Atlas units. At the same time SAC and the Air Force were also in the middle of a very significant change in the way the entire Air Force was organized. I came into the Air Force in 1959 in aircraft maintenance, right in the middle of that major effort. Until that time, the Air Force was still basically organized along the lines of the World War II units. We had bomb groups and fighter groups — and in the case of early Matador and Mace, missile groups — and operations and maintenance were pretty well integrated at the squadron level. The commander of an aircraft squadron had his own internal maintenance capability. While some of the heavy maintenance was assigned to maintenance-specific units, most of the folks who maintained the unit's aircraft were part of the squadron.

SAC began centralizing maintenance efforts and changing the way units were organized during the 1950s. General LeMay was a strong advocate of standardization, and the new programs ensured that. The new wing model that became common eventually evolved into the tri-deputate system, and while other changes occurred over the years the idea basically stayed the same.

A bomb wing commander initially had two deputy commanders, and later three, plus a base commander, all colonels, with responsibilities clearly assigned based on function. Initially, the Deputy Commander for Operations (DCO) oversaw the two, or three, or four operations squadrons that were part of the wing. A Boeing B-47 Stratojet wing might have three bomb squadrons with B-47 aircraft and one tanker squadron with Boeing KC-97 Stratofreighters. The bomber crews were assigned to the squadrons, but a lot of the training and evaluation staff, including some crews, were assigned to staff functions under the DCO.

Operations crews were called "integral crews" and did everything together. The alert, flying and training schedules were all by crew, not by individual. To illustrate how firm that concept was, when SAC implemented the Spot Promotion System, a program to temporarily promote all members of a crew one rank due to exceptional performance, the promotions were only effective as long as the crew maintained that high performance level. If one crew member faltered on an evaluation or in some other way, the whole crew reverted back to the original rank.

Maintenance was under the Deputy Commander for Maintenance (DCM). The DCM had squadrons for what was called organizational maintenance (the-day-to-day upkeep of the aircraft) and field level maintenance (more complex or specialized maintenance tasks, like air-frame repair, engines, hydraulics, etc.).

Initially, the base commander was responsible for all the support activities, including transportation, supply, civil engineering, personnel, services, security and the myriad other activities involved with keeping a base up and running. But along the way, the Air Force leadership decided to add a third deputate, the Deputy Commander for Resources, so the transportation, supply, and accounting and finance functions became part of that deputate.

Most of the early operational missile units were free-standing squadrons, assigned to a bomber base with a B-47 or Boeing B-52 Stratofortress wing. The only independent operational missile wings were the 706th/389th Strategic Missile Wing (SMW), the Atlas unit at F.E. Warren AFB, Wyoming, which had been a training base but became strictly a missile base; ☛

◀ Staff sergeant and airman working on one of the four diesel generators in a Titan I powerhouse.

and the 703rd/451st SMW, the Titan I unit at Lowry AFB, Colorado, which continued to be a major training base. All of the others, like the 569th Strategic Missile Squadron (SMS) at Mountain Home AFB, Idaho, where I started my missile career, were part of the bomb wing on the host base. At Mountain Home that was the 9th Bomb Wing, a B-47 unit.

The two independent missile wings were organized and manned in the same manner as the bomb wings, with all the operations functions under the DCO and maintenance the responsibility of the DCM. Since Lowry was an Air Training Command base, the support functions weren't part of the missile wing, but under the host commander at the training center.

The free-standing squadrons were almost mini-wings. The squadron commander, a colonel, reported directly to the bomb wing commander, and had a lieutenant colonel deputy commander. Each squadron had a chief of operations and chief of maintenance, along with some administrative functions. Both the operations and maintenance deputates were organized along the same lines as at wing level.

The Chief of Operations oversaw the combat crews and all activities involved with their training and evaluation, while the Chief of Maintenance had similar responsibilities on the maintenance side of the house. At the organizational maintenance level, the Atlas and Titan I units were somewhat different due to the system configuration. A Titan I squadron had three large sites, each with three missiles, and the organizational (day-to-day) maintenance specialists were assigned to one of the sites. Each site had a site commander (who basically worked for the squadron commander), a maintenance officer and NCO (both of whom who worked for the Chief of Maintenance), and up to 100 missile maintenance, missile facility, power production, electrical, plumbing and other specialties whose day-to-day duty station was a specific missile site. The field level (more complex or specialized maintenance) specialists were assigned to shops in the squadron facilities back on the base, and included guidance, pneudraulics *[Editor's Note: pneudraulics describes a system that uses either, or a combination of, pneumatics and hydraulics]*, engine, electronic and other areas. They were dispatched to the sites as needed for specific maintenance tasks. Some functions, like communications, munitions, sheet metal, machine shops and other heavy tasks were performed by maintainers from the host bomb wing who were either part of the bomb wing DCM organization or the base civil engineer function. Communications and munitions specialists were, in some cases, missile-unique.

The missile units depended on the host bomb wing for all the support functions, from personnel to security to food services. There was one command post on base, under the bomb wing, usually with no missileers assigned. The bomb wing controllers, officer and enlisted, were trained in the basics of the missile systems, although many times it was a real chore to try to explain to a bomber pilot why he had to report a Titan I off alert.

DIRECTIVES, STANDARDIZATION, EVALUATION AND INSPECTION

SAC was big on making sure everything was clearly spelled out for every function. SAC Manual (SACM) 66-1 was the forerunner of Air Force Manual (AFM) 66-1, the big book that became the maintenance "bible" in the late 1950s. The ideas grew partly out of General LeMay's demand that every person had a manual or book or regulation that clearly defined his job. In his biography, *Mission with LeMay*, he said, "We lined up every chore in the Command, and found people who know how that chore should be run. O. K., get down to business and write a manual. I want a manual for every soul who has a job to do." General LeMay also had some words about perfection, "We made every man concentrate on being as nearly perfect as possible, in his own specific enterprise. Hell, we made every man concentrate on being perfect."

In those days, the publications weren't "instructions," they were very clearly defined rules that must be followed. When AFM 66-1 became the single directive governing maintenance in the Air Force, the manual was based strongly on its SAC roots. But that wasn't enough for SAC. Every Air Force manual or regulation had many pages of SAC supplements; SAC's "clarification" of the Air Force directive. In the case of AFM 66-1, there were almost as many SAC supplement pages as there were original white Air Force pages. But SAC went even further, and published SAC manuals in specific areas. For example, SACM 66-12 included much more detailed guidance for ICBM maintenance, and there were similar manuals in all the other areas of operations, maintenance and support for both aircraft and missile units. I spent three years as the Job Control Officer in the Titan squadron, and SACM 66-12 had very specific directives for our day-to-day functions, everything from the type of displays we used to how

we filed our reports. The aircraft side of SAC had the same kind of specific guidance, and sometimes it took a lot of effort to convince the command experts at SAC Headquarters that the "aircraft rules" in our manuals didn't really work for missiles. Sometimes they modified the rules for us, and sometimes we did it the "aircraft way."

▲ 321st Strategic Missile Wing Crew of the Quarter, 3rd quarter 1966 — left to right: Col Ronald Brumbaugh, 321 SMW/Deputy Commander for Operations, Crew S-069, Major Joe B Lear, missile combat crew commander (MCCC), Capt Charles G Simpson, Alternate MCCC, and Capt Garret D Grim, Deputy MCCC

When I transitioned to operations in 1965, I quickly discovered that the ops world was the same — now the manuals started with 50 or 55 instead of 66, but there were detailed directives for everything, far and above what the basic Air Force manuals and regulations contained. And, as in missile maintenance, some of the rules for missile ops training and evaluation were the same as those that "had always been that way" for the aircraft folks. We got some changed to be more missile-specific, but we just had to learn to live with a lot of the SAC way of doing tasks.

By the end of the summer in 1962, most of the Atlas and Titan I units were operational and we were working hard to keep our missiles on alert. The aircraft side of SAC had a rigorous evaluation and inspection system, one that was basically adapted across the board to missiles.

The SAC Inspector General (IG) team was supposed to come at least once per year for an Operational Readiness Inspection (ORI), which, in our case, meant a full propellant loading exercise on each of our nine missiles for each ORI. Almost all of the initial IG team members had come from the aircraft side, and even those with some limited missile experience had spent years in aircraft operations or maintenance prior to joining the missile IG team.

SAC had also been a long-time user of two teams to evaluate performance on the aircraft side; the Combat Evaluation Group for operations and the Maintenance Standardization Evaluation Team for maintenance. These two teams visited each aircraft wing every six to twelve months, giving complete and partial evaluations to aircrew members and maintainers. The people on these teams were the real experts in day-to-day operations and maintenance and were handpicked from the units. These teams looked very closely at wing evaluation and training programs, and watched unit standardization and quality control evaluators check the line crews and line maintenance teams in the wings.

This standardization/evaluation concept was adopted fully by the missileers. A single unit, the 3901st Strategic Missile Evaluation Squadron (SMES), was activated at Vandenberg in 1961, manned with operations crew and program evaluators, maintenance quality control evaluators in every specialty that the wings had, along with missile munitions, missile communications and missile facility (civil engineering) specialists.

During the 30-plus-year life of the 3901st SMES, the best people were selected from the operational units for duty in the squadron, and the 3901st SMES visited every missile wing for two weeks, every six months throughout those years. As we began operation with the new Atlas and Titan missiles, a combined SAC IG/3901st SMES team came to visit to assist us in getting started the SAC way, ensuring we were in compliance with all of the SAC directives and well aware of all the headquarters requirements in every area. The visit included our ☛

first look at an ORI, since we had to exercise our missiles for the team. Every squadron had great difficulty, and, while this was called a practice ORI, we knew that the next visit would be the real thing.

Throughout the life of Atlas and Titan I, the SAC IG team was augmented by 3901st SMES experts, since people in that squadron had the real expertise in the system. The IG team members took care of the details involved with our compliance with Air Force and SAC manuals and regulations, while the 3901st SMES people made sure we operated and maintained the systems properly. Of course, since we were in SAC, one of the primary goals of the team was to ensure that all the units did everything the same way, all the time.

The process got a little short circuited by the Cuban Missile Crisis in October 1962. We had gone through one ORI without success, and then spent a very intense month sitting very close to nuclear war. We learned a lot about keeping complex missiles on alert during that tense period. There were no IG or 3901st SMES visits during the crisis — we were at Defense Condition Two and Three, (Defense Condition Five was the lowest, and Defense Condition One meant nuclear war was imminent) and had only one purpose in life; to be ready to launch our nuclear missiles if execution came. Shortly after the end of the crisis, we returned to the daily routine of operating and maintaining missiles and keeping everybody trained and current. After a couple of post-crisis IG visits, SAC Headquarters decided that a major effort was needed to get all the units on track and heading in the same direction.

Most of the Atlas and Titan I units were in 15th Air Force at that time, and SAC directed each numbered air force to set up procedures to solve the problems the IG had found. Fifteenth AF put together a special staff assistance team, made up of what was considered the best in each area from around the ICBM force. The team was headed by a colonel from the Titan unit at Larson AFB, just north of Moses Lake, Washington, and included officers and noncommissioned officers who had impressed the IG team as the best in each area. My boss, who had vast experience in the aircraft side of maintenance control, was picked for the area involving job control and plans and scheduling. The team included at least one expert from each functional area or shop in a missile squadron. The team visited each squadron twice, the first time to sit down with us and ensure that we understood what the goals were and what the SAC way was in each specific area. After the team had visited each squadron the first time, they returned to ensure that we had gotten the message and were really doing the jobs of ICBM operations and maintenance the same way throughout the command. We had done a pretty good job of setting up and conducting business in the maintenance control area at Mountain Home AFB, which was probably the reason my boss was picked for the team. The only item that we had to change involved our Job Control Console, a big metal desk with display panels, work surfaces and communications connections. We had decided not to use the top half of the "standard job control console" and had built impressive magnetic boards to show missile status and maintenance in progress. We were clearly told to reinstall the top of the console and use it, and to do it "today," so we would look like the other units.

For the two-plus years that followed, we had many visits from both the IG team and the 3901st SMES. Both teams continued to emphasize the need to closely follow the Air Force and SAC directives, and to do everything the

▶ 451st Strategic Missile Wing Titan I Combat Crew loading bus for travel to alert duty at 724th Strategic Missile Squadron Site B, Lowry AFB, CO, 1962

standardized, approved SAC way. We fared pretty well at Mountain Home AFB, since we were one of the few units to ever pass an ORI, and we even managed somehow to get through two in a row successfully. But passing or failing wasn't a matter of units not doing things in a standardized manner, it was just that the Atlas and Titan I systems were unreliable and complex, and it was almost impossible to get through enough successful propellant loadings to meet the SAC standard. We only had to have 67 per cent of those missile exercises be successful, but with Atlas and Titan I, that was a tough task. The lack of reliability of these early systems was one reason they had such a short life.

▲ The author, Captain Charles G Simpson seated at the Deputy MCCC console, 321 Strategic Missile Wing, 1966, with evaluator Captain Darrel Downing.

When General LeMay took over SAC, he built a command that stressed standardization in every task and that demanded performance at the highest levels, based on teamwork and cooperation. He understood that, when dealing with nuclear weapons, we needed to accomplish tasks as team and crew members, not as individuals. Everyone had a checklist or a manual, and everyone had a standard to meet and maintain. Almost every facet of day-to-day operation was measured, scored and reported, and everybody knew where his unit stood in the command. In addition to all the evaluation and inspection programs, SAC had a comprehensive reporting program, originally called the Management Control System, that tracked almost every aspect of the way a base or wing was run. The leadership, both at command and unit level, knew where every wing stood all the time, and commanders were well aware that if they ended up at the bottom on any of those scored items, their time as a commander was over.

THE PEOPLE

In those days, it wasn't a matter of there being a bomber way and a missile way of doing things — there was just a "SAC way." The senior leaders were all bomber folks, and the "SAC way" had worked for years for them, so it would work for us missileers. When the early Atlas and Titan units were activated, the vast majority of the people came from SAC and the aircraft business. By the late 1950s and early 1960s, we were phasing out B-47s, KC-97s and even some early B-52s. There were a lot of experienced field and company grade officers and mid-range and senior noncommissioned officers available to move from aircraft operations and maintenance to the missile side of the force. The majority of the more senior officers and many of the more junior ones were pilots, many veterans of World War II. There were a couple of exceptions, but most of the new missile unit commanders were colonels with experience in bombers. The same was true for the majors and lieutenant colonels who became the senior ops and maintenance leaders.

At Mountain Home AFB, our first squadron commander had made colonel during World War II, as a bomber pilot at 24 years old. The chief of maintenance was a very senior lieutenant colonel who had flown Boeing B-29 Superfortresses, Boeing B-50 Superfortresses, and B-47s. He had been at Mountain Home since the base opened in 1952, and had served several years as commander of one of the bomb wing's maintenance squadrons. The Maintenance Control Officer, my direct boss, came from aircraft maintenance in a B-47 wing in Texas that had closed. He had spent many years in maintenance after an early career as a bomber pilot. These officers and the others in the units brought an enormous amount of SAC experience to the missile force.

Even the more junior of us in maintenance were SAC-experienced, with two or more years of service. I was the only junior maintenance officer who had not been in SAC prior to moving to missiles. My first two years were in aircraft maintenance in Air Force Systems ☛

Command. Most of the noncommissioned officers had similar backgrounds. While some had come from either Snark or Matador/Mace, most had spent time in bomber maintenance. Even many of the two- and three-stripers had come from aircraft maintenance jobs in SAC.

The ops side of the squadron was manned in a similar manner. The chief of operations had started as a bomber pilot and spent almost 20 years in bombers. We had a number of field grade crew commanders and division chiefs, almost all with bomber crew time. A couple came from other areas, like communications or support, and we even had a couple of senior navigators from B-47s. The junior crew members — we had no second lieutenants — had come mostly from the cockpit, with a few from other SAC jobs.

In those days, pilots who moved from flying jobs to non-flying jobs like missiles still maintained flying proficiency. They had to fly at least four hours per month to continue to receive flight pay, and more hours to stay current in the aircraft they flew. Every base had a number of base flight aircraft, T-33s, C-47s, C-123s or others for these pilots to use for currency. Before I came into missiles, my job was to maintain 35 T-33s that were flown primarily by graduate students, Air Force officers, at Harvard, MIT and other Boston area universities. Maintaining pilot currency was a big effort in those days. It was a little easier for the navigators, since they could crawl in the back on almost any C-47 or C-123 and count that time for flight pay and currency.

When we started activating Minuteman, little had changed. We did begin getting second lieutenants, but many who came into operations and maintenance came from the Atlas and Titan units that were closing, and many more came from the cockpit. I was in the last Minuteman wing to activate, the 321st SMW at Grand Forks AFB, North Dakota, and all our senior leadership came from either bomb wings or early ICBM command jobs. The squadron commanders, operations branch officers and operations staff officers all came from the cockpit or from one of the closed units. Some had a little difficulty transitioning to a new business, away from aircraft. Our first DCO got so upset one day in a pre-departure briefing that he forgot where he was and began yelling at us "B-47 crew members" about the poor job we were doing flying our missions.

The crew force, especially at Grand Forks AFB, was primarily navigators from units being closed. By 1965, the last B-47s and KC-97s were gone, the Convair B-58 Hustler had just been deactivated, and early B-52 and Boeing KC-135 Stratotanker units had shut down, so there were a lot of aircrew members moving underground. We had a very senior crew force in those days, with field grade officers commanding most of the crews, and only a few brand-new officers as deputies. Many were like me, with three to five years of experience, mostly in SAC. My crew commander was a senior captain, KC-135 navigator, who made major shortly after our crew was formed. Our crew was typical, with a lieutenant colonel, major or senior captain as commander, most with navigator wings, a captain alternate missile combat crew commander and a senior lieutenant or junior captain as deputy. It was no different in maintenance. We didn't lack for SAC and bomber experience in our missile units in those days.

CONCLUSION

The bomber heritage that we built the ICBM business on stayed with us for a very long time. It wasn't until the late 1970s and early 1980s that the missile force became a force manned by true missileers, people who grew up with ICBMs, not as bomber pilots, navigators or maintainers. By that time, many of us who came into the ICBM force in the early days had progressed to positions of senior leadership. There is no doubt that the lessons we learned from our bomber force teachers made us better at the way we did our job as part of the nuclear deterrent triad.

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