DOCA Hill-Ogden Conference Notes

Notes from March 1-3, 2020 by DOCA Member Lynn M. Boughey ('94)

(All presentations and tours UNCLASSIFIED)

If one word is best attributed to Hill Air Force Base and its many interrelated missions, it would be the word "legacy."

Everywhere you turn, there are reflections of what once was, what has become, and what the future will hold. From their world-class museum to state-of-the-art engineering and computer modeling, to the newest fighter jet available – the entire base lets the young airmen, civilians, and contractors walk in the footsteps of those who came before them, leading us quietly but most assuredly into a different future that will merge all that was, is, and will be.

Attendees and Focus of Conference

Forty-seven DOCA members attended the conference from Sunday, March 1 through Tuesday, March 3, 2020. The focus of this conference was the importance of our nation's nuclear deterrence mission and air superiority.

Resting adjacent and along a Western ridge of the Rocky Mountains, Hill Air Force Base looks to the west to views of the Great Salt Lake, and is cradled by mountains both east and west.

Hill Air Force Base is an Air Force Material Command (AFMC) base located in northern Utah. It is the Air Force's second largest space by population and geographic size, and is the home to many operational and support missions along with being the hub of activity for the depot maintenance of numerous aircraft and weapon systems. Hill Air Force Base continues to play a major role in the United States Air Force, starting with fighting efforts from World War II to supporting present day efforts around the world. Military and civilian personnel at Hill Air Force Base are helping to ensure the nuclear triad remains the effective strategic deterrent, now and into the future.

Home of the Air Force's only combat-capable F-35A units, the 388th and 419th Fighter Wings are prepared to launch its 78 aircrafts to support the national defense mission at a moment's notice. Last year, Hill AFB began regularly supporting F-35A combat operations with consecutive deployments. Currently, the wings fly 30 to 60 sorties per day from Hill's flight line.

Community Support by the Surrounding Areas

Throughout the conference, we were reminded time and again about the remarkable community support that the Men and Women from Hill Air Force Base receive. And these reminders were not just words. Everywhere we went, there were references to items that were provided to the base from the community. As an example, pool tables and movie theater seats were provided for the airmen's recreation center. More importantly, we came to understand that the community – undoubtedly recognizing the $3.7 billion of local economic impact – initiates state and local government processes to allow community interaction. Some interactions come by means of moving businesses and contracting offices onto the base with special leases and others allow substantial economic development on and around Hill Air Force Base.

DAY 1 - MARCH 2, 2020

Speaker 1 - Colonel Jon A. Eberlan,
Commander, 75th Air Base Wing

Hailing from Missouri, Col. Jon A. Eberlan began his presentation by describing not only the $3.7 billion impact on the local economy, but particularly pointed out the manner in which the surrounding towns, and the two counties that are bisected by the base, have learned to work together. At times, there have been over 25 mayors and county commissioners at the table making joint decisions and coordinating the various issues related to the base.

Col. Eberlan described the six centers of the Air Force Material Command. He emphasized the importance of the Air Force Sustainment Center; the 388th and 419th Fighter Wings (who maintain combat readiness to deploy, employ, and sustain the F-35s worldwide); and the three depots. The Air Force Sustainment Center's mission is to provide sustainment and logistics readiness to deliver combat power for America.

He said that the five priorities are: (1) deliver combat power; (2) accountable, global logistics integration; (3) shape future logistics capabilities; (4) drive a cost-conscious culture; and (5) develop and support airmen for tomorrow's Air Force. He perceives his mission is making sure that America "gets the biggest bang for the buck with the resources assigned to us."

Col. Eberlan relayed many other interesting points during his presentation:

- 95% of the systems employed to fly modern planes are electronic. "Ones and zeros."
- Hill Air Force Base just finished a $40 million runway improvement project, which resulted in their only other runway being closed to anything but the numerous deployments of the F35As while the improvement project was being completed.
- The base has over 7000 acres inside the fence, and over 1 million acres for the test facility.
- The base hosts 2700 contractors, 24,000 employees, and is expected to grow an additional 4,500-5,000 people in the next 5 to 6 years. All this growth is expected in an economy that has 2% unemployment.
- The Ogden Air Logistics Center employs over 9000 military and civilian employees, and operates other locations throughout the country, including Davis-Monthan Air Force Base's "Boneyard" in Arizona.
- When asked if he has everything he needs, Col. Eberlan stated: "I have all the flexibility and support as a commander as I've ever had."
- When asked if he had one word or one phrase that would describe his mission and the people who perform that mission, his answer was: "Swiss Army knife."

Speaker 2 – Brigadier General "Cauley" von Hoffman,
Commander, Ogden Air Logistics Complex

There are those in the early 1800s who described a certain French general (who later became Emperor of France) as a "velvet glove": outwardly smooth and personable, but inwardly determined, forceful, and unyielding, capable of using a gesture to initiate the movement of armies of soldiers. Soldiers were ready and willing to go wherever he may lead, and trusted his every decision as well grounded and worthy of

full consideration. He was at times, brilliant. Gen. von Hoffman is one of these military leaders. She is friendly, poised, articulate, and engaging; and yet you cannot help but sense that this particular general has a level of determination and competence rarely matched. She carries the fortitude and strength of one who is in all aspects a "velvet glove."

Relaying to our members her favorite mantra of the art of the possible, Gen. von Hoffman described the immense scope of her command: 295 buildings, 11 operating locations, a budget of $2 billion annually, and a $766 million annual payroll. She has under her command 1% military, 6% contractors, and 93% civilians. Her depots at several separate locations rebuild aircraft and reclaim parts for aircrafts being refurbished. In addition, 25% of those under her command fulfilled the task of engineering in-house software, a mission that is growing exponentially. Not surprisingly, the focal point of a great majority of her work is the tension between modernization and keeping the legacy systems viable and operational until new systems can come on board.

Gen. von Hoffman explained to the DOCA members that one of her top challenges is recruiting engineers and software specialists. Given the economy in Utah, she has found it necessary to recruit from other locations and set up facilities for those recruits in different locations in order to maintain quality of life and affordability of housing. Gen. von Hoffman also informed us that there is an escalating cost for maintaining older systems, and that long-term sustainability is becoming increasingly expensive. Gen. von Hoffman also described a unique leasing program which has allowed Hill Air Force Base to expand inside the fence by leasing land to contractors and other businesses. Those that lease actually build the new buildings on base land for private use. According to Gen. von Hoffman, the leasing program has been very successful and is only going to get bigger. Gen. von Hoffman also described the complexity of sustaining Minuteman III missile systems that employ 1960's technology. She also informed us that once the modernization of the new missile is completed, it will take seven years to swap out each of the old missiles with a new missile.

Speaker 3 – Mr. Brett Christensen,
Acting Director, Enhanced Use Lease (EUL) Program

One of the least anticipated briefings was a briefing about leasing the base property, boring contracts, lease provisions, the need for economic development, etc. Ugh! Boy we were mistaken! Due to changes in federal law made in 2002, allowing the military to lease out underutilized property for fair market value (10 USC 2667), we were briefed by Mr. Brett Christensen on the absolutely fascinating manner in which Hill Air Force Base utilizes this particular congressional authorization, the Enhanced Use Lease (EUL)

Program. Anyone who has lived in or around Ogden experiences the daily traffic and the huge population increase in the surrounding area.

Hill Air Force Base has 3.5 miles of land running parallel to the I-15. Overall, the base has thousands upon thousands of underutilized acres owned by the government. Mr. Christensen informed us that the contractors/business entities may lease out this very valuable land by a one-time cash payment or payment in kind (where the base receives something other than cash). By using 50-year leases, the base has leased out land for contractors inside the base but also for restaurants and other businesses along the interstate.

The financial advantage of these leases to the base is immense. In the midst of a huge need to renovate and rejuvenate base buildings, the lease program killed two birds with one stone, allowing contractors to build their own modern office spaces, and allowed the base to use lease money to rejuvenate 66 dilapidated buildings that do not qualify for MILCON. Mr. Christensen stated that one of the most important aspects for development, being in the middle of two counties and numerous local governments, was the state setting up the Utah Military Installation Development Authority (MIDA). MIDA not only manages the development but creates a single taxing authority that distributes the taxes to all the state and local governments through a prearranged formula. The money received through the leasing program goes into a trust account, then the state distributes the taxation revenue to all the county and local governments.

Mr. Christensen noted that very few other Air Force Bases have taken advantage of this financial windfall, proudly asserting that "We are the biggest and the baddest." During the question and answer session Col. Eberlan noted that the Enhanced Use Lease (EUL) Program "gives us another avenue to build new, it's a more efficient way of doing things and gives us a lot more flexibility." He further stated that "the secret sauce here is the (MIDA) which provides a very good partnership; it's the glue that is holding it all together. It's a great program and it's really taking off in the last two years."

Tour 1 – Standard Air Munitions Package (STAMP) Pallet Buildup Area
Lieutenant Colonel Matthew Drossner,
Commander, 649th Munitions Squadron

Our first tour of the day led us to a hangar which houses numerous pods, filled with various conventional munitions that are placed on uniform aircraft pallets. These pods were described by our briefer as the equivalent of the green base you use when you build Legos. The Squadron receives munition orders from all over the world relating to whatever products are needed, they securely place those items on the pallets, and then they ship them out. The munitions themselves are normally already packaged in a pod from the contractor or manufacturer. The flexibility and complexity of this logistical mission is easily demonstrated by the fact that there are 520 different type codes or different packages – designated by unit type codes – that can be created. Once the items are built up onto the pallet and properly secured, the pallet is rolled across a large conveyor belt and taken by other heavy lifting equipment to the flight line "the hot pad" to be loaded onto an awaiting aircraft. The base is of course a large storage facility and keeps on hand the pods and other conventional weapons that are needed throughout the world. The squadron necessarily focuses on flexibility, accuracy, swiftness in purpose, and of course safety. Recently during a training exercise, the squadron built up 1000 munition pallets in three days.

Tour 2 – Missile Motor Buildup
Colonel Kenneth Benton,
Commander, 309th Missile Maintenance Group

Anyone who likes missiles and likes the idea of looking "under the hood" was in heaven at the next tour for DOCA members, where we were allowed to study and inspect a Minuteman III missile with each of the stages separated into linear segments. We were each allowed to get up close and personal to the rocket motors at each stage. We saw the nozzles, viewed the top portion of each stage, and witnessed the mechanical and electronic pieces that make the missile work. Although a military operation, we found it very interesting that the persons doing this work are primarily (if not exclusively) civilians, most of whom were prior military maintenance or munitions personnel.

Each refurbishment of the missile has seven people on the crew. The crew spends 22 days, or approximately 600 hours, to turn around a single missile. This is done in seven facilities, with five separate crews. The entire missile build-up group is programmed to do 67 missiles a year so that during the eight-year cycle they will replace all 450 missiles in each of the 450 active silos in North Dakota, Montana, or Wyoming. In addition, two times a year one of the missiles is taken out of its silo and sent to Vandenberg AFB for a missile launch – obviously without the warhead – to demonstrate that the weapon works and is a credible deterrent.

Of particular interest to our DOCA members was the fact that the civilians refurbishing the missiles at this particular facility had exceedingly long hair and sported graybeards and were affectionately known by the commander as the "ZZ Top Flight." We were advised that many of the other crews are of a younger generation and will be replacing this particular crew in a few years. According to our briefer, all of the civilians hired "have prior military weapons or ammo experience and have to be comfortable but not complacent around explosives." I note that we were not allowed to take pictures or find out the exact musical tastes of those who appeared to be from ZZ Top.

Tour 3 – A-10 Refurbishment
Colonel Randy Ackerman,
Commander, 309th Aircraft Maintenance Group
and Mr. Steve Zizer

At our next tour, we observed yet another group of civilians refurbishing the A-10 Warthog. In this hangar, we observed the progress of six A-10s in the midst of refurbishment, many of which were literally taken apart down to the wing. Each plane has its own production board, where you can see exactly where the crew was at in regard to the refurbishment, what had been done, what needed to be done, and whether they were presently on schedule. When the A-10s were built, they were designed for 6000 hours. The decision was then made to extend the life to 8,000 hours, and then 12,000 hours, and now they're trying to increase their lifetime to 16,000 hours. There are 281 aircraft in the fleet, and they are attempting to refurbish 40 a year. Similarly, the F-16 was designed to last 7,500 hours, and they are presently trying to extend the life of the 225 F-16s to 13,000 hours.

Tour 4 – Software Facility
Mr. Dan Richardson, Deputy Director
309th Software Engineering Group

In a location where 95% of the technology used to fly airplanes is software, there is a clear need for the Air Force to have its own in-house software unit capable of designing, testing, and implementing software. Mr. Dan Richardson, Deputy Director, advised the DOCA members that "our organization is growing, and is supporting not only the Air Forces aircraft but also the Minuteman III mission, which results in 11% of the space force." Interestingly, the software engineering group performs its mission organically – that is, everything they create is all organically developed and supported. The SWEG (as they call themselves) has 1,850 people today, with 70% of the personnel being electrical engineers or computer scientists. They also have other partners at other locations, which provides a combined number of 3,900 software professionals at 7 operating locations. Due to the demands relating to the application of computer technology, the software facilities workforce will double by the year 2029, averaging 200-250 new bodies a year. Just recently, the State of Utah funded a $28 million 78,000 square foot building that will accommodate the growing number of personnel.

Mr. Richardson also advised DOCA that beyond their general motto, "Build Right, Ready to Fight," they are implementing at Ogden the ability to conduct rapid development engineering solutions through its Extreme Digital Development Group (EDDG), which applies agile methodology, along with corroboration with academia, research labs, and industry – thus allowing the group to identify, develop, and implement a computer resolution to a real-world Air Force problem in a matter of days, not months. Another fascinating aspect in dealing with recruitment of engineers and computer scientists has been the facility's internship program. They bring in interns – some of them as young as 12-13 years old, as well as high school students – and allow them to work at the facility during the summers. Once they turn 16, the internship becomes a paid internship or scholarship. To implement this program, called Pathways, they have a full-time STEM outreach person. Most significantly, they have been able to keep about 85% of those young men and women who intern at the facility.

DOCA members were also allowed to see the next generation simulators designed and operated by the software engineers at Hill AFB's software facility. After entering the large "hangar" you are allowed to enter a very large bubble that provides a 360° view around you, and 180° to the sides and above you. In other words, once you are inside the simulator you are encircled by a half-sphere of approximately 20 feet in diameter. Sitting in the center is the cockpit for the F-35. The simulator's visuals were truly phenomenal. The "pilot" flew all around Hill AFB and then northward along the interstate, and then actually through the mountain passes to the east. As we flew, we were able to observe "our" shadow crossing the land below us. The level of realism is breathtaking, if not potentially nausea producing. As the pilot did aerobatics – including numerous barrel-rolls – it was necessary to hold onto something, such as the exterior of the cockpit assemblage. Want to fly a different plane? No problem. Just roll out the cockpit of the F-35 and bring in whatever modern military plane you'd like to fly today. Several of our members were allowed to "fly" the F-35, and to our great relief everyone walked away without a scratch.

Speaker 4 – Lieutenant General "Andy" Busch
United States Air Force, Retired

Throughout the conference we received insights and additional information from Lt. Gen. Andy Busch, who served his final assignment as the director of the Defense Logistics Agency, leading nine supply chains supporting the US military, as well as federal, state, local and international partners. He also served as our host at the conference.

Standing a full 6'7" tall, he exudes confidence and insight, all framed in a most pleasant and engaging disposition. General Busch suggested that we should focus on the January 2018 National Defense Strategy, and ask, "Are we doing the right things necessary to implement that strategy?" To relay this point another way, General Busch described an incident when he was a young officer observing a conversation between a skipper and a one star, and the one star asked his skipper, "Is your crew ready?" The skipper replied, "Ready for what? I don't know what they're asking me to do." So according to Gen. Busch, we all need to ask ourselves, "*Ready for What*?"

General Busch suggested that we all take the time to read the recent National Defense Strategy, and told us that there are four main parts to the strategy. 1) a strategic approach to building more lethal force, including modernization of the nuclear triad, 2) work with our alliances, 3) reform the department to enhance greater performance and efficiency, and 4) deal with terrorism. General Busch noted that it is significant that terrorism is now listed as the fourth priority, not the first, as it had been before.

In regard to the lethal force strategy, the primary focus is to transition current assets to a more lethal level, meaning that each weapon system should be sustaining, organic, and in-house. As to the nuclear triad, we have moved from mutually assured destruction to a threat focus that is very asymmetrical, for we have had to deal with rogue actors and people who aspire to have nuclear weapons.

Finally, in regards to the news related to the F-35 and its software issues, General Busch emphasized that given the threats that they face, he finds it necessary to require such high levels of engineering. In many ways the F-35 could be considered an over engineered plane, but necessarily so. Yes, the problems will be fixed. Having an organic software, that decreases the need for outside support, is a major factor in fixing the F-35 problems. Such fixes become particularly important when dealing with constant need to extend the life of many of the platforms purchased. As for the F-35 itself, the people who fly it love it; it is operational, it is doing its job, and whatever needs to be fixed will be fixed.

Tour 5 – Hill Aerospace Museum
Mr. Mike Moore (far left), Director of Staff, 75th Air Base Wing
and Mr. Aaron Clark (far right), Director, Hill Aerospace Museum

The Hill Aerospace Museum is a very popular attraction in Utah, located on the northwest corner of Hill Air Force Base. The museum initially opened in 1946, was part of the Heritage Program beginning in 1981, and eventually expanded to 7 buildings, 34 acres, and hosted 359,000 visitors in 2019. The present Museum was founded in 1982 and opened to the public in 1987. It has more than 90 military aircraft, missiles, and aerospace vehicles on the grounds. It also has a converted fuselage of a C-130 which is used as a classroom for presentations to students. In 1991 the museum moved into a new 52,000 square foot building. The range of aircraft and its inventory is substantial, including the B-17 Flying Fortress, SR-71 Blackbird, A-10 Thunderbolt, an F-16 Fighting Falcon, and many more.

The director of the museum, Mr. Aaron Clark, is happy to inform you that "it is the best field museum in the entire Air Force," referring to the main Air Force Museum in Dayton, Ohio as "the mothership." Each year the museum hosts 16,000 educational participants, receives $175,000 in funding from the State of Utah, and is listed as the number 1 attraction by Trip Advisor for Utah. The museum receives the assistance of over 100 volunteers who provide over 20,000 volunteer hours every year.

DAY 2 – March 3, 2020

Speaker 5 – Colonel Luke Cropsey
Director, ICBM Systems Directorate

We have been fortunate in the annals of American history to have had certain military leaders who exude confidence, brilliance, and worldview unbecoming of their age, station, or generation. One might think that Gen. George S. Patton or George C. Marshall exhibited such traits. They were able to combine a strength of character that deserved our full and undivided attention, and could lead us to wherever we needed to go.

Exhibiting a quickness of wit, a fine sense of humor, and a melodic cadence in both style and substance, Col. Cropsey qualifies as one of these distinctive individuals. He immediately commanded our full attention while exuding absolute competence. Col. Cropsey briefed us about strategic importance of the nuclear triad, the sustainability program for the Minuteman III missile, and the follow-on program, the Ground Based Strategic Deterrent (GBSD).

Our present nuclear deterrence – referred to as the triad – consists of nuclear submarines, nuclear capable aircraft, and ground-based nuclear missiles. Col. Cropsey understandably focused on the third leg of the triad, our nuclear missiles which consist of 450 silos in five states that are always on alert 24/7, 365 days a year, ready to go on a moment's notice. According to Col. Cropsey, these missiles come with a very particular promise: "Guaranteed delivery to anywhere in the world in 30 minutes or the next one's free."

Col. Cropsey's presentation began with the basic question, "Why nuclear deterrence?" In answering this question, the Col. presented a chart which showed the number of people killed in fatalities from 1600 to the present, in which the highest spikes related to World War I and World War II. And then suddenly, beginning in 1946, the chart leveled off to hardly any fatalities. According to Col. Cropsey, this significant change can be attributed to the use of nuclear weapons in 1945.

Col. Cropsey noted that prior to using the atomic weapon, we firebombed Japan and destroyed cities with conventional weapons, but this had zero effect on Japan's willingness to surrender. Only after dropping the nuclear bombs on Hiroshima and Nagasaki were the Japanese willing to even consider surrender. According to Col. Cropsey, it was this use of nuclear weapons that ended World War II, and just as importantly, presently serves every day as a deterrence to war. "There is a presumption that we don't use them *"nuclear weapons",* but we do use them every day, 24/7, 365 days a year because they prevent wars and other negative actions that would otherwise be taken by our adversaries." But for nuclear deterrence to work, there are two basic requirements: that the weapon itself must be credible, and we must be willing to use them.

Col. Cropsey then discussed nuclear weapons development in regards to the United States, China, Russia, as well as the attempted development by rogue nations. In addition, he noted that the mindset of the Russians versus the Chinese is entirely different, and therefore the psychological underpinnings of deterrence must consider that very different mindset. It is this triad that convinces other nation states that they can't win.

Col. Cropsey next described the Air Force Nuclear Weapons Center, which owns – cradle-to-grave – all nuclear assets. In regard to nuclear command and control communications network, there are two sides of this important system: the communication must get from the lawful authority to the person turning the key, but it is equally important that the communication cannot be spoofed. It is also important to note that the Department of Defense does not own any nuclear weapons, the Department of Energy does. It is the Department of Energy that is in charge of designing, building, deploying, and disposing of all nuclear warheads. That being said, all the missile alert facilities, the people operating them, the missile silos, even the roads leading to those silos and alert facilities, are owned by the ICBM Systems Directorate.

Why have a triad? Col. Cropsey referred to the new Columbia class nuclear capable submarine, noting that this leg of the triad is all about survivability. The aircraft delivery leg of the triad brings flexibility to the table, due to the fact that the pilots can get loaded up and get into the air, and head whatever direction the command authority sends them. Then they can be turned around and brought back home, once the crisis is over.

Land-based nuclear missiles stand as the last leg of the triad and are so because they are responsive – immediately, and with absolute certainty. "Once you light the fire, kick the tire, they're gone." There is no turning back. But they are also immensely survivable. Unlike the sub bases or the aircraft bases, any adversary would have to take out 450 different targets to get rid of the missile leg of the triad. Each of those targets would have to be hit nearly simultaneously, and probably require double redundancy (sending two warheads to each missile silo or launch control facility). Given this difficulty of taking out this leg of the triad, ground-based missiles provide stability.

Spending is necessary to upgrade the Land-based nuclear missile triad. In 1962, we were spending 17.1% of the budget. In 1984, we were spending 10%. Under today's 2020 plans, we will be spending 6.4% of the budget on modernizing the nuclear triad. "Yes, it's expensive, but 6% to keep the current stock alive and get the new stuff going constitutes an appropriate expenditure."

In order to show credibility of the Minuteman III Weapon System, four times a year we shoot off one of the missiles at Vandenberg Air Force Base, thus showing our adversaries that it works. For deterrence to work, we have to demonstrate a credible capability, and we do so every time we shoot off the missile out of Vandenberg. But these missiles are getting old, and of course by shooting them off we are also having to deal with attrition. The Minuteman III was designed for a shelf life of 10 years, up to around 1980. The first life extension took them to 2002, assuming that there would be a replacement at that time. When replacements were not fulfilled, the next life extension brought them to 2020. Here in 2020, engineers are attempting to extend the Minuteman III's life to 2036.

Why do we need a new missile, called the Ground Based Strategic Deterrence (GBSD)? We need to deal with the attrition problem, the sustainment problem (having to try to fix portions of the missile system that were designed in the 1960s), and the capability problem. If our adversaries at any time question whether or not our system will work, deterrence – in the minds of our adversaries – becomes a growing question mark. The GBSD will address that credibility gap. Once the new missiles are ready to be deployed, it will take 10 years to switch out the Minuteman III rocket and replace it with the new one.

We will be re-using both the silos and the present launch facilities, and by using digital engineering, genetic algorithms, and artificial intelligence, it is possible for our engineers to create millions of designs and determine with certainty what is the most effective system at the lowest effective cost. The department is leading the industry by employing these systems; the engineering and acquisition model.

During the question-and-answer session, Col. Cropsey noted that handling the destruction of incoming weapons from an adversary is by the Missile Defense Agency, and not "us." He affirmed that ground-based nuclear weapons are fielded and that Air Force Strike Command is in the process of rethinking the manning system. Col. Cropsey also discussed the values of having different yields and the strategic flexibility that each yield might allow. When asked about the current status of funding, he stated that they are fully funded at this time. The name of the new missile has not yet been decided, but he suspects it will happen in the next year. Although space junk is a problem, it will not interfere with the fulfillment of the land-based nuclear missile mission. As to the weaponization of space, that is a policy question "well above my pay grade."

In regard to the difficulty of developing nuclear missiles and functional nuclear weapons, Col. Cropsey noted, "It's rocket science! It doesn't just happen. The science necessary to do each aspect is huge, and the people who were able to do this for the United States had brilliant design work and brilliant thinking. And by the way, such brilliant thinking is still going on." To become a global nuclear power, there is a high barrier of entry, requiring it be done by a nation/state that has both the motivation and the resources to entertain even the possibility of obtaining nuclear capability.

Tour 6 – F35 A
Colonel Michael Ebner, Vice Commander, 388th Fighter Wing
& Colonel Brian Silkey, Vice Commander, 419th Fighter Wing

Fighter jocks come from one archetypical mold – steely eyed, total lack of fear, unquestioned bravery, and exhibiting total and complete confidence in everything they do. Our two hosts at the 388th Fighter Wing and the 419th Reserve Fighter Wing were no exception to this rule.

The most interesting aspect of Hill Air Force Base's two operational fighter wings is that the 388th Fighter Wing consists of active duty personnel while the 419th Reserve Fighter Wing is composed of reservists. Historically, reservists received the old if not outdated platforms and equipment, and yet this reservist wing has received the newest fighter jet, the F-35A, and works hand-in hand with the active-duty wing to fulfill their role as operational fighter wings. Combined, the two units have 1,900 airmen and 78 F-35As. The two wings work together as partners, and according to Col. Ebner, "We can't do our job without them." Both men referred to the phrase, "One mission, same fight."

Col. Silkey stated that 80% of his reservists continue in the civilian workforce, while noting that 90% of the reservists were previously active duty. As to the capabilities of the F-35A, these two commanders had absolutely no complaints. "They don't see you; we fly virtually undetected." The F-35A is a fifth-generation aircraft that employs combined sensors and the most modern technology, including an augmented reality helmet that employs high resolution, mixed-formation, integration. "We are able to see everything that's going on, all around us, immediately."

These two units have had numerous deployments already – particularly when the runway was being refurbished – in such places as Japan, South Korea, and UAE. When asked about the unit cost of the planes, DOCA members were informed that the new ones are costing $90 million each.

Tour 7 – Airmen Recreation Center
Master Sergeant Jamaica Stephens, President, Top III,
and Airman First Class Lelauni Sanders, First Four/ARC Manager

As is our custom at each place we visit, DOCA members attempt to leave a lasting legacy, quite often in the form of a contribution. Our contribution here was directed to making the lives of the young airmen recently stationed at the base, better. The DOCA Leadership, Mr. Bob Jans, President and Mr. Michael Shyne, Chairman; presented a $10,000 donation check to the Team Hill Top 3 Association. Part of the donation will help the Airmen Recreation Center (ARC) purchase items such as computers, monitors and furniture. The (ARC) was established for all the young active duty airmen who live within walking distance and don't own a vehicle; as well as for all the other active duty airmen a place to hang out and relax. Many of the items at the (ARC) have been donated by the community, such as the pool table and the comfortable movie seats. The Team Hill Top 3 Association were very happy and appreciative to receive the $10,000 donation from the DOCA Defense Fund and look forward to putting the donations to use for all the Airmen (*Military and Civilian*) assigned to Hill Air Force Base.