Welcome to Joint Base Elmendorf-Richardson and Arctic Thunder 2016.

We're excited about this year's open house, and confident you'll leave here both impressed and proud of our nation's armed forces. This is a major event combining joint operations from the Army and Air Force.

JBER is the premier joint base in the Department of Defense and home to America's Arctic Warriors. The former Elmendorf Field on Fort Richardson was initially built in 1940. More than 75 years later, our dedicated military members are still serving together defending one of the world's most strategic locations.

The men and women stationed here are ready to meet the mission of providing world-class, tip-of-the spear warfighters around the globe. However, we simply could not do that mission without the endless support we receive from you, our neighbors and friends. We are proud to serve in Alaska, proud to represent Alaska when we travel around the world, and proud to be a part of our communities.

We have another all-star lineup for you this year, featuring the U.S. Navy's Flight Demonstration Squadron Blue Angels and many other civilian and military performers. Rounding out this award-winning show are displays of Army and Air Force equipment our deployed warriors use to defend our great nation.

Arctic Thunder is historically the biggest two-day event in Alaska. There is something for everyone: a sky full of non-stop action, a hangar full of activities for the children, a variety of food and shopping, and much, much more.

We've worked hard to put together a spectacular program for your enjoyment this year and we encourage you to talk to the many professional men and women who operate our high-tech equipment.

On behalf of all the men and women stationed at Joint Base Elmendorf-Richardson, thank you – the people of Alaska – for making the privilege of serving in the "Great Land" a great experience.

Enjoy Arctic Thunder 2016!

GEORGE T.M. DIETRICH III
Colonel, USAF
Commander, JBER & 673d Air Base Wing

Inside the Guide...

AERIAL DEMONSTRATIONS

MISCELLANEOUS

Arctic Thunder
Joint Base Elmendorf-Richardson

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Getting to Arctic Thunder

If you are planning on attending Arctic Thunder 2016, use the following **Joint Base Elmendorf-Richardson** gates depending on the route of travel.

If you are arriving from:

- **Eagle River** or the **Valley**, enter through the Richardson Gate.
- **Anchorage**, enter through the Boniface Gate.

Only distinguished visitors, air show performers, vendors, or military ID card holders will be permitted access through Post Road Gate.

Government Hill and Muldoon gates will only permit DoD ID card holders.

From 9 a.m. to noon, the Boniface Gate will have three lanes inbound and one lane outbound.

After 4 p.m., no open house traffic will be allowed through Boniface Gate; attendees must use the Richardson Gate.

From 9 a.m. to 7 p.m., personnel will not be able to drive from the west side of base to Joint Military Mall utilizing Arctic Warrior Drive; all traffic will be stopped at intersection of Arctic Warrior Drive and Sijan Ave.

These people should exit base and re-enter through the Muldoon Gate.

Lost and Found

Lose someone? The Lost Child Booth is in Hangar 2. Lose something else? Ask any Arctic Thunder ambassador and they will direct you to the Lost and Found table.

Restricted Items

These items are restricted: coolers; loose ice; large backpacks or bags; helium balloons; pets; weapons; tents or awnings; cooking equipment; bikes; and roller blades, scooters, or skateboards.

People in possession of these items will be turned away at the gate.

Suggested Items

These items are allowed at the air show and associated events: binoculars, sunglasses, sunscreen, comfortable shoes, cameras, portable chairs, ear plugs and cash (ATMs may not be readily available).

We're JBER: one team, one fight

In October 2010, the Air Force's Elmendorf Air Force Base and the Army's Fort Richardson combined to become one installation, in accordance with the Defense Department's 2005 Base Closure and Realignment Commission recommendations.

This merger of two great installations and two powerful combat missions simply formalized an already close-working relationship the Air Force and Army have shared here for years; working together under the Alaskan Command.

Today, JBER continues to grow in importance to U.S. national security because of its strategic location and complementary mix of military capabilities to include F-22 Raptors, Pacific Command's only airborne brigade, and the C-17 Globemaster IIIs that will get them to the fight.

The combination of this incredible air/ground force with world-class Alaska training facilities, such as the Joint Pacific Alaska Range Complex, makes JBER a jewel within the Department of Defense's crown.

JBER Units

11th Air Force

The 11th AF plans, conducts, controls and coordinates air operations in accordance with the tasks the Pacific Air Forces commander assigns, and is the force provider for Alaskan Command, the Alaskan North American Aerospace Defense Command Region and other unified commanders. This mission is accomplished largely through the 611th Air Operations Center and 611th Air Suport Group. Together, they provide a network of critical surveillance and command, control and communications functions necessary to perform all tactical warning and attack assessment in defense of Alaska.

U.S. Army Alaska

The USARAK commander overseas all Army combat forces in Alaska; including major units at both JBER and Fort Wainwright. USARAK's headquarters is on JBER.

USARAK is at the forefront of protecting U.S. interests around the world.

Successful combat tours by the 4th Brigade Combat Team (Airborne), 25th Infan-

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try Division; elements of the 2nd Engineer Brigade and many other supporting units assigned to JBER mark the Army's continued commitment to stopping terrorism and defending freedom.

673d Air Base Wing

The 673d ABW is the host unit for JBER, and is responsible for providing expeditionary combat support and the day-to-day operations of the installation to include: ensuring timely fire, medical and emergency services; providing deployment and redeployment support for nearly 9,000 deployable Soldiers and Airmen; planning, building and sustaining a $15-billion infrastructure; and much more.

The 673d ABW is composed of the 673d Medical Group, the 673d Civil Engineering Group, the 673d Logistics Readiness Group, the 673d Mission Support Group and more than a dozen wing staff agencies including Staff Judge Advocate, Public Affairs, Base Historian, Equal Opportunity Office, and the Installation Safety Office.

3rd Wing

The 3rd Wing provides trained and equipped tactical, all-weather strike assets, command and control platforms and tactical airlift resources for contingency operations. The Wing also provides immediate early airborne detection, warning, surveillance and interception of hostile forces within the Alaskan North American Aerospace Defense Command Region. The wing flies and maintains the F-22, C-17, C-12 and E-3 aircraft. The 3rd Wing consists of 3rd Operations Group and the 3rd Maintenance Group.

Alaska Army National Guard

The Alaska Army National Guard continues to support our state and nation with high quality-motivated Soldiers, who are now equipped with the latest gear our Army can provide.

AKARNG Soldiers are deployed to two overseas contingency operational areas in combat or combat support roles.

During FY2011 and 2012, Alaska Army National Guard aviators and support personnel deployed to Iraq and liaison teams deployed with the Mongolian Armed Forces to Afghanistan. At home in Alaska, Alaska Army National Guard Soldiers worked to improve and safeguard the lives of Alaska's citizens.

176th Wing (ANG)

The 176th Wing is one of the largest and most active wings in the entire Air National Guard. Its missions include: combat search and rescue; tactical airlift; strategic airlift; air control; and rescue coordination.

More than 1,400 men and women serve Alaska and the United States as pilots, navigators, mechanics, engineers, electricians, administrative support personnel, network programmers, air controllers, medical technicians, chaplains, journalists and firefighters. Many

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of these highly trained specialists work full-time for the wing. Most, however, are "traditional" members – that is, citizen-Airmen from all walks of life who work and train one weekend a month and about 15 other days throughout the year.

Other JBER Mission Partners

There are nearly 70 additional organizations that call JBER home. Some of those include: the 715th Air Mobility Operations Group; the 3rd Air Support Operations Squadron; the 381st Intelligence Squadron; the Air Force Reserve's 477th Fighter Group; the Canadian Forces Detachment; Marine Corps' Reserve training center; the U.S. Army Corps of Engineers (Alaska District); Navy Reserve, the Alaska Military Youth Academy, and many, many more.

Joint Base Elmendorf-Richardson

Personnel

Air Force (active duty)	5,515
Army (active duty)	5,483
Marine Corps (active duty)	8
Navy (active duty)	10
Air Force Reserve	368
Air National Guard	1,427
Army National Guard	1,480
Coast Guard	100
Family members	16,838
Civilian Employees	3,562
TOTAL	34,723

(NOTE: this does not include the extensive military retiree population in the Anchorage Bowl.)

Property and housing

Acres	80,065
Buildings	935
Privatized Housing	2,990
Unaccompanied Housing	2,766

Payroll (in millions)

Military (to include Reserve and Guard)	$764.9
Appropriated Fund Civilians	$183.6
NAF civilian	$26.5

Construction (FY 2014, in millions)

Military programs	$0
NAF programs	$0
Operations & Maintenance	$52

Aircraft assigned

F-22 Raptor
C-17 Globemaster III
C-130 Hercules
HC-130P/N King
E-3 Sentry
C-12 Huron
HH-60 Pave Hawk
UH-60 Black Hawk
UC-35 Citation

(Some of the aircraft listed are used solely by active duty forces and some solely by the Guard, while others are shared between service components.)

Blue Angels Demonstration

Courtesy Photo

At the end of World War II, Adm. Chester W. Nimitz, the Chief of Naval Operations, ordered the formation of a flight demonstration team to keep the public interested in naval aviation. The Blue Angels performed their first flight demonstration less than a year later in June 1946 at their home base, Naval Air Station Jacksonville, Florida. Flying the Grumman F6F Hellcat, they were led by Lt. Cmdr. Roy "Butch" Voris.

Only two months later, on August 25, 1946, the Blue Angels transitioned to the Grumman F8F Bearcat and introduced the famous "diamond" formation.

By the end of the 1940s, the Blue Angels were flying their first jet aircraft, the Grumman F9F-2 Panther. In response to the demands placed on Naval Aviation in the Korean conflict, the team reported to the aircraft carrier USS Princeton as the nucleus of Fighter Squadron 191 (VF-191), "Satan's Kitten," in 1950.

They were reorganized the next year and reported to NAS Corpus Christi, Texas, where they began flying the newer and faster version of the Panther, the F9F-5. The Blue Angels remained in Corpus Christi until the winter of 1954 when they relocated to their present home at NAS Pensacola, Florida. It was here that they progressed to the swept-wing Grumman F9F-8 Cougar.

The ensuing 20 years saw the Blue Angels transition to two more aircraft, the Grumman F11F-1 Tiger (1957) and the McDonnell Douglas F-4J Phantom II (1969).

In December 1974, the Navy Flight Demonstration Team began flying the McDonnell Douglas A-4F Skyhawk II and was reorganized into the Navy Flight Demonstration Squadron. This reorganization permitted the establishment of a commanding officer, versus a flight leader, added support officers, and further redefined the squadron's mission emphasizing the support of recruiting efforts. Cmdr. Tony Less was the squadron's first official commanding officer.

On November 8, 1986, the Blue Angels completed their 40th anniversary year during ceremonies unveiling their present aircraft, the sleek McDonnell Douglas F/A-18 Hornet, the first dual-role fighter/attack aircraft now serving on the nation's front lines of defense. Since 1946, the Blue Angels have flown for more than 260 million spectators.

Some frequently asked questions:

Why don't the pilots wear G-suits?

G-suits are designed with air bladders (pockets) that inflate and deflate to keep a pilot's blood from pooling in the pilots' legs while executing sharp, unpredicted combat maneuvers. Unlike combat flying, the Blue Angels demonstration pilots know the maneuvers they will fly prior to execution, so each pilot knows when one will be experiencing heavy gravitational forces. Anticipating the changes in gravitational forces allows the Blue Angels demonstration pilots to combat G-forces with muscle contractions. Additionally, G-suits would detrimentally impact flight safety. The Boeing F/A-18's control stick is mounted between the pilot's legs. The Blue Angels have a spring-tensioned control stick with 40 pounds of pressure that gives the pilot a "false feel." This allows the pilot minimal room for un-commanded movement. The pilots rest their right arms on their thighs for support and stability while flying. Therefore, inflating and deflating air bladders in a G-suit would interrupt this support and stability, causing un-commanded aircraft movement.

What is the minimum visibility for a Blue Angels performance?

To be able to perform, the Blue Angels must have at least three nautical miles of visibility horizontally from centerpoint, and a minimum cloud ceiling of 1,500 feet, which the FAA can waive to 1,000 feet. At these minimums, the Blue Angels can perform a limited number of maneuvers in what is called a "flat" show. When the ceiling is at least 4,500 feet and visibility at least three nautical miles, a "low" show can be performed, which includes some rolling maneuvers. With a minimum ceiling of 8,000 feet and visibility of three nautical miles, the Blue Angels can perform their "high" show, which includes all the maneuvers.

How close can they fly?

The closest formation is the Diamond 360 – the aircraft are only 18 inches apart.

What are the lowest and

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highest maneuver heights during an air show?

It varies due to weather conditions, but the highest is the vertical roll performed by the Opposing Solo – up to 15,000 feet. The lowest, the Sneak Pass, is performed by the Lead Solo, and can be as little as 50 feet.

What about speed?

The sneak pass, at 700 miles per hour (just under Mach 1) is the fastest. Solo pilots also fly as slowly as 120 mph.

But how fast can they really go?

The F/A 18 can reach speeds of just under Mach 2 – almost twice the speed of sound, or about 1,400 mph. The maximum rate of climb is 30,000 feet per minute.

How are the fleet model F/A 18s different from the Blue Angels' version?

The Blue Angels' aircraft have the nose cannon removed, a smoke-oil tank installed, and a spring on the stick which applies pressure for better formation and inverted flying. Otherwise, the aircraft are identical, and a Blue Angel aircraft is capable of being returned to combat duty aboard an aircraft carrier within 72 hours.

Courtesy Photo

A smoke tank? Why?

The smoke is produced by pumping biodegradeable, paraffin-based oil directly into the exhaust nozzles, where it is vaporized into smoke. This provides a traceable path for spectators to follow, so they can see the flight profile that has been flown. It also

enhances safety of flight, providing a way for pilots to see each other during opposing maneuvers and conditions of lowered visibility or haze. The smoke poses no hazard to the environment.

What's the difference between a Blue Angel Hornet and the F/A-18 E/F Super Hornet?

The Super Hornet is 25 percent larger, can fly 40 percent further, remain on station 80 percent longer and carry more weapons than its predecessors. The Super Hornet F/A-18 E/F models have deployed with battle groups since 2001. While the Super Hornet has more recent technology, the Hornet has been a reliable asset for 30 years, and its many capabilities continue to meet the needs for the demonstration.

Courtesy Photo

Fat Albert

The Blue Angels maintenance and support crew travel aboard a Marine Corps C-130 Hercules aircraft, affectionately known as "Fat Albert." The C-130 is a tactical transport aircraft built by Lockheed Martin and is flown by an all-Marine crew consisting of three pilots and five enlisted aircrew.

Integrated in 1970, Fat Albert now flies more than 100,000 miles each season, carrying approximately 45 maintenance and support personnel, along with the specialized equipment needed to complete a successful air show.

Every show week, Fat Albert departs Pensacola in advance of the demonstration jets to prepare for their arrival at each show site. The Blue Angels could not perform without this versatile aircraft.

In addition to providing logistical support for the team, Fat Albert opens the show by displaying the tactical flight characteristics of the C-130 aircraft. Fat Albert begins the flight demonstration with a low-transition takeoff maximum effort climb, sending the Hercules skyward at a 45-degree, nose-up attitude to an altitude of 1000 feet, simulating conditions in a hostile combat environment. The C-130 concludes its profile by demonstrating its maximum-effort braking capability, bringing the aircraft to a full stop in less than 1,000 feet.

Fat Albert weighs 155,000 pounds fully loaded, is powered by four Rolls-Royce turbo-prop engines producing more than 18,000 shaft horsepower and cruises at speeds of more than 320 knots (approximately 370 miles per hour) at altitudes as high as 35,000 feet. Fat Albert was designed as a tactical transport aircraft capable of lifting heavy payloads into and out of

Courtesy Photo

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unimproved airstrips as short as 2,500 feet long. Additionally, Marine Corps KC-130s provide aerial delivery and in-flight refueling of jet, helicopter and tilt rotor aircraft in support of worldwide military operations.

Blue Angels Mission

The mission of the United States Navy Flight Demonstration Squadron is to showcase the pride and professionalism of the United States Navy and Marine Corps by inspiring a culture of excellence and service to country through flight demonstrations and community outreach.

A Blue Angels flight demonstration exhibits choreographed refinements of skills possessed by all naval aviators. The Blue Angels' C-130, affectionately known as Fat Albert, begins each demonstration by showcasing its maximum-performance capabilities during a ten-minute performance. Shortly thereafter, you will see the graceful aerobatic maneuvers of the four-jet Diamond Formation, in concert with the fast-paced, high-performance maneuvers of two Solo pilots. Finally, the team illustrates the pinnacle of precision flying, performing maneuvers locked as a unit in the renowned six-jet Delta Formation.

The team is stationed at Forrest Sherman Field, Naval Air Station Pensacola, Fla., during the show season. The squadron spends January through March training at Naval Air Facility El Centro, California.

In any given year, an estimated 11 million spectators watch the Blue Angels at shows.

Blue Angels pilots also visit more than 50,000 people each show season – March through November – at school and hospital visits.

For more information, visit *www.blueangels.navy.mil*.

Courtesy Photo

ACC demonstrates F-22 Raptor's capabilities

The Air Combat Command F-22 Demonstration Team at Langley Air Force Base performs precision aerial maneuvers to demonstrate the unique capabilities of the world's only operational fifth-generation fighter aircraft.

The F-22 Raptor is the Air Force's newest fighter aircraft. Its combination of stealth, supercruise, maneuverability, and integrated avionics, coupled with improved supportability, represents an exponential leap in war-fighting capabilities.

Team members also exhibit the professional qualities the Air Force develops in the people who fly, maintain and support these aircraft.

The team is comprised of an F-22 demonstration pilot and 12 other members including crew chiefs and avionics specialists.

U.S. Air Force photo/Joel Cooke

F-22 Raptor - General Characteristics

Primary Function: Air dominance, multi-role fighter
Contractor: Lockheed-Martin, Boeing
Power Plant: Two Pratt & Whitney F119-PW-100 turbofan engines with afterburners and two-dimensional thrust vectoring nozzles.
Thrust: 35,000-pound class (each engine)
Wingspan: 44 feet, 6 inches (13.6 meters)
Length: 62 feet, 1 inch (18.9 meters)
Height: 16 feet, 8 inches (5.1 meters)
Weight: 43,340 pounds (19,700 kilograms)
Maximum Takeoff Weight: 83,500 pounds (38,000 kilograms)
Fuel Capacity: Internal: 18,000 pounds (8,200 kilograms); with 2 external wing fuel tanks: 26,000 pounds (11,900 kilograms)
Payload: Same as armament air-to-air or air-to-ground loadouts; with or without 2 external wing fuel tanks.
Speed: Mach 2 class with supercruise capability
Range: More than 1,850 miles ferry range with 2 external wing fuel tanks (1,600 nautical miles)
Ceiling: Above 50,000 feet (15 kilometers)
Armament: One M61A2 20-millimeter cannon with 480 rounds, internal side weapon bays carriage of two AIM-9 infrared (heat seeking) air-to-air missiles and internal main weapon bays carriage of six AIM-120 radar-guided air-to-air missiles (air-to-air loadout) or two 1,000-pound GBU-32 JDAMs and two AIM-120 radar-guided air-to-air missiles (air-to-ground loadout)
Crew: One
Unit Cost: $143 million
Initial operating capability: December 2005
Inventory: Total force, 183

Alaska's joint forces capabilities demonstration

Most military operations involve two or more of the services working together. These joint operations are led by several regional "unified" commanders. Alaska military forces operate under the Alaskan Command.

While each of the services operates under separate command structures for daily operations, during wartime or contingencies, they fall under a single commander, LT Gen Russell Handy.

The Arctic Thunder 2016 Joint Forces Demonstration Team will show Alaskans how forces from different services can come together in an example of military front line operations.

Get set for the fast action and an amazing display of the interoperability of the services and the lethal combat power the military provides.

Interoperability and combat agility are important aspects of all operations in the Pacific theater and are used to defend one of the most strategically important locations in the world – Alaska.

U.S. Air Force photo/Joel Cooke

U.S. Air Force photo/Joel Cooke

Alaska Joint Forces Demonstration:

U.S. Air Force F-22 Raptor
U.S. Air Force HC-130 King
U.S. Air Force F-16 Fighting Falcon
U.S. Air Force C-17 Globemaster III
U.S. Army Alaska UH-60 Black Hawks
U.S. Air Force HH- 60 Pave Hawks
U.S. Army Alaska Humvee
U.S. Army Alaska 105mm howitzer
U.S. Army Alaska Soldiers; and
Opposing Forces

(U.S. Air Force photo/Justin Connaher)

Voice of Arctic Thunder: Larry Strain

Larry Strain spent 15 years as a TV news anchor, leaving to join American Airlines. He retired as managing director of AA's flight department.

A licensed commercial pilot, Strain holds type ratings in jets as well as reciprocating-engine aircraft and has flown in more than 100 air shows. Strain served in ramp operations and marshalling leadership positions with the Canadian Air Force, as principal announcer for Wings Over Houston, Offutt Air Force Base, Naval Air Station Oceana, and the CAF's annual show to name a few.

He has been involved in air show management for many years: Director of Warbirds of America; Warbird Airshow Chairman at Oshkosh; and the Royal Aeronautical Society of Great Britain.

He was selected as the principal announcer for the United States Air Force 50th Anniversary Golden Air Tattoo at Nellis Air Force Base, Nevada.

U.S. Air Force photo/Joel Cooke

Arctic Thunder
Joint Base Elmendorf-Richardson

Saturday, July 30 &
Sunday, July 31
9 a.m. to 5 p.m.
www.jber.af.mil

Scheduled to appear *Note: All Subject to Change*

Arctic Thunder Opening Ceremony
Jason Newburg/Pitts S25
Gary Ward/MX-2
CF-18
Greg Colyer/T-33
Wings of Freedom Flyover
11:45 a.m. Intermission
Anna Serbinenko/Super Decathalon
Team Rocket/F-1 Monoplanes
Joint Forces Demonstration
Jaquie Warda/Extra 300
C-17 Demo
F-22 Demo
P-51 Heritage Flight
Marcus Paine/Stearman
Short Take-Off and Landing/Super Cubs
U.S. Navy Blue Angels

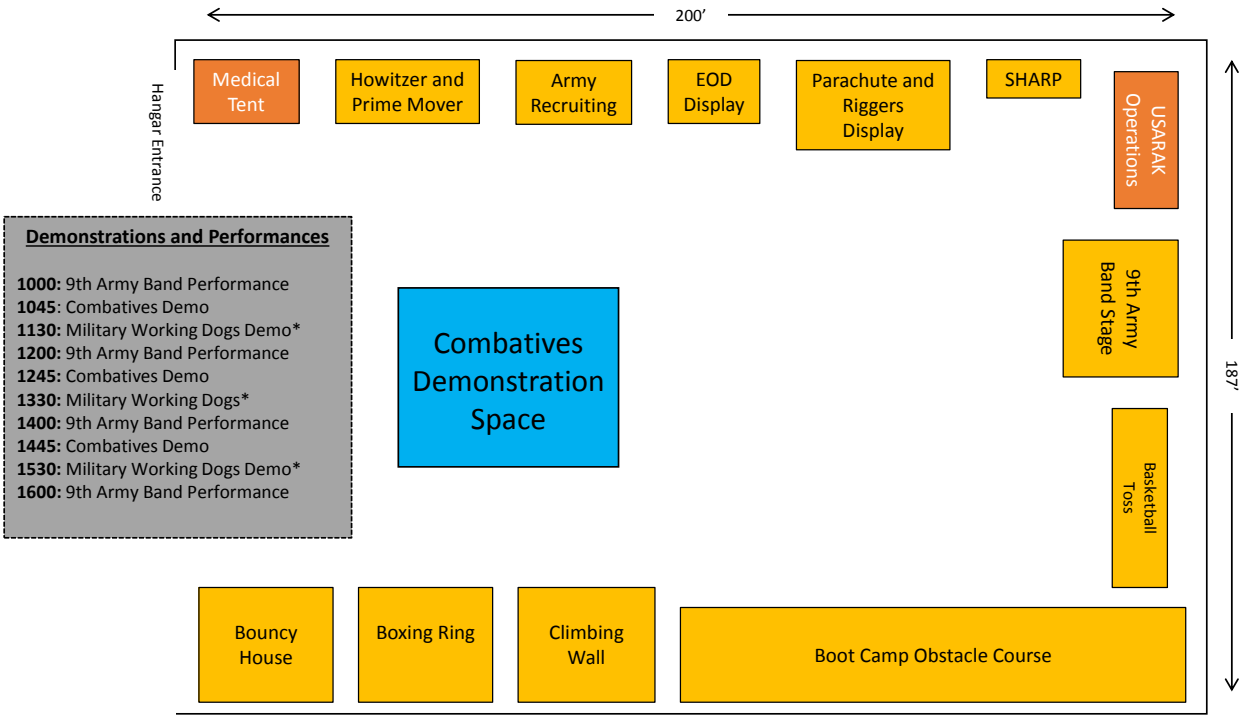
Hangar One

Alaska Territorial Calvary
Alaska State Troopers
Anchorage Police Dept
Anchorage Airport Police and Fire
Anchorage Plastic Models
MSRRE Model Railroads
POW/MIA Car
NRA/TSA/SAPR/AFROTC
DoD Hearing Center of Excellence
U.S. Air Force Recruiters
U.S. Coast Guard
AK Guard Recruiter
U.S. Navy Recruiter/Blue Angels
ATM

Hangar Two

Veteran's Crisis Line
Alaska USA
South Anchorage Dental
American Legion
UAA Tech and Comm College
Visit Anchorage
Operation Christmas Child
Veteran's Day Parade
Caricatures
Bouncy Houses/Bungee Jump
Crazy Hair/Face Painting
Temporary Tattoos
Magicians/Photo Booth
Lost Child Booth
ATM

Hangar 3 Layout



Demonstrations and Performances

1000: 9th Army Band Performance
1045: Combatives Demo
1130: Military Working Dogs Demo*
1200: 9th Army Band Performance
1245: Combatives Demo
1330: Military Working Dogs*
1400: 9th Army Band Performance
1445: Combatives Demo
1530: Military Working Dogs Demo*
1600: 9th Army Band Performance

* Military Working Dog Demos will be held outside of Hangar 3 in a dedicated demo space

The U.S. Army in Alaska

U.S. Army Alaska is at the forefront of protecting America's interests in the volatile Asia-Pacific region while also providing ready and relevant forces to overseas contingency operations.

Joint Base Elmendorf-Richardson is one of the U.S. military's most centrally located power-projection platforms that benefits from joint training opportunities, a breathtaking environment, and diverse climates providing ideal training grounds to prepare Soldiers for the challenges of our time.

U.S. Army Alaska, headquartered at JBER, has units at two installations covering 1.65 million acres with nearly 12,000 Soldiers and 2,500 civilian employees who keep the mission going.

U.S. Army Alaska's commitment to protecting U.S. interests around the world includes tours by the the 4th Brigade Combat Team (Airborne), 25th Infantry Division; 1st Stryker Brigade Combat Team, 25th Infantry Division; and several USARAK-supporting units.

Alaska owes much of its success, infrastructure, roads and accessibility to the Army. Soldiers were here from the moment Alaska was transferred from Russia to the United States, Oct. 18, 1867.

Now, more than 140 years later, U.S. Army Alaska is the Army's forward presence for northern and Pacific-region defense. USARAK's mission is to deploy combat-ready forces to support joint military operations worldwide and serve as the Joint Forces Land Component Command to support Joint Task Force-Alaska.

USARAK's strategic location, superior training capabilities and dynamic relationship with the local civilian communities make Alaska a significant national asset and world-class power projection platform for military operations anywhere in the world.

Extensive training areas throughout Alaska – known as the Joint Pacific Alaska Range Complex, or JPARC – provide extensive backdrops for molding the tough, well-trained Soldiers essential for these new forces. With more than 66,000 square miles of land and air maneuver space and the ability to do live virtual constructive training, JPARC is truly a national treasure for military training.

USARAK executes their mission, focusing on taking care of Soldiers, families and communities; pursuing joint initiatives, responding to theater contingency operations around the Pacific, and expanding our strategic reach to missions spanning the entire globe.

U.S. Air Force photo/Jared Becker

Soldiers and families

USARAK Soldier, spouse and family programs are second to none. Better Opportunities for Single Service members, Army Community Service, medical care, youth services and their outstanding recreational programs rank with the best anywhere in the Army.

One of USARAK's newer programs is Comprehensive Soldier Fitness, which uses individual assessments, tailored virtual training, classroom training and embedded resilience experts to provide the critical skills our Soldiers, family members and Army civilians need.

The goal of the program is to equip and train Soldiers, family members and Army civilians to maximize their potential and face the physical and psychological challenges of sustained operations.

All elements of the CSF program combine to enhance resilience and coping skills, enabling Soldiers, family members, and civilians to grow and thrive in today's Army.

Forces at JBER

4th Brigade Combat Team (Airborne), 25th Infantry Division

The 4th Brigade Combat Team (Airborne), 25th Infantry Division is the first new airborne unit created in the U.S. Army since the end of World War II and is the only airborne brigade-sized unit west of the Mississippi River.

The brigade is a strategic asset to the Department of Defense's Pacific Command. It provides a quick reaction force capable of deploying anywhere in the world in 18 hours or less.

Since the brigade was formed, its Soldiers have conducted training missions all over the world, as well as deploying to Iraq in 2006 and Afghanistan in 2009 and again in 2011, and recently completed a rotation at the Joint Readiness Training Center at Fort Polk, Louisiana.

The brigade consists of: 1st Battalion, 501st Parachute Infantry Regiment; 3rd Battalion, 509th Parachute Infantry Regiment; 1st Squadron (Airborne), 40th Cavalry Regiment; 2nd Battalion, 377th Parachute Field Artillery Regiment; the 725th Brigade Support Battalion (Airborne), and the newly activated Brigade Engineer Battalion.

The 6th BEB incorporated elements of the 2nd Engineer Brigade – adding a strategically significant amount of engineer capability to the modular 4th Infantry Brigade Combat Team.

Army Support Command

The ASC includes the 17th Combat Sustainment Support Command – the nuclear, biological, chemical and radiation specialists of the 95th Chemical Company; the 545th Military Police Company; 98th Support Maintenance Company; the 574th Quartermaster Company, and several other teams and detachments.

ASC also oversees the USARAK Headquarters and Headquarters Detachment, the Sgt. 1st Class Christopher R. Brevard Noncommissioned Officer Academy, and the U.S. Army Northern Warfare Training Center.

Other tenant units

USARAK also hosts the 59th Signal Battalion, Alaska District Veterinary Command, and medical and dental support units.

U.S. Air Force photo/Johnathon Green

The U.S. Air Force In Alaska

Joint Base Elmendorf-Richardson is the largest Air Force installation in Alaska and home of the Headquarters, Alaskan Command; Alaskan NORAD Region; Headquarters, U.S. Army Alaska; 11th Air Force; 673d Air Base Wing; and the 3rd Wing.

Construction on Elmendorf Field began on June 8, 1940, as a major and permanent military air field near Anchorage. The first Air Corps personnel arrived on Aug. 12, 1940.

On Nov. 12, 1940, the War Department formally designated what had been popularly referred to as Elmendorf Field to Fort Richardson.

The air facilities on the post were named Elmendorf Field in honor of Captain Hugh M. Elmendorf, killed in 1933 while flight-testing an experimental fighter near Wright Field, Ohio.

After World War II, the Army moved its operations to the new Fort Richardson and the Air Force assumed control of the original Fort Richardson and renamed it Elmendorf Air Force Base.

The first Air Force unit to be assigned to Alaska, the 18th Pursuit Squadron, arrived in February 1941. The 23rd Air Base Group was assigned shortly afterwards to provide base support.

Other Air Force units poured into Alaska as the Japanese threat developed into World War II. The 11th Air Force was formed at Elmendorf in early 1942. The field played a vital role as the main air logistics center and staging area during the Aleutian Campaign and later air operations against the Kuril Islands.

Following World War II, Elmendorf assumed an increasing role in the defense of North America as the uncertain wartime relations between the United States and the Soviet Union deteriorated into the Cold War. The 11th Air Force was redesignated as the Alaskan Air Command on Dec. 18, 1945.

The Alaskan Command, established Jan. 1, 1947, also headquartered at Elmendorf, was a unified command under the Joint Chiefs of Staff based on lessons learned during World War II when a lack of unity of command hampered operations to drive the Japanese from the western Aleutian Islands of Attu and Kiska.

The uncertain world situation in late l940s and early l950s caused a major build-up of air defense forces in Alaska. The propeller-driven F-5ls were replaced with F-80 jets, which in turn were replaced in succession by F-94s, F-89s, and F-102s interceptor aircraft for defense of North America.

The Air Force built an extensive aircraft control and warning radar system with sites located throughout Alaska's interior and coastal regions. Additionally, the Air Force of necessity built the White Alice Communications System (with numerous support facilities around the state) to provide reliable communications to these far-flung, isolated, and often rugged locales.

The Alaskan NORAD Regional Operations Control Center at Elmendorf served as the nerve center for all air defense operations in Alaska.

U.S. Air Force photo/Robert Barnett

The late 1950s, 1960s, and early 1970s brought about a gradual, but significant decline in air defense forces in Alaska due to mission changes and the demands of the Vietnam War. The Air Force inactivated five fighter squadrons and closed five radar sites.

In 1961, the Department of Defense consigned Ladd Air Force Base to the Army which renamed it Fort Wainwright.

The Alaskan Command was disestablished in 1975. Elmendorf began providing more support to other Air Force commands, particularly Military Airlift Command C-5 and C-141 flights to and from the Far East.

Despite a diminished number of personnel and aircraft, a turning point in Elmendorf's history occurred in 1970 with the arrival of the 43rd Tactical Fighter Squadron in June 1970 from MacDill Air Force Base, Fla.

The squadron gave AAC an air-to-ground capability which was further enhanced with the activation of the 18th Tactical Fighter Squadron at Elmendorf (also with F-4Es) on Oct. 1, 1977.

The strategic importance of Elmendorf was graphically realized in 1980 when the l8th Tactical Fighter Squadron deployed eight of its F-4Es to Korea to participate in exercise Team Spirit.

It was a historic first and underlined an increasing emphasis AAC placed on its tactical role.

The strategic location of Elmendorf and Alaska made it an excellent deployment

center, a fact that validated the contention of Billy Mitchell who, in l935, stated that "Alaska is the most strategic place in the world."

Deployments from Elmendorf and Eielson to the Far East are now conducted on a routine basis.

The 1980s witnessed a period of growth and modernization of Elmendorf. During l982, the 2lst Tactical Fighter Wing converted from F-4s to F-l5s.

Alaska's air defense force was further enhanced with the assignment of two E-3As to Elmendorf in l986.

The Alaskan Command was reestablished at Elmendorf in 1989 as subunified joint service command under the Pacific Command in recognition of Alaska's military importance in the Pacific region.

That importance was further recognized when the F-15E Strike Eagle equipped 90th Tactical Fighter was reassigned to Elmendorf Air Force Base from Clark Air Base in the Philippines in May 1991.


U.S. Air Force photo/James Richardson

The Pacific Regional Medical Center moved from Clark to Elmendorf and construction of a new, expanded hospital began in 1993.

The early 1990s also saw major organizational changes and an expansion of Elmendorf's importance.

In 1991, the 21st Tactical Fighter Wing was reorganized as an objective wing and all the major tenant units on Elmendorf were placed under it.

The 21st Wing inactivated and the 3rd Wing was reassigned from Clark Air Base to Elmendorf Air Force Base on Dec. 19, 1991. This was in keeping with the Air Force's polices of retaining the oldest and most illustrious units during a period of major force reductions.

The Air Force, because of the increased size and complexity of the 3rd Wing, assigned a general officer as its commander in July 1993.

Today, the joint installation continues to grow in size and importance because of its strategic location and training facilities.

Warbirds: Aircraft from America's past

Douglas DC-3

The Douglas DC-3, which made air travel popular and airline profits possible, is universally recognized as the greatest airplane of its time.

It made its first flight in 1935 and was the first airplane that could make money just by hauling passengers, without relying on government subsidies.

In addition to the 455 DC-3 commercial transports built for the airlines, 10,174 were produced as C-47 military transports during World War II.

For both airline and military use, the DC-3 proved to be tough, flexible, and easy to operate and maintain.

C-46 Commando

In March 1940, the Curtiss-Wright company first flew a new 36-seat commercial airliner design, designated the CW-20.

The Army became interested in the aircraft for its cargo/transport capabilities, and ordered a militarized version, the C-46 Commando, be produced, utilizing two 2,000-hp Pratt and Whitney R-2800-43 engines.

The Commando entered service in July 1942, becoming the largest and heaviest twin-engine aircraft in the Air Corps.

The first major variant to appear was the C-46A, which had a large cargo door in the left rear fuselage, 40 folding seats, a strengthened cargo floor, and higher-altitude capable engines. This last feature was to become important when the C-46 began flying cargo "over the Hump" from India to China.

The Commando also served in the Pacific theater, where it moved troops and supplies from island to island, contributing to the defeat of Japan.

In the European Theater, C-46s served as glider tugs, towing two CG-4 gliders at a time across the Rhine River.

Stinson L-13

The Stinson L-13 (sometimes known as the Grasshopper, like other aircraft of its type) was a military utility aircraft first flown in 1945. Mass production was therefore undertaken by Convair, which built some 300 of them.

It was a conventional high-wing tailwheel monoplane used for observation, liaison, and air ambulance duties.

Following their military service, some were converted for civil bush flying use.

T-6 Texan/Harvard

The North American T-6 Texan was known as "the pilot maker" because of its important role in preparing pilots for combat.

Cessna L-19

T-6 Texan

It derived from the 1935 North American NA-16 prototype, a cantilever low-wing monoplane, the Texan filled the need for a basic combat trainer during WW II and beyond.

The original order of 94 AT-6 Texans differed little from subsequent versions such as the AT-6A which revised the fuel tanks or the AT-6D and AT-6F that strengthened as well as lightened the frame with the use of light alloys. In all, more than 17,000 airframes were designed to the Texan standards.

U.S. Navy pilots flew the airplane extensively, under the SNJ designation, the most common of these being the SNJ-4, SNJ-5 and SNJ-6.

British interest in the Texan design was piqued as early as 1938 when it ordered 200 under the designation Harvard Mk I for service in Southern Rhodesia training under the Commonwealth Air Training Program.

As the Harvard Mk I design was modeled after the early BC-1 design, the subsequent Harvard Mk II utilized the improvements of the AT-6 models.

During 1944, the AT-6D design was adopted by the RAF and named the Harvard MK III. This version was used to train pilots in instrument training in the inclement British weather and for senior officers to log required airtime.

During 1946, the Canadian Car and Foundry company developed the Harvard Mk IV trainer to the specifications of the T-6G and produced 285 T-6Js under the same design.

Cessna L-19

One of a long line of civilian light planes converted to military use (like the Taylor, Piper, and Stinson "Grasshoppers" of World War II fame), the Cessna L-19 "Bird Dog" observation and Forward Air Control aircraft traced its origins to the Cessna 170.

Winning a U.S. Army contract in 1950 with its Model 305A redesign of the Model 170, Cessna was awarded an initial contract for 418 of the aircraft, which were then designated L-19A, and named "Bird Dog." By the time the final craft was manufactured in 1962, over 3,400 Bird Dogs had been built.

NOTE: Aircraft history is courtesy of Warbird Alley, an online reference source for information about airworthy, privately-owned, ex-military aircraft.

Anna Serbinenko

Anna is a class 1 aerobatic instructor. She trains aerobatic pilots and aerobatic instructors. Anna flies airshows and coaches Canadian Flight Centre's aerobatic team for competitions. Anna was born in Ukraine and after several years of living in Switzerland, Germany and Brazil, moved to Canada five years ago to make it her home.

In her other life, Anna has a Ph.D. in financial mathematics, fluently speaks six languages and is running multiple businesses. But her passion for flying lifts her away from the daily routine into the sky with a three-dimensional freedom – the one she calls "Sky Dancing".

Super Decathlon

The Super Decathlon is a two-seat fixed conventional gear light airplane designed for flight training and personal use and capable of sustaining aerobatic stresses between +6g and -5g. The Decathlon entered production in the United States in 1970 as a more powerful and stronger complement to the American Champion Citabria line of aircraft.

Team Rocket

Team Rocket is a two-ship combination with Eric Hansen in the F1 Rocket, and Ken Fowler in the Harmon Rocket II. Precision, speed, and high performance aerobatics at its best ... a spectacular show that will bring the crowd to their feet.

Ken Fowler

Ken grew up in British Columbia and started his aviation career by first earning his glider license in 1977. In 1978 he joined the Canadian military as an airframe technician and worked on T-33s, CF-101 Voodoos, and CF-18s before becoming a flight engineer in 1988.

Eric Hansen

A pilot for over 28 years, Eric has over 5,500 hours in a variety of aircraft, over 50 different types at last count. Eric built the F1 Rocket he currently flies over a 13-month period in 2002, and a Ravin 500 aircraft in 2010. With Team Rocket, Eric has travelled over much of North America to air shows as far away as Alaska and Acapulco.

Harmon Rocket II

Ken flies a Harmon Rocket II, which he built and maintains. This aircraft is a highly modified RV-4. Power is from a Lycoming IO-540, custom built by Progressive Air of Kamloops, British Columbia and produces 300 horsepower at 2800 RPM. The aircraft's empty weight is only 1146 lbs, which gives it excellent high-speed aerobatic performance and awesome vertical performance. Although not an unlimited aerobatic aircraft such as the Extra 300 or Pitts, this Harmon Rocket will outperform all such aircraft going vertical.

F1 Rocket

Eric flies the F1 Rocket which is a sleeker, modified version of the Harmon Rocket II.

Greg Colyer

Gregory “Wired” Colyer took his first flight at age 7 in a Cessna 172 with Dr. Lee Schaller out of the Schellville airport in Sonoma, California. Hooked ever since, Greg has been flying for almost three decades after earning his license in 1982 while serving in the Army from 1982 to 1987. His passion for the cockpit never left him as he continued to fly as a hobby and an occasional airshow. After flying with his friend Kay Eckhart, in one of his Lockheed T-33s in 2007, Greg set his sights on an upgrade to the U.S. Air Force’s first operational jet and a real piece of U.S. aviation history, acquiring a T-33 and naming it Ace Maker in 2008.

T-33 Ace Maker II

The T-33 is a F-80 with a lengthened fuselage to make room for the second tandem seat. It entered service during the 1950s, and the Navy also acquired the type and had it modified for blue-water operation as the TV-2. It was the Air Force’s first jet trainer. It soon was dubbed the 'T-Bird' and was being produced under license in both Japan and Canada.

Courtesy Photo

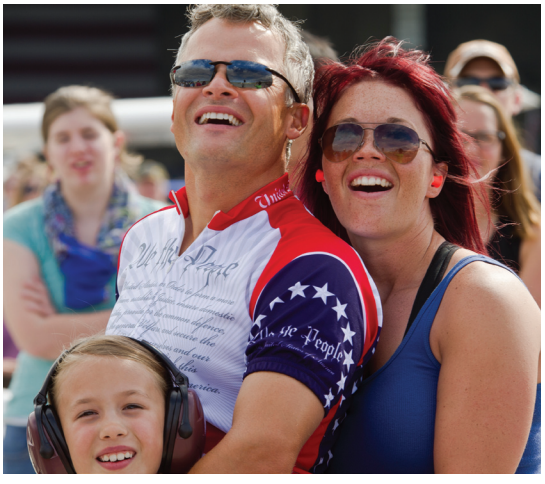
Logan Abel, 4, covers his ears to protect him from the loud noise created by the aerial demonstrations during Arctic Thunder Open House 2014. (U.S. Air Force photo/Efren Lopez)

A Robinson R22 Beta II helicopter sits on the flight line during Arctic Thunder 2014. (U.S. Air Force photo/Tammie Ramsouer)

A C-130 sits on the flight line during the 2014 Arctic Thunder Open House. (U.S. Air Force photo/Tammie Ramsouer)

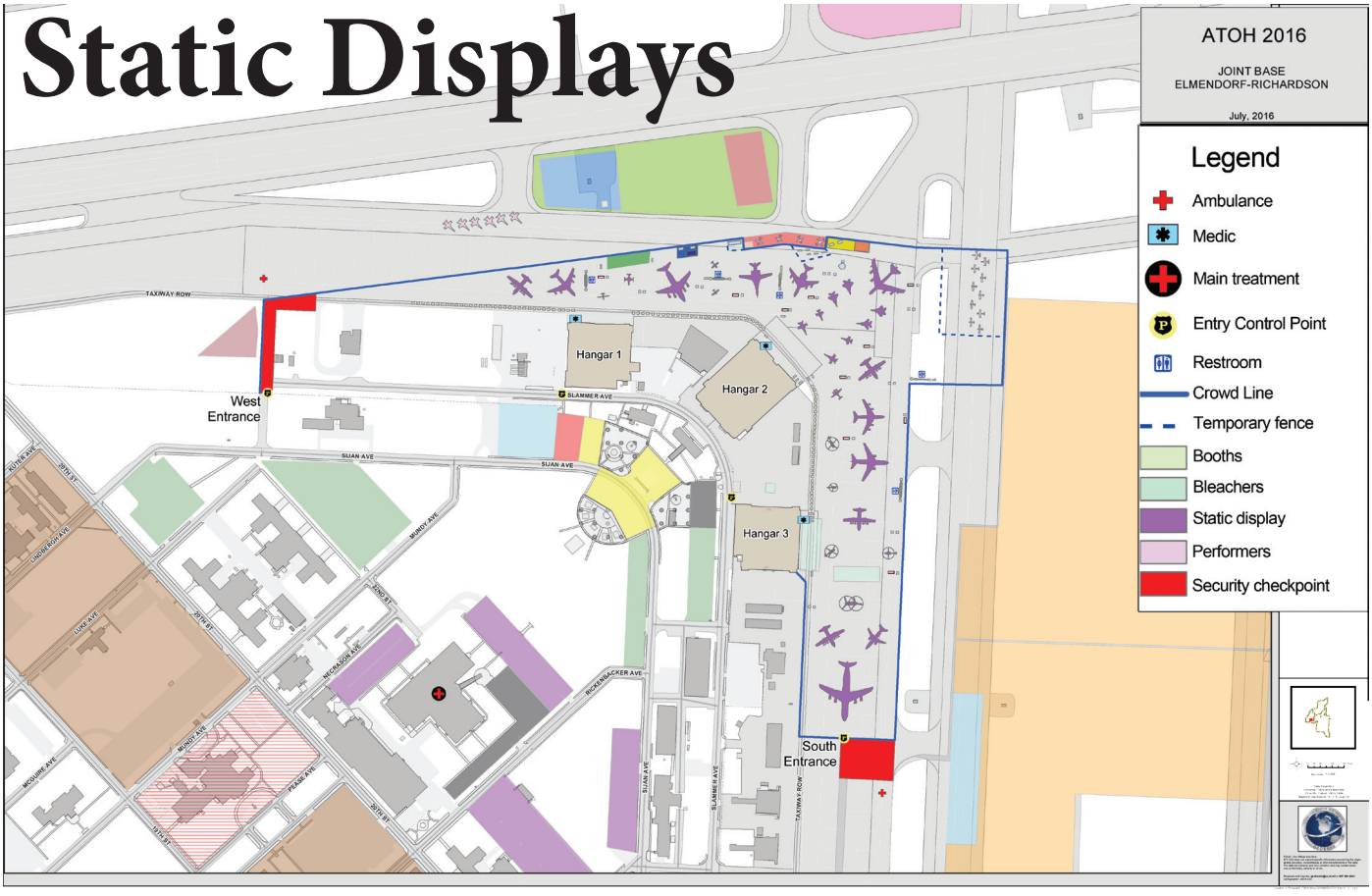
Sgt. Anthony Webb, a gunner with 2nd Battalion, 377th Parachute Field Artillery Regiment, looks through the sight of a M119 105-mm howitzer July 26, 2014, during JBER's Arctic Thunder Open House. (U.S. Air Force photo/David Bedard)

A T-6 Texan sits on the flight line during 2014 Arctic Thunder Open House. (U.S. Air Force photo/Tammie Ramsouer)



Shay Underwood, center Heather Flugel and their daughter Kaylee 8, look at aerial demonstrations during Arctic Thunder Open House 2014. (U.S. Air Force photo/Efren Lopez)

Static Displays



Jacquie Warda

Jacquie Warda became the first female pilot to enter the air show business at the age of 50. With over 2,800 flight hours and more than 1,000 coast-to-coast air show performances behind her, Jacquie has proven that she has the talent, stamina, discipline and guts to reach beyond the limits placed on her by naysayers. In fact, she broke even more stringent cultural boundaries when she became the first female solo pilot to perform at the 2010 Al Ain Aerobatic Show in the United Arab Emirates. Jacquie is a powerful inspiration to the millions of fans who realize that they too can accomplish great things in life.

Courtesy Photo

Extra 300

As the world's most successful performance and unlimited category aerobatic aircraft, the Extra 300 series remains unrivaled in its class. Its proven performance in international aerobatic competition, combined with its docile handling and dependable stability, translate into a comfortable cross-country touring machine. For pure power, handling and performance nothing comes close.

The Extra 300 is a two-seat, tandem arrangement, mid-wing aerobatic monoplane with conventional (taildragger) landing gear, offering exceptional aerobatic performance.

Marcus Paine


Courtesy Photo

Following the footsteps of former Alaskan aviator legends, Alaskan Marc Paine brings the thrill of aerobatic flight to his hometown of Anchorage, where he has lived for more than 40 years.

Raised on a homestead in Rabbit Creek, Marc has been a pilot for over 20 years and is the founder and Chief Flight Instructor of Unusual Attitudes LLC at Merrill Field, a flight school that teaches Unusual Attitude Recovery, Stall/Spin Awareness and aerobatic flight. Marc is a skilled instructor, adept at teaching pilots of all skill levels new ways of thinking about the principals of flight and mastering the airplane in every attitude. He is an FAA Safety Counselor, and a regular speaker on Stall/Spin Awareness at FAA Safety Seminars throughout Alaska, and nationally at aviation events including Oshkosh and Sun N Fun.

PT17

The PT-17, widely known as the Stearman, Boeing Stearman or Kaydet, served as a primary trainer for the United States Army Air Forces, the United States Navy (as the NS & N2S), and with the Royal Canadian Air Force as the Kaydet throughout World War II. After the conflict was over, thousands of surplus aircraft were sold on the civilian market. In the immediate postwar years they became popular as crop dusters, sports planes, and for aerobatic and wing walking use in air shows.

STOL Super Cub

The Super Cub is one of the most popular aircraft in all of Alaska and is well suited for the variety of conditions and rugged terrain encountered in rural and remote areas of the state. The plane is known for its incredible short take-off and landing capabilities. For Arctic Thunder 2016, we are privileged to have Bob Breeden and Hank Swan. Bob Breeden is the record holder, landing his Super Cub in a world record 20 feet, and a take-off distance of 24 feet. Hank flies an experimental hot rod Super Cub called "Got Rocks" and is making his second appearance at Arctic Thunder. They will be joined by a 1941 L-1 aircraft and the L-13 for a joint civilian and military short field take-off and landing.

Courtesy Photo

Gary Ward

Gary developed an interest in airplanes as an early teenager, soloed at age 16 in a Piper J-3 Cub and has been passionate about aviation ever since. After high school and a tour with the Air Force as a jet engine mechanic, Gary graduated from the Georgia Institute of Technology with a degree in Aerospace Engineering. He worked as a design engineer on the Cessna Citation for Cessna for about a year before "switching hats" to work in a family operated lumber manufacturing business.

Gary started flying airshows in 1998 in a Pitts S2-B and then in the Giles 202 from 1999 through 2005. In 2006 he became the first pilot to fly airshows in the awesome and exciting new MX2. The MX2 is an all-carbon-fiber monoplane powered by a 6 cylinder Lycoming engine "pumped up" by Lycon and is truly state of the art in all-out aerobatic aircraft.

MX-2

The MX2 is the latest design in high energy monoplanes. All of the structural components (with the exception of the landing gear and engine mounts) are constructed of carbon fiber. It is very strong and is designed for well in excess of plus or minus 10 Gs.

It is also very fast and comfortable for an aerobatic airplane. The engine is a Lycoming IO 540 which is able to produce in excess of 350 horsepower.

Viper Airshows

Jason Newburg

Jason Newburg is an extreme aerobatic pilot who loves to share his high energy performances with airshow audiences around the country. He keeps Viper spectators on the edge of their seats and leaves them begging for more. Inspired by his father, Jason had his first solo flight at 16 and by 17, he earned his pilot license.

Pitts Viper

Using the foundation of a Pitts S25, The Viper has taken all the years of aircraft evolution and wrapped it into one exhilarating machine. Custom-built to performance specifications, powered by a Lycoming engine and an MT propeller and coated in premium PPG paint, The Viper dazzles with heart-stopping performance.

Courtesy Photo

Paratroopers assigned to the 4th Infantry Brigade Combat Team (Airborne), 25th Infantry Division, U.S. Army Alaska, assault a simulated enemy position as part of a joint forces demonstration during the 2014 Arctic Thunder Open House. (U.S. Air Force photo/Justin Connaher)

Autographs

U.S. Air Force photo/Joseph Araiza