MOODY AIR FORCE BASE PRESENTS

THUNDER
OVER SOUTH GEORGIA

FEATURING THE USAF THUNDERBIRDS

Saturday & Sunday
October 28-29

FREE ADMISSION
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A Product of The Valdosta Daily Times

WELCOME FROM THE COMMANDER

Welcome to Moody Air Force Base, home of the historic Flying Tigers and America's Battlefield Airmen.

On behalf of the men and women of the 23d Wing and the 93d Air Ground Operations Wing, we are honored to host you at the 2017 Thunder Over South Georgia Open House.

Team Moody is comprised of over 5,000 active duty military and civilian personnel. Since 9/1 1 Airmen from Team Moody have been suppo11ing operations all over the world including

Afghanistan, Iraq, Africa, and Europe. Our Airmen answer the Nation's call every day in order to protect the freedoms we all enjoy. I am proud to serve alongside them as their dedication and service inspires me every day—hope it inspires you as well.

With that said, all that we accomplish would not be possible without what we believe is the best community support in the Air Force for our Airmen and their families at home.

There is something special about Moody and the support we receive from the local area. I could not be more grateful to be a part of such an outstanding community.

This year's Open House and Air Show promises to be a world- class event featuring the U.S. Air Force Thunderbirds, Team Moody assets, and many other exciting performances. We hope you will enjoy the fun-filled activities with family and friends and have the chance to get to know a few of our Airmen.

This is an opportunity for us to open our gates to you and showcase the pride we lake every day in serving the Nation. I look forward to the opportunity to personally meet many of you and say thank you for serving Moody Air Force Base. Without you we could not accomplish the mission.

Attack, Rescue. Prevail!

Sincerely,

Jennifer M. Short, Commander, 23d Wing, Moody Air Force Base

SCHEDULE

FRIDAY 27 OCTOBER:

- Friday will be a practice airshow for military members and their families.
- First aerial practices will begin around 11 a.m. and end around 3:30 p.m.
- The Thunderbirds will be taking off around 2:30 p.m.

SATURDAY AND SUNDAY 28-29 OCTOBER:

11:30 a.m. – Opening Ceremony featuring the Wings of Blue and Steen Skybolt

11:47 a.m. – Interstate Comedy Act

12:00 p.m. – "Homewrecker" Jet Truck

12:10 p.m. – T-6 Texan Aerobatic Demonstration

12:23 p.m. – MiG-17 Aerobatic Demonstration

12:36 p.m. – Pacific Theater Aerial Demonstration

12:49 p.m. – Combat Search and Rescue Demonstration

1:16 p.m. – Steen Skybolt

1:29 p.m. – P-51 Mustang Aerial Demonstration

1:42 p.m. – Interstate Comedy Act

2:16 p.m. – A-10 Heritage Flight Demonstration Team

2:27 p.m. – MX-2 Aerobatic Demonstration

2:40 p.m. – "Homewrecker" Jet Truck races MX-2

2:50 p.m. – Interstate Comedy Act

3:00 p.m. – United States Air Force Thunderbirds

**Please note that these times are flexible and subject to change*

ACCESS TO BASE

Department of Defense ID

Card holders may enter through the Davidson Road gate and will be directed to the designated parking area. Non-Department of Defense ID Card holders may enter through the North Gate or the Cemetery Gate and will be directed to the designated parking area. All vehicles and personnel who enter Moody AFB are subject to search. Follow the direction of the Lowndes County Sheriff Deputies that will be directing traffic on Bemiss Road. Each person must be in possession of a valid government issued ID card, such as a driver's license, while on the installation.

Non-DoD personnel

Do not have to obtain a pass to enter Moody AFB during the airshow. Handicap parking will be available upon display of a handicap decal.

Prohibited Items:

All weapons that includes firearms, sharp objects, knives, explosives, or dangerous objects. Bags with medical equipment and baby related items, strollers and small purses will be permitted and are subject to search. All other bags, including backpacks, alcoholic beverages and large containers, such as coolers, non-service animals, projectiles, including fisbees, footballs and inflatable balls are prohibited. Also, outside food and drinks (not including water), illegal drugs and paraphernalia, laser pointers, drones/SUAS, walkie-talkies, HAM radios, scanners, bicycles, skateboards, rollerblades are prohibited.

USAF ACADEMY WINGS OF BLUE PARCHUATE TEAM

OUR MISSION

The Wings of Blue have a long standing commitment to personal and organizational excellence as well as a storied history of success. While the airspace that the Wings of Blue operates in is one of the busiest in the world, their drop zone is one of the safest. The primary mission of the Wings of Blue is to run the Air Force's Basic Freefall Parachuting course, known as Airmanship 490 (AM-490). Members of the team serve primarily as jumpmasters and instructors for this course, devoting most of their time to teaching students about parachuting and training them to make unassisted freefall skydives. AM-490 is the only certified first-jump program in the world where students can make their first freefall jump without assistance. Each year, over 700 cadets are given the opportunity to take AM-490 and earn their jump wings.

The Wings of Blue has both a demonstration team and a competition team. The demonstration team travels across the country to airshows, sporting events, and other venues to represent the Air Force in precision parachuting. Similarly, the competition team represents the Air Force by competing with teams from around the country in 6-way speed formations, 4-way relative work, 2-way free fly, and sport accuracy.

2017 MOODY AFB OPEN HOUSE THANK YOU SPONSORS

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Moody's 2015 Air Show.

United States Air Force Thunderbirds.

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For organizations that do not have a sponsorship or advertising budget, you may show your support through a donation. Donor recognition is limited to a thank you letter and the appropriate "donated by" name plate if applicable.

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AIR CORPS AEROROBICS

Living history in honor of the Greatest Generation

Air Corps Aerobatics provides not only an airshow aerobatic routine but living history as well.

In period dress we bring to life the end of the training cycle, where our young cadet or Lieutenant was about to earn his wings. If he passed this last checkride...

Where she came from...

J's Bird was received by the Royal Canadian Air Force (RCAF) on 9 September 1952 and served with No. 1 Flying Instructor's School at RCAF Station Trenton, Ontario. The aircraft was stuck from the records on 15 August 1966. It also spent some time with the Canadian Warplane Heritage, a flying museum similar to the American Airpower Heritage in this country, based in Ontario, Canada. After that it ended up in Vancouver, British Columbia where it was used in an aerial combat operation; "fighter pilot for a day" if you will.

The paint scheme represents that applied to training and administrative aircraft in Britain during World War II. The serial number you see actually belongs to a Harvard Mk II that saw service in England during that period. In that sense it is completely accurate, or inaccurate, depending on your point of view.

The Family Relations...

The model was first ordered by the British Empire in 1938 and should not be confused with the Wirraway or Yale, which are part of the same family. Once North American Aviation produced a successful airframe, the US military caught on and purchased the aircraft as the T-6 Texan for the Air Corps and the SNJ for the US Navy. Production stopped for good in 1954 with 15,649 Texans and Harvards produced.

There are about 600 left flying today throughout the world. The numbers are sometimes debated, as production lapsed at war's end and, in the US, airframes were ran back through the assembly line to produce the T-6G/SNJ-6. Canada used new-old stock and new production stock to produce the Harvard Mk 4.

Whichever model it may be, it's powered by Pratt & Whitney R-1340-AN1, nine-cylinder radial engine producing 600 hp at takeoff. US models had a short stack exiting the cowl's right side while the Canadians added about 7 feet to that and inserted an intensifier tube for the cabin heater, understandable given Canadian winters. British Spotting Manuals mention the sound of the Harvard as an identifying feature, claiming it sounded like a noisy two-stroke motorcycle. During World War II, it trained almost all Allied pilots, and in some variants trained aerial gunners with a swivel gun mounted in the rear cockpit. At one time or another, most countries of the world including some old enemies have used this airframe. In the post WWII period the airframe was also employed in a ground attack role by many countries and saw service with the USAF as a Mosquito, the LT-6, doing FAC (forward air controller) work in Korea.

Manufacturer

Canadian Car and Foundry (under license from North American Aviation). Wing Span: 42 feet, 4 inches. Length: 27 feet, 11 inches. Maximum Gross Weight: Approximately 5700 pounds. Engine: One (1) Pratt & Whitney R-1340-AN-1. Horsepower: 600 rated at TO (36 inches of Manifold Pressure/ 2250 RPM). Cruise Speed: 135 Knots at 27 inches MP/1750 RPM/27 gph (at least that's what I get)

MX-2 AEROBATIC SHOW

Welcome

Gary Ward Airshow began his airshow career in 1998 in a Pitts S2-B. In 1999, he moved to the Giles 202 and in 2006, he became the first pilot to begin flying airshows in the awesome new MX2! The MX2 is the absolute latest in unlimited aerobatic aircraft. It is strong, fast, and very agile! The entire airframe is constructed of aerospace quality carbon fiber to provide maximum strength and stiffness with minimum weight. The MX2 is powered by a Lycoming engine modified by LYCON to produce more than 350 HP! Please check out our website for more information about one of the most exciting and entertaining performances you will ever see in any aircraft.

The Performance

Gary puts the MX2 through one of the most exciting performances you will ever see. The action starts on take off as Gary pulls steeply up and goes into a spectacular take off maneuver! The entire sequence is jam packed with breathtaking gyrations that range from zero speed hovers to dives in excess of 250 mph! The MX2 is so powerful that at the end of an inverted flat spin, rotation is stopped and the MX2 will fly out, inverted, without the nose ever dropping below the horizon! Gary makes full use of the power and agility of the MX2 to perform many maneuvers that an "airplane just isn't supposed to do!"

A-10C THUNDERBOLT II

Mission

A-10 Thunderbolt IIs have excellent maneuverability at low air speeds and altitude, and are highly accurate weapons-delivery platforms. They can loiter near battle areas for extended periods of time and operate under 1,000-foot ceilings (303.3 meters) with 1.5-mile (2.4 kilometers) visibility. Their wide combat radius and short takeoff and landing capability permit operations in and out of locations near front lines. Using night vision goggles, A-10/OA-10 pilots can conduct their missions during darkness.

Thunderbolt IIs have Night Vision Imaging Systems, or NVIS, goggle compatible single-seat cockpits forward of their wings and a large bubble canopy which provides pilots all-around vision. The pilots are protected by titanium armor that also protects parts of the flight-control system. The redundant primary structural sections allow the aircraft to enjoy better survivability during close air support than did previous aircraft.

The aircraft can survive direct hits from armor-piercing and high explosive projectiles up to 23mm. Their self-sealing fuel cells are protected by internal and external foam. Manual systems back up their redundant hydraulic flight-control systems. This permits pilots to fly and land when hydraulic power is lost.

The Thunderbolt II can be serviced and operated from bases with limited facilities near battle areas. Many of the aircraft's parts are interchangeable left and right, including the engines, main landing gear and vertical stabilizers.

Avionics equipment includes multi-band communications; Global Positioning System and inertial navigations systems; infrared and electronic countermeasures against air-to-air and air-to-surface threats. And, it has a Pave Penny laser spot tracker system; a heads-up display to display flight and weapons delivery information; and a low altitude safety and targeting enhancement system, which provides constantly computed impact and release points for accurate ordnance delivery. There is also a low-altitude autopilot and a ground collision avoidance system.

The A-10 is currently undergoing the precision engagement modification, which adds upgraded cockpit displays, moving map, hands on throttle and stick, digital stores management, LITENING and Sniper advanced targeting pod integration, situational awareness data link or SADL, GPS-guided weapons, and upgraded DC power. Precision engagement modified aircraft are designated as the A-10C.

The Thunderbolt II can employ a wide variety of conventional munitions, including general purpose bombs, cluster bomb units, laser guided bombs, joint direct attack munitions or JDAM), wind corrected munitions dispenser or WCMD, AGM-65 Maverick and AIM-9 Sidewinder missiles, rockets, illumination flares, and the GAU-8/A 30mm cannon, capable of firing 3,900 rounds per minute to defeat a wide variety of targets including tanks.

Background

The first production A-10A was delivered to Davis-Monthan Air Force Base, Ariz., in October 1975. It was designed specially for the close air support mission and had the ability to combine large military loads, long loiter and wide combat radius, which proved to be vital assets to the United States and its allies during Operation Desert Storm and Operation Noble Anvil.

The upgraded A-10C reached initial operation capability in September 2007. Specifically designed for close air support, its combination of large and varied ordnance load, long loiter time, accurate weapons delivery, austere field capability, and survivability has proven invaluable to the United States and its allies. The aircraft has participated in operations Desert Storm, Southern Watch, Provide Comfort, Desert Fox, Noble Anvil, Deny Flight, Deliberate Guard, Allied Force, Enduring Freedom and Iraqi Freedom.

HH-60G PAVE HAWK

Mission

The primary mission of the HH-60G Pave Hawk helicopter is to conduct day or night personnel recovery operations into hostile environments to recover isolated personnel during war. The HH-60G is also tasked to perform military operations other than war, including civil search and rescue, medical evacuation, disaster response, humanitarian assistance, security cooperation/aviation advisory, NASA space flight support, and rescue command and control.

Features

The Pave Hawk is a highly modified version of the Army Black Hawk helicopter which features an upgraded communications and navigation suite that includes integrated inertial navigation/global positioning/Doppler navigation systems, satellite communications, secure voice, and Have Quick communications.

All HH-60Gs have an automatic flight control system, night vision goggles with lighting and forward looking infrared system that greatly enhances night low-level operations. Additionally, Pave Hawks have color weather radar and an engine/rotor blade anti-ice system that gives the HH-60G an adverse weather capability.

Pave Hawk mission equipment includes a retractable in-flight refueling probe, internal auxiliary fuel tanks, two crew-served 7.62mm or .50 caliber machineguns, and an 8,000-pound (3,600 kilograms) capacity cargo hook. To improve air transportability and shipboard operations, all HH-60Gs have folding rotor blades.

Pave Hawk combat enhancements include a radar warning receiver, infrared jammer and a flare/chaff countermeasure dispensing system.

HH-60G rescue equipment includes a hoist capable of lifting a 600-pound load (270 kilograms) from a hover height of 200 feet (60.7 meters), and a personnel locating system that is compatible with the PRC-112 survival radio and provides range and bearing information to a survivor's location. Pave Hawks are equipped with an over-the-horizon tactical data receiver that is capable of receiving near real-time mission update information.

Background

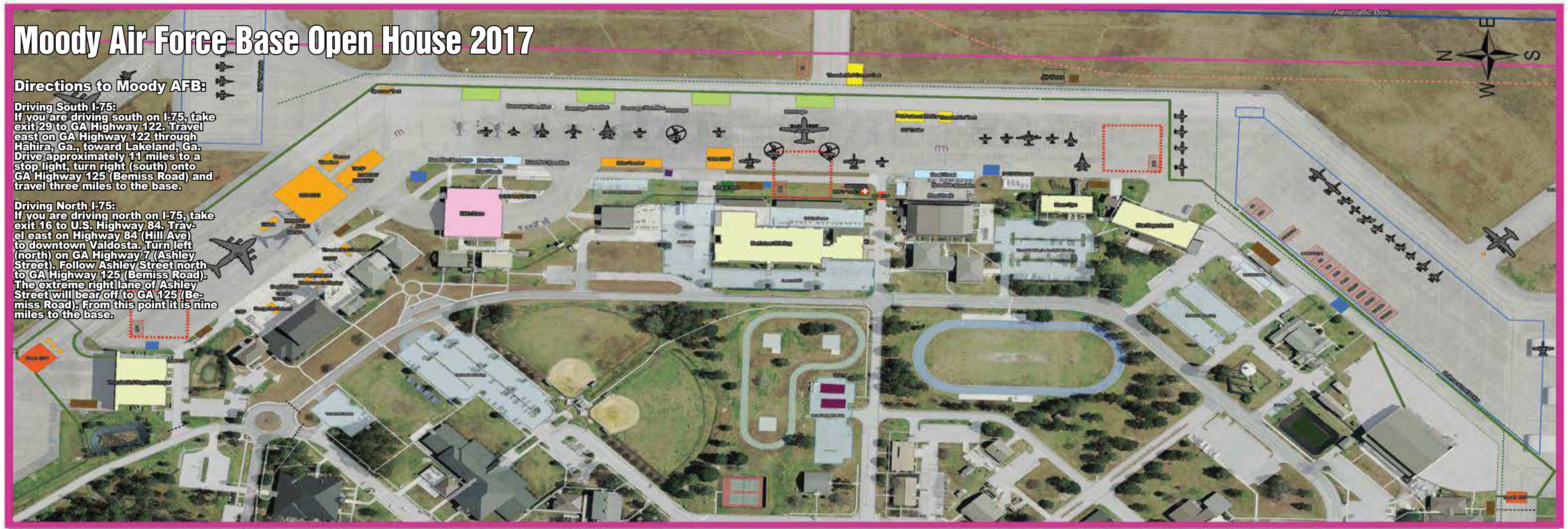
The Pave Hawk is a twin-engine medium-lift helicopter operated by Air Combat Command, Pacific Air Forces, Air Education and Training Command, U.S. Air Forces in Europe, Air National Guard and Air Force Reserve Command. Pave Hawks have a long history of use in contingencies, starting in Operation Just Cause. During Operation Desert Storm they provided combat search and rescue coverage for coalition forces in western Iraq, coastal Kuwait, the Persian Gulf and Saudi Arabia. They also provided emergency evacuation coverage for U.S. Navy SEAL teams penetrating the Kuwaiti coast before the invasion.

During Operation Allied Force, Pave Hawks provided continuous combat search and rescue coverage for NATO air forces, and successfully recovered two Air Force pilots who were isolated behind enemy lines. In the aircraft's humanitarian relief missions, three Pave Hawks deployed in March 2000 to Mozambique, Africa, to support international flood relief operations. The HH-60s flew 240 missions in 17 days and delivered more than 160 tons of humanitarian relief supplies.

After Hurricane Katrina in September 2005, more than 20 active-duty, Reserve, and National Guard Pave Hawks were deployed to Jackson, Miss., in support of recovery operations in New Orleans and surrounding areas. Pave Hawk crews flew 24-hour operations for nearly a month, saving more than 4,300 Americans from the post-hurricane devastation. Within 24 hours of the earthquake and tsunami in Japan, HH-60Gs deployed to support Operation Tomodachi providing search and rescue capability to the disaster relieve

Today, Pave Hawks continue to deploy in support of operations in Afghanistan, Iraq and Libya. HH-60 crews have aided hundreds of American, coalition, and foreign-national personnel by conducting personnel recovery and medical evacuations or MEDEVAC missions under low visibility, low illumination conditions at all altitudes.

Moody Air Force Base Open House 2017



Directions to Moody AFB:

Driving South I-75:
If you are driving south on I-75, take exit 29 to GA Highway 122. Travel east on GA Highway 122 through Hahira, Ga., toward Lakeland, Ga. Drive approximately 11 miles to a stop light, turn right (south) onto GA Highway 125 (Bemiss Road) and travel three miles to the base.

Driving North I-75:
If you are driving north on I-75, take exit 16 to U.S. Highway 84. Travel east on Highway 84 (Hill Ave) to downtown Valdosta. Turn left (north) on GA Highway 7 (Ashley Street). Follow Ashley Street north to GA Highway 125 (Bemiss Road). The extreme right lane of Ashley Street will bear off to GA 125 (Bemiss Road). From this point it is nine miles to the base.

HC-130J COMBAT KING II

Mission

The HC-130J replaces HC-130P/Ns as the only dedicated fixed-wing Personnel Recovery platform in the Air Force inventory. It is an extended-range version of the C-130J Hercules transport. Its mission is to rapidly deploy to execute combatant commander directed recovery operations to austere airfields and denied territory for expeditionary, all weather personnel recovery operations to include airdrop, airland, helicopter air-to-air refueling, and forward area ground refueling missions. When tasked, the aircraft also conducts humanitarian assistance operations, disaster response, security cooperation/aviation advisory, emergency aeromedical evacuation, and noncombatant evacuation operations.

Features

Modifications to the HC-130J have improved navigation, threat detection and countermeasures systems. The aircraft fleet has a fully-integrated inertial navigation and global positioning systems, and night vision goggle, or NVG, compatible interior and exterior lighting. It also has forward-looking infrared, radar and missile warning receivers, chaff and flare dispensers, satellite and data-burst communications, and the ability to receive fuel inflight via a Universal Aerial Refueling Receptacle Slipway Installation (UARRSI).

The HC-130J can fly in the day; however, crews normally fly night at low to medium altitude levels in contested or sensitive environments, both over land or overwater. Crews use NVGs for tactical flight profiles to avoid detection to accomplish covert infiltration/exfiltration and transload operations. To enhance the probability of mission success and survivability near populated areas, crews employ tactics that include incorporating no external lighting or communications, and avoiding radar and weapons detection.

Drop zone objectives are done via personnel drops and equipment drops. Rescue bundles include illumination flares, marker smokes and rescue kits. Helicopter air-to-air refueling can be conducted at night, with blacked out communication with up to two simultaneous helicopters. Additionally, forward area refueling point operations can be executed to support a variety of joint and coalition partners.

Background

The HC-130J is a result of the HC/MC-130 recapitalization program and replaces Air Combat Command's aging HC-130P/N fleet as the dedicated fixed-wing personnel recovery platform in the Air Force inventory. The 71st and 79th Rescue Squadrons in Air Combat Command, the 550th Special Operations Squadron in Air Education and Training Command, the 920th Rescue Group in Air Force Reserve Command and the 106th Rescue Wing, 129th RQW and 176th Wing in the Air National Guard will operate the aircraft.

First flight was 29 July 2010, and the aircraft will serve the many roles and missions of the HC-130P/Ns. It is a modified KC-130J aircraft designed to conduct personnel recovery missions, provide a command and control platform, in-flight-refuel helicopters and carry supplemental fuel for extending range or air refueling.

In April 2006, the personnel recovery mission was transferred back to Air Combat Command at Langley AFB, Va. From 2003 to 2006, the mission was under the Air Force Special Operations Command at Hurlburt Field, Fla. Previously, HC-130s were assigned to ACC from 1992 to 2003. They were first assigned to the Air Rescue Service as part of Military Airlift Command.

MIG 17-F

Made famous by the Vietnam War, the MiG-17F was the primary enemy aircraft engaged in the skies over Vietnam by U.S. aircraft, such as the A-4,A-7, F-8, B-52, F-100, F-105 and its primary nemesis, the F-4 Phantom II.

During that war and up until the F-16 entered service, it was the tightest-turning fighter in the world. When production started in the 1950s, its VK-1F engine made it one of the first production jet fighters in the world with an afterburner. The MiG-17F could carry bombs, rockets, or extra fuel tanks under its wings.

In its lower nose it carried some of the largest guns ever used for air-to-air combat—two 23mm cannons and one 37mm cannon. The MiG-17F #1611 entered service with the Soviet bloc in March 1960 and wasn't withdrawn from service until May 1990. Photos of the aircraft in Europe can be seen at www.fighterjets.com.

The MiG-17F can maintain 8g turns (8g = 8 times the force of gravity on the pilot's body), attain a maximum speed of 715 mph (Mach 1.04) and can climb to 30,000 feet in only 3 minutes, with an initial rate of climb better than 14,000 feet per minute.

The MiG-17F was a very nimble fighter that could prove deadly unless respected when engaged by pilots with superior training and tactics such as those used by the U.S. Navy and Air Force. One moment's complacency when fighting against the MiG-17F could prove fatal. It was flown by over 20 countries, three of which still fly it. Because of its famous heritage and great maneuverability, it makes one of the best air show jets in the world, able to stay in front of the fans while still flying at great speeds.

Randy Ball's MiG-17F spent almost four years in restoration, and is one of only a handful of vintage jets flying the North American air show circuit. It has an authentic paint job and is the only MiG available for ground display with fully restored guns. Randy's MIG has been seen by millions of air show fans across North America and has been featured in numerous publications, appearing on t-shirts, newspapers, posters, and more. It has been filmed on several occasions including performing as the enemy aircraft with the USAF's F-4 Phantom* for the Discovery Channel and History Channel. To Keep up with #1611 go to www.facebook.com/randyball.

JELLY BELLY INTERSTATE CADET FLYING COMEDY ACT

About Kent

Kent Pietsch fell in love with flying when he was four years-old. Five decades later, his passion has not waned.

Since 1973, Kent has performed his incredible aerobatic routines for millions of people at more than 400 shows that have taken him to quality venues throughout the United States.

Kent grew up in Minot, North Dakota, where every day after school, he'd find a way to get to the airport, and do whatever it took to get into an airplane.

While most aerobatic performers have one basic program, Kent executes three storied acts that leave spectators mesmerized. These include a dead-stick (turning the engine off) routine from 6,000 feet and a rooftop landing on a moving RV! However, Kent is best known for a comedy act that features a detached aileron (wing flap) and a mesmerizing wingtip-scraping pass down the runway that you must see to believe. When Kent is at the controls of his plane, it is impossible not to watch him perform.

Kent loves to fly, but the audience is always his number-one priority. "If you can't entertain, you have no business being out there," he said. "The gratification is in knowing that people are enjoying themselves." Kent's humble nature and willingness to interact with fans make him a crowd favorite wherever he performs.

He flies an 800-pound Interstate Cadet with a 37-foot wingspan. The plane's horizontally opposed four-cylinder engine can generate 90 horsepower and a G-force ranging from -3 to +5.

P-63 KING COBRA

Designed as a follow-on to the P-39 Airacobra, the P-63 was more powerful and excelled in performance over the P-39. The P-63 became the most produced fighter plane of World War Two to never see combat with the US Army Air Corps. The reasons for this come down primarily to two, it was extremely short-ranged (internal fuel supply was only 122 gallons, enough to fly into combat perhaps, but not enough to return and its performance was not superior to the P-51 Mustang that was already in production and operational. What the Air Force needed was a long-ranged escort fighter with the speed and maneuverability to defeat the Luftwaffe and escort the bombers of the Eighth Air Force to Germany. The P-63, for all of its sensuous curves, was simply a relatively fast climbing point interceptor, cramped, expensive to build, with an engine supercharger that wasn't overly reliable, and demanding of more maintenance than either the P-51 or P-47. In May 1944, an Air Force report from Eglin Field concluded that the P-63 in its current form cannot be operationally suitable front-line fighter. "Thus, almost all P-63's were sent to Russia, with 300 being given to the Free French. In the U.S. service, the P-63 was utilised as a "target" in the live-firing Pinball project, hardly an auspicious occupation for a beautiful airplane.

T-6A TEXAN II

Mission

The T-6A Texan II is a single-engine, two-seat primary trainer designed to train Joint Primary Pilot Training, or JPPT, students in basic flying skills common to U.S. Air Force and Navy pilots.

Features

Produced by Raytheon Aircraft, the T-6A Texan II is a military trainer version of Raytheon's Beech/Pilatus PC-9 Mk II.

Stepped-tandem seating in the single cockpit places one crewmember in front of the other, with the student and instructor positions being interchangeable. A pilot may also fly the aircraft alone from the front seat. Pilots enter the T-6A cockpit through a side-opening, one-piece canopy that has demonstrated resistance to bird strikes at speeds up to 270 knots.

The T-6A has a Pratt & Whitney Canada PT6A-68 turbo-prop engine that delivers 1,100 horsepower. Because of its excellent thrust-to-weight ratio, the aircraft can perform an initial climb of 3,100 feet (944.8 meters) per minute and can reach 18,000 feet (5,486.4 meters) in less than six minutes.

The aircraft is fully aerobatic and features a pressurized cockpit with an anti-G system, ejection seat and an advanced avionics package with sunlight-readable liquid crystal displays.

Background

Before being formally named in 1997, the T-6A was identified in a 1989 Department of Defense Trainer Aircraft Master Plan as the aircraft portion of the Joint Primary Aircraft Training System, or JPATS. The system includes a suite of simulators, training devices and a training integration management system.

On Feb. 5, 1996, Raytheon was awarded the JPATS acquisition and support contracts. The first operational T-6A arrived at Randolph Air Force Base, Texas, in May 2000. The full rate production contract was awarded in December 2001. Air Force production of the aircraft was completed in 2010.

The T-6A is used to train JPPT students, providing the basic skills necessary to progress to one of four training tracks: the Air Force bomber-fighter or the Navy strike track, the Air Force airlift-tanker or Navy maritime track, the Air Force or Navy turboprop track and the Air Force-Navy helicopter track.

Instructor pilot training in the T-6A began at Randolph AFB in 2000. JPPT began in October 2001 at Moody AFB, Ga., and is currently at Columbus AFB, Miss., Vance AFB, Okla, and Laughlin AFB and Sheppard AFB in Texas.

F-22 RAPTOR

Mission

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 warfighting capabilities. The Raptor performs both air-to-air and air-to-ground missions allowing full realization of operational concepts vital to the 21st century Air Force. The F-22, a critical component of the Global Strike Task Force, is designed to project air dominance, rapidly and at great distances and defeat threats attempting to deny access to our nation's Air Force, Army, Navy and Marine Corps. The F-22 cannot be matched by any known or projected fighter aircraft.

Features

A combination of sensor capability, integrated avionics, situational awareness, and weapons provides first-kill opportunity against threats. The F-22 possesses a sophisticated sensor suite allowing the pilot to track, identify, shoot and kill air-to-air threats before being detected. Significant advances in cockpit design and sensor fusion improve the pilot's situational awareness. In the air-to-air configuration the Raptor carries six AIM-120 AMRAAMs and two AIM-9 Sidewinders.

The F-22 has a significant capability to attack surface targets. In the air-to-ground configuration the aircraft can carry two 1,000-pound GBU-32 Joint Direct Attack Munitions internally and will use on-board avionics for navigation and weapons delivery support. In the future air-to-ground capability will be enhanced with the addition of an upgraded radar and up to eight small diameter bombs. The Raptor will also carry two AIM-120s and two AIM-9s in the air-to-ground configuration.

Advances in low-observable technologies provide significantly improved survivability and lethality against air-to-air and surface-to-air threats. The F-22 brings stealth into the day, enabling it not only to protect itself but other assets.

The F-22 engines produce more thrust than any current fighter engine. The combination of sleek aerodynamic design and increased thrust allows the F-22 to cruise at supersonic airspeeds (greater than 1.5 Mach) without using afterburner — a characteristic known as supercruise. Supercruise greatly expands the F-22 's operating envelope in both speed and range over current fighters, which must use fuel-consuming afterburner to operate at supersonic speeds.

The sophisticated F-22 aerodesign, advanced flight controls, thrust vectoring, and high thrust-to-weight ratio provide the capability to outmaneuver all current and projected aircraft. The F-22 design has been extensively tested and refined aerodynamically during the development process.

The F-22's characteristics provide a synergistic effect ensuring F-22A lethality against all advanced air threats. The combination of stealth, integrated avionics and supercruise drastically shrinks surface-to-air missile engagement envelopes and minimizes enemy capabilities to track and engage the F-22. The combination of reduced observability and supercruise accentuates the advantage of surprise in a tactical environment.

The F-22 will have better reliability and maintainability than any fighter aircraft in history. Increased F-22 reliability and maintainability pays off in less manpower required to fix the aircraft and the ability to operate more efficiently.

Background

The Advanced Tactical Fighter entered the Demonstration and Validation phase in 1986. The prototype aircraft (YF-22 and YF-23) both completed their first flights in late 1990. Ultimately the YF-22 was selected as best of the two and the engineering and manufacturing development effort began in 1991 with development contracts to Lockheed/Boeing (airframe) and Pratt & Whitney (engines). EMD included extensive subsystem and system testing as well as flight testing with nine aircraft at Edwards Air Force Base, Calif. The first EMD flight was in 1997 and at the completion of its flight test life this aircraft was used for live-fire testing.

The program received approval to enter low rate initial production in 2001. Initial operational and test evaluation by the Air Force Operational Test and Evaluation Center was successfully completed in 2004. Based on maturity of design and other factors the program received approval for full rate production in 2005. Air Education and Training Command, Air Combat Command and Pacific Air Forces are the primary Air Force organizations flying the F-22. The aircraft designation was the F/A-22 for a short time before being renamed F-22A in December 2005.

TUSKEGEE AIRMEN

History of the Airmen

There were only a handful of black aviators in the early 1900s, and most were self-taught or trained overseas because of the severe lack of opportunities for all black Americans at that time in our country. Famous civilian black aviators like Eugene Bullard, Bessie Coleman, Willa Brown, James Herman Banning, John C. Robinson and Cornelius Coffey were early pioneers in the industry, but were not allowed to serve their country as military pilots because of their race.

Like many others in the late 1930s, the individuals who become known as the Tuskegee Airmen were full of patriotic zeal and eager to join military service as the war in Europe and Asia intensified. What set them apart was that they had the passion and skill to fight the enemy from the air as pilots, something that black Americans had never been allowed to do before. Segregation and racism were still profoundly rooted in the country, especially in the southern United States. Black Americans that joined military service were restricted as to what kind of jobs they could hold, and all branches of the Armed Services were just as segregated as the civilian world. It was unjust and unfair, and, left a lot of talent untapped that would prove important to the war effort.

What is known today as the United States Air Force was not established until 1947. Leading up to the war that branch of service was called the U.S. Army Air Corps (USAAC). Many black Americans applied to the USAAC's Civilian Pilot Training Program in the late 1930s for flight training, but were initially rejected because of the color of their skin. At that time, all branches of the U.S. military were deeply segregated and were still influenced by a 1925 Army War College report full of cruel and untrue generalizations about the behavior of black men during wartime and the black race in general.

President Franklin Roosevelt issued the Executive Order 9981: Desegregation of the Armed Forces.

President Franklin D. Roosevelt was petitioned by many black Americans to allow them to enroll in the Civilian Pilot Training Program.

In 1940, under pressure from activists, the press and political groups, and responding to the campaign promises of President Franklin D. Roosevelt, the USAAC reversed its position and began to accept black applicants to their flight programs, and the next year created a segregated unit for these new aspiring pilots. The program would include all the pilots and enlisted support personnel who would give their service to the all-black unit.

The new cadets who would one day be called the Tuskegee Airmen were determined to create a record of excellence during their training and future war service so there could be no doubt about their value as patriots and aviators. Their ability to triumph over adversity and go down in history as extremely adept pilots not only proved their worth, but continues to inspire future generations to rise above their own obstacles to achieve success. They were not only pilots – the Tuskegee Airmen were a collective group of over 14,000 men and women who came together in all the various roles required to enable the pilots in their history-making journey.

In 1942, the African-American paper The Pittsburgh Courier called for a double victory campaign, victory in the fight against fascism abroad and victory in the fight against racism at home. In addition to their war service, the success of the Tuskegee Airmen in the Civilian Pilot Training Program and in the U.S. Army Air Corps played a leading role in the desegregation of the U.S. Armed Forces in 1948, setting the stage for further civil rights laws and social justice for black Americans in the decades to come.

T-38 TALON

Mission

The T-38 Talon is a twin-engine, high-altitude, supersonic jet trainer used in a variety of roles because of its design, economy of operations, ease of maintenance, high performance and exceptional safety record. Air Education and Training Command is the primary user of the T-38 for joint specialized undergraduate pilot training. Air Combat Command, Air Force Materiel Command and the National Aeronautics and Space Administration also use the T-38A in various roles.

Features

The T-38 has swept wings, a streamlined fuselage and tricycle landing gear with a steerable nose wheel. Two independent hydraulic systems power the ailerons, rudder and other flight control surfaces. Critical aircraft components are waist high and can be easily reached by maintenance crews.

The T-38C incorporates a "glass cockpit" with integrated avionics displays, head-up display and an electronic "no drop bomb" scoring system. The AT-38B has a gun sight and practice bomb dispenser.

The T-38 needs as little as 2,300 feet (695.2 meters) of runway to take off and can climb from sea level to nearly 30,000 feet (9,068 meters) in one minute. T-38s modified by the propulsion modernization program have approximately 19 percent more thrust, reducing takeoff distance by 9 percent.

The instructor and student sit in tandem on rocket-powered ejection seats in a pressurized, air-conditioned cockpit.

Background

Air Education and Training Command uses the T-38C to prepare pilots for front-line fighter and bomber aircraft such as the F-15E Strike Eagle, F-15C Eagle, F-16 Fighting Falcon, B-1B Lancer, A-10 Thunderbolt and F-22 Raptor.

The Talon first flew in 1959. More than 1,100 were delivered to the Air Force between 1961 and 1972 when production ended. As the T-38 fleet has aged, specific airframe, engine and system components have been modified or replaced. Pacer Classic is the name given to a sustainment program that integrates essential modifications, and includes major structural replacements into one process.

AETC began receiving T-38C models in 2001 as part of the Avionics Upgrade Program. T-38C models will also undergo a propulsion modernization program which replaces major engine components to enhance reliability and maintainability, and an engine inlet/injector modification to increase available takeoff thrust. These upgrades and modifications, with the Pacer Classic program, should extend the service life of T-38s to 2020.

Advanced JSUPT students fly the T-38C in aerobatics, formation, night, instrument and cross-country navigation training.

Test pilots and flight test engineers are trained in T-38s at the U.S. Air Force Test Pilot School at Edwards Air Force Base, Calif. Air Force Materiel Command uses the T-38 to test experimental equipment such as electrical and weapon systems.

Pilots from most North Atlantic Treaty Organization countries train in the T-38 at Sheppard AFB, Texas, through the Euro-NATO Joint Jet Pilot Training Program.

The National Aeronautics and Space Administration uses T-38 aircraft as trainers for astronauts and as observers and chase planes on programs such as the space shuttle.

F-16 FIGHTING FALCON

Mission

The F-16 Fighting Falcon is a compact, multi-role fighter aircraft. It is highly maneuverable and has proven itself in air-to-air combat and air-to-surface attack. It provides a relatively low-cost, high-performance weapon system for the United States and allied nations.

Features

In an air combat role, the F-16's maneuverability and combat radius (distance it can fly to enter air combat, stay, fight and return) exceed that of all potential threat fighter aircraft. It can locate targets in all weather conditions and detect low flying aircraft in radar ground clutter. In an air-to-surface role, the F-16 can fly more than 500 miles (860 kilometers), deliver its weapons with superior accuracy, defend itself against enemy aircraft, and return to its starting point. An all-weather capability allows it to accurately deliver ordnance during non-visual bombing conditions.

In designing the F-16, advanced aerospace science and proven reliable systems from other aircraft such as the F-15 and F-111 were selected. These were combined to simplify the airplane and reduce its size, purchase price, maintenance costs and weight. The light weight of the fuselage is achieved without reducing its strength. With a full load of internal fuel, the F-16 can withstand up to nine G's — nine times the force of gravity — which exceeds the capability of other current fighter aircraft.

The cockpit and its bubble canopy give the pilot unobstructed forward and upward vision, and greatly improved vision over the side and to the rear. The seat-back angle was expanded from the usual 13 degrees to 30 degrees, increasing pilot comfort and gravity force tolerance. The pilot has excellent flight control of the F-16 through its "fly-by-wire" system. Electrical wires relay commands, replacing the usual cables and linkage controls. For easy and accurate control of the aircraft during high G-force combat maneuvers, a side stick controller is used instead of the conventional center-mounted stick. Hand pressure on the side stick controller sends electrical signals to actuators of flight control surfaces such as ailerons and rudder.

Avionics systems include a highly accurate enhanced global positioning and inertial navigation systems, or EGI, in which computers provide steering information to the pilot. The plane has UHF and VHF radios plus an instrument landing system. It also has a warning system and modular countermeasure pods to be used against airborne or surface electronic threats. The fuselage has space for additional avionics systems.

Background

The F-16A, a single-seat model, first flew in December 1976. The first operational F-16A was delivered in January 1979 to the 388th Tactical Fighter Wing at Hill Air Force Base, Utah.

The F-16B, a two-seat model, has tandem cockpits that are about the same size as the one in the A model. Its bubble canopy extends to cover the second cockpit. To make room for the second cockpit, the forward fuselage fuel tank and avionics growth space were reduced. During training, the forward cockpit is used by a student pilot with an instructor pilot in the rear cockpit.

All F-16s delivered since November 1981 have built-in structural and wiring provisions and systems architecture that permit expansion of the multirole flexibility to perform precision strike, night attack and beyond-visual-range interception missions. This improvement program led to the F-16C and F-16D aircraft, which are the single- and two-place counterparts to the F-16A/B, and incorporate the latest cockpit control and display technology. All active units and many Air National Guard and Air Force Reserve units have converted to the F-16C/D.

The F-16 was built under an unusual agreement creating a consortium between the United States and four NATO countries: Belgium, Denmark, the Netherlands and Norway. These countries jointly produced with the United States an initial 348 F-16s for their air forces. Final airframe assembly lines were located in Belgium and the Netherlands. The consortium's F-16s are assembled from components manufactured in all five countries. Belgium also provides final assembly of the F100 engine used in the European F-16s. Recently, Portugal joined the consortium. The long-term benefits of this program will be technology transfer among the nations producing the F-16, and a common-use aircraft for NATO nations. This program increases the supply and availability of repair parts in Europe and improves the F-16's combat readiness.

U.S. Air Force F-16 multirole fighters were deployed to the Persian Gulf in 1991 in support of Operation Desert Storm, where more sorties were flown than with any other aircraft. These fighters were used to attack airfields, military production facilities, Scud missiles sites and a variety of other targets.

During Operation Allied Force, U.S. Air Force F-16 multirole fighters flew a variety of missions to include suppression of enemy air defense, offensive counter air, defensive counter air, close air support and forward air controller missions. Mission results were outstanding as these fighters destroyed radar sites, vehicles, tanks, MiGs and buildings.

Since Sept. 11, 2001, the F-16 has been a major component of the combat forces committed to the war on terrorism flying thousands of sorties in support of operations Noble Eagle (Homeland Defense), Enduring Freedom in Afghanistan and Iraqi Freedom

C-17 GLOBEMASTER III

Mission

The C-17 Globemaster III is the newest, most flexible cargo aircraft to enter the airlift force. The C-17 is capable of rapid strategic delivery of troops and all types of cargo to main operating bases or directly to forward bases in the deployment area. The aircraft can perform tactical airlift and airdrop missions and can transport litters and ambulatory patients during aeromedical evacuations when required. The inherent flexibility and performance of the C-17 force improve the ability of the total airlift system to fulfill the worldwide air mobility requirements of the United States.

The ultimate measure of airlift effectiveness is the ability to rapidly project and sustain an effective combat force close to a potential battle area. Threats to U.S. interests have changed in recent years, and the size and weight of U.S.-mechanized firepower and equipment have grown in response to improved capabilities of potential adversaries. This trend has significantly increased air mobility requirements, particularly in the area of large or heavy outsize cargo. As a result, newer and more flexible airlift aircraft are needed to meet potential armed contingencies, peacekeeping or humanitarian missions worldwide. The C-17 is capable of meeting today's demanding airlift missions.

Features

Reliability and maintainability are two outstanding benefits of the C-17 system. Current operational requirements impose demanding reliability and maintainability. These requirements include an aircraft mission completion success probability rate of 92 percent, only 20 aircraft maintenance man-hours per flying hour, and full and partial mission availability rates of 74.7 and 82.5 percent, respectively. The Boeing warranty assures these figures will be met.

The C-17 measures 174 feet long (53 meters) with a wingspan of 169 feet, 10 inches (51.75 meters). The aircraft is powered by four, fully reversible, Federal Aviation Administration-certified F117-PW-100 engines (the military designation for the commercial Pratt & Whitney PW2040), currently used on the Boeing 757. Each engine is rated at 40,440 pounds of thrust. The thrust reversers direct the flow of air upward and forward to avoid ingestion of dust and debris. Maximum use has been made of commercial off-the-shelf equipment, including Air Force-standardized avionics.

The aircraft is operated by a crew of three (pilot, co-pilot and loadmaster), reducing manpower requirements, risk exposure and long-term operating costs. Cargo is loaded onto the C-17 through a large aft door that accommodates military vehicles and palletized cargo. The C-17 can carry virtually all of the Army's air-transportable equipment.

Maximum payload capacity of the C-17 is 170,900 pounds (77,519 kilograms), and its maximum gross takeoff weight is 585,000 pounds (265,352 kilograms). With a payload of 169,000 pounds (76,657 kilograms) and an initial cruise altitude of 28,000 feet (8,534 meters), the C-17 has an unrefueled range of approximately 2,400 nautical miles. Its cruise speed is approximately 450 knots (.74 Mach). The C-17 is designed to airdrop 102 paratroopers and equipment.

The design of the aircraft allows it to operate through small, austere airfields. The C-17 can take off and land on runways as short as 3,500 feet (1,064 meters) and only 90 feet wide (27.4 meters). Even on such narrow runways, the C-17 can turn around using a three-point star turn and its backing capability.

Background

The C-17 made its maiden flight on Sept. 15, 1991, and the first production model was delivered to Charleston Air Force Base, now known as Joint Base Charleston, S.C., on June 14, 1993. The first squadron of C-17s, the 17th Airlift Squadron, was declared operationally ready Jan. 17, 1995. The Air Force originally programmed to buy 120 C-17s. Current budget plans increased the total number to 223 aircraft.

The C-17 is operated by Air Mobility Command at Travis AFB, Calif.; Dover AFB, Del.; Joint Base Lewis-McChord, Wash.; Joint Base Charleston, S.C., and Joint Base McGuire-Dix-Lakehurst, N.J.

The Air National Guard flies C-17s from the 172d Airlift Wing, Jackson, Miss., and the 105th Airlift Wing, Stewart ANGB, N.Y. Additionally, Air Force Materiel Command operates two C-17s at Edwards AFB, Calif., and Pacific Air Forces operates aircraft at Joint Base Elmendorf-Richardson, Alaska, and Joint Base Pearl Harbor-Hickam, Hawaii.

The Air Force Reserve Command operates aircraft at March Air Reserve Base, Calif., and Wright Patterson AFB, Ohio. Air Education and Training Command has 17 aircraft at Altus AFB, Okla.

T-1A JAYHAWK

Mission

The T-1A Jayhawk is a medium-range, twin-engine jet trainer used in the advanced phase of specialized undergraduate pilot training for students selected to fly airlift or tanker aircraft. It is also used to support navigator training for the U.S. Air Force, Navy, Marine Corps and international services.

Features

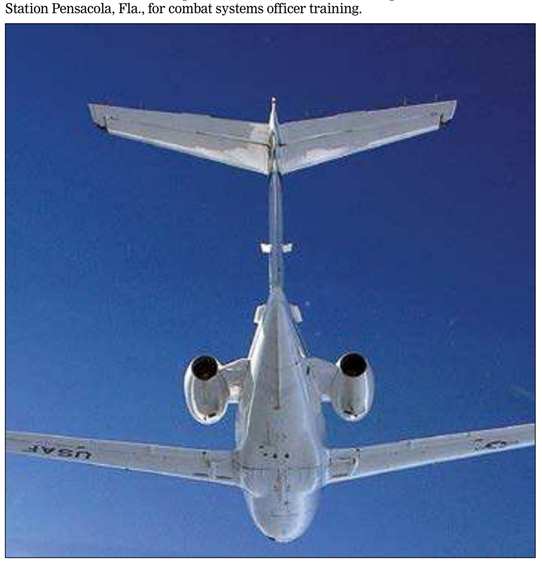
The swept-wing T-1A is a military version of the Beech 400A. It has cockpit seating for an instructor and two students and is powered by twin turbofan engines capable of an operating speed of 538 mph. The T-1A differs from its commercial counterpart with structural enhancements that provide for increased bird strike resistance and an additional fuselage fuel tank.

Background

The first T-1A was delivered to Reese Air Force Base, Texas, in January 1992, and student training began in 1993.

Starting in 1993, undergraduate pilots who have graduated from their primary aircraft have proceeded to specialized training tailored for their follow-on assignments. The T-1A is used in advanced training for students identified to go into airlift or tanker aircraft. Those selected for bombers and fighters receive their advanced in the T-38.

The T-1A is used at Columbus AFB, Miss., Laughlin AFB, Texas, and Vance AFB, Okla. It is also used at Randolph AFB, Texas, to train instructor pilots and at Naval Air Station Pensacola, Fla., for combat systems officer training.



(U.S. Air Force photo by Andrea Jenkins/Released)

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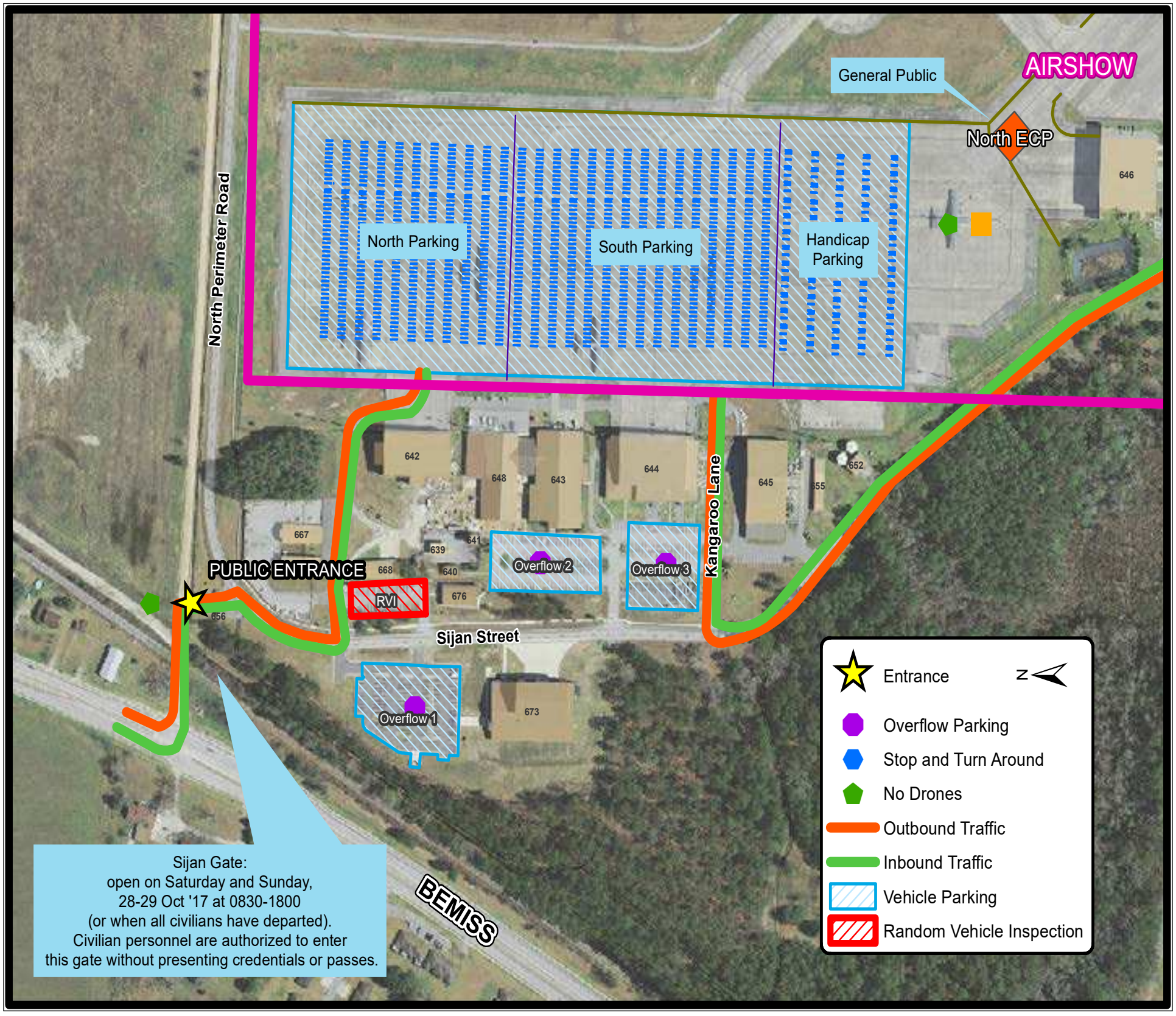

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