

## USAF WARFARE CENTER



### **MISSION**

The USAFWC mission is to shape the way our force fights through operational testing, tactics development and advanced training in air, space and cyberspace at the operational and tactical levels. Our mission statement defines what the USAFWC does and why we exist. We have adopted six specified tasks to help shape our efforts and communicate to every Airman in the command what is important, why it is important and where the USAFWC is headed in the future.

**Analyze Adversaries:** Coordinate an "Aggressor Force" to provide realistic and relevant opposition for training exercises, operational test and evaluation, and tactics development, at the operational and tactical levels.

**Certify Equipment:** Provide weapons systems certified for integrated combat operations to the Air and Space Component Commanders and their MAJCOMs.

**Define Tactics:** Provide single source, joint, integrated, definitive combat employment tactics for all USAF forces.

**Train Leaders:** Train the future operational and tactical leaders of the USAF through advanced educational and tactical courses.

**Enhance Performance:** Provide directed, joint, integrated exercise and composite training venues for operational and tactical units from the USAF, sister services, and coalition partners.

**Cross-Domain Integration:** Integrate air, space, and cyberspace capabilities, systems, forces and operations, in and through all domains, to deliver precise effects for the Joint Force Commander across the full range of military operations.

To execute this mission, the USAFWC oversees operations of five wings: the 57th Wing, 99th Air Base Wing, and 98th Range Wing at Nellis AFB, Nevada; the 53rd Wing at Eglin AFB, Florida; and the 505th Command and Control Wing at Hurlburt Field, Florida. Additionally, the USAFWC directly oversees the operations of the Coalition and Irregular Warfare Center of Excellence and the 561st Joint Tactics Squadron at Nellis AFB.

The mission of the 561st Joint Tactics Squadron (561 JTS) is to hone our warfighter's capability to fly, fight and win, by providing timely tactical lessons learned and current TTPs to ensure training results in increased AEF readiness and lethality.

The Coalition and Irregular Warfare Center of Excellence (CIWC) supports AF Component Commanders by facilitating the development of innovative applications of US Air Force airpower in irregular warfare (IW) and by facilitating the development of relevant airpower capabilities, capacities and relationships in partner nations in the Global War on Terror (GWOT)

The Headquarters, Air Warfare Center (AWFC) is responsible for missions vital to the United States Air Force, and is chartered to test, to train, and to develop tactics. It also possesses a combat mission, recently deploying its combat units to contingencies in southwest Asia and Africa.

The Center manages the world's most advanced combat pilot training in the USAF Fighter Weapons School. The School trains attack pilots in the A-10, fighter pilots in the F-15, F-15E, F-16, and F-111, bomber pilots in the B-1 and the B-52, and helicopter pilots in the HH-60. It also develops combat tactics and publishes Multi-Command Manual 3-1, and trains intelligence warriors. The Center also directs the Battle staff Training School which develops and conducts command, control, communications, computers and intelligence exercises near Eglin Air Force Base in the Florida panhandle. It also has the Air Ground Operations School at Hurlburt Field, Florida, the only US service school devoted to instruction in coordinated joint air ground operations.

The AWFC guides development and operation of the Nellis Range Complex, largest in the world at over three million acres in Nevada. It also manages four Electronic Combat Range Sites stretching from Arkansas to Utah. It has developed advanced systems for air combat maneuvering and mission debriefing for both air superiority (RED FLAG) and close air support (AIR WARRIOR).

The Headquarters, Air Warfare Center conducts specialized training in exercises as diverse as the RED, GREEN and BLUE FLAGS, AIR WARRIOR, and SILVER FLAG ALPHA, and contributes to the Canadian MAPLE FLAG exercise. It supports several important competitions, including GUNSMOKE, LONGSHOT, and WILLIAM TELL.

The Center leads the Air Force in the development and evaluation of new tactics, and performs the vast majority of test and evaluation of Air Force aircraft and munitions. Evaluation of

operational flight programs on most major combat aircraft continues to assure world-wide air superiority. These aircraft include the A-10, the F-15, the F-15E, the F-16, the F-111, the F-17, the B-1, and the B-52. It also develops, validates and tests air operations concepts and doctrine.

The Center is responsible for more than forty percent of all live ammunition expended in the active Air Force. In addition to the aircraft assigned to the Center's units, its troops maintain aircraft from all the sister services and foreign governments. Support services cross the full spectrum of requirements and range from the fleet of trucks required for the flight lines and ranges to personnel services and civil engineering.

The Center's mission extends far beyond the boundaries of Nellis Air Force Base. Indian Springs Air Force Auxiliary Field, about 55 miles north of Las Vegas, hosts the ground combat exercise SILVER FLAG ALPHA and the Air Combat Command competition CONTENDING WARRIOR. Ft Irwin, California, hosts the US Army National Training Center, which provides the ground element for AIR WARRIOR. AWFC has detachments at Ellsworth Air Force Base, South Dakota, evaluating the B-52 and B-1, and at Holloman Air Force Base, New Mexico, testing the stealth fighter F-117. It operates the USAF Battlestaff Training School (Blue Flag) at Eglin Air Force Base, Florida, and the US AF Air Ground Operations School at Hulbert Field, Florida. Also at Hulbert, a command, control, and communications organization tests tactical communications. The Center conducts a weapons system evaluation program at Tyndall Air Force Base, Florida, including a rooftop radar test facility, unique in any of the services. At Kirtland Air Force Base, New Mexico, the Center plans and directs a large-scale simulation facility that duplicates NATO air defense environment.

#### **LINEAGE**

USAF Tactical Fighter Weapons Center established and activated, 26 Aug 1966

Organized, 1 Sep 1966

Redesignated USAF Fighter Weapons Center, 1 Oct 1991

Redesignated USAF Weapons and Tactics Center, 5 Jun 1992

Redesignated Air Warfare Center, 1 Oct 1995

Redesignated USAF Warfare Center, 15 Nov 2005

#### **STATIONS**

Nellis AFB, NV, 1 Sep 1966

#### **ASSIGNMENTS**

Twelfth Air Force, 1 Sep 1966

Tactical Air Command, 20 Mar 1968

Air Combat Command, 1 Jun 1992

#### **WEAPON SYSTEMS**

A-10

F-15

F-16

HH-60  
B-1  
B-52  
UH-1  
RQ-1  
QF-4  
QF-106  
E-9A

## **COMMANDERS**

Maj Gen Ralph G. Taylor Jr., 1 Sep 1966  
Brig Gen Homer K. Hansen, 22 Nov 1969  
Maj Gen William S. Chairsell, 23 Jul 1971  
Maj Gen Gordon F. Blood, 29 Jun 1973  
Maj Gen James A. Knight Jr., 10 Feb 1975  
Maj Gen James R. Hildreth, 12 Jun 1977  
Maj Gen Robert E. Kelley, 30 Mar 1979  
Maj Gen Jack I. Gregory, 3 Jun 1981  
Maj Gen Eugene H. Fischer, 11 May 1983  
Maj Gen Peter T. Kempf, 13 Jul 1985  
Maj Gen Joseph W. Ashy, 21 Jun 1988  
Maj Gen Billy G. McCoy, 19 Jul 1989  
Maj Gen Thomas R. Griffith, 5 Jun 1992  
Maj Gen Richard C. Bethurem, 21 Jul 1994  
Maj Gen Marvin R. Esmond, 4 Apr 1996  
Maj Gen Glen W. Moorhead III, 7 Jul 1998  
Maj Gen Lawrence D. Johnston, 31 Jan 2000  
Maj Gen Stephen Wood, 25 Jun 2002  
Maj Gen Stephen M. Goldfein, 4 Oct 2004  
Maj Gen R. Michael Worden, 6 Oct 2006  
Maj Gen Stephen L. Hoog, 8 Feb 2008  
Maj Gen Stanley T. Kresge, 18 May 2009  
Maj Gen Jay Silveria

## **HONORS**

### **Service Streamers**

### **Campaign Streamers**

### **Armed Forces Expeditionary Streamers**

### **Decorations**

Air Force Organizational Excellence Awards  
1 Jan 1985-31 Dec 1986

1 Jan 1994-30 Apr 1995  
1 Jun 1995-31 May 1996  
Jun 1996-31 May 1997  
1 Jun 1997-31 May 1998  
1 Jun 2003-31 May 2005  
1 Jun 2005-31 May 2006

## EMBLEM



Per bend gules and azure, a lightening flash bendwise throughout or, in chief a target alternating sable and or, issuing from base three arched vapor trails bendwise argent, each terminating below a flight symbol sable dimbriated argent; all within a diminished bordure or. The Shield represents the wings which made up the original Tactical Fighter Weapons Center. The blue symbolizes the sky, the lower portion of the shield, with its stylized aircraft heading skyward, represents the multiple aircraft flown at the Center. The three vapor trails depict development, testing, and evaluation provided for the combat air forces. The upper portion of the shield symbolizes the target with cross hairs in the middle of the bull's eye, portraying weapons accuracy developed and taught at the Center. Red represents the glow of flames from weapons delivered on target. The gold lightning bolt extending from the upper left to the lower right signifies explosive firepower delivered from the sky. (Approved: 5 April 1990)

## MOTTO

### OPERATIONS

Since its establishment, the center functioned as the authoritative agency in the employment of US Air Force tactical fighter weapons. It developed, refined, coordinated, validated and tested fighter concepts, doctrine, tactics, and procedures. Additionally, the center performed various phases of operational test and evaluation of aircraft, various aircraft systems, such as air defense radar and aircrew training devices. It, either directly or indirectly, prepared or monitored Air Force publications on employment tactics, aircrew training, and aircrew weapons delivery. In addition, the center exercised operations command and control of the

"Thunderbirds," the Air Force's official aerial demonstration squadron, supervised courses of the US Air Force Fighter Weapons School, adversary tactics training, and Wild Weasel training, and other combat and tactical schools. Through its subordinate units, the center supervised Red Flag operational training and other continuing air exercises, such as Green Flag and Silver Flag Alpha. The center also directed operations of the US Air Force Bomber and Tanker, Employment School since 1992 and the Air Rescue Center since 1993. The Center also operated one of the largest test ranges, which included the Nevada Test Site, in the US Air Force.

The U.S. Air Force Warfare Center (USAFWC) at Nellis Air Force Base, Nevada, reports directly to Air Combat Command. The Center was founded Sept. 1, 1966, as the U.S. Air Force Tactical Fighter Weapons Center. It was renamed the U.S. Air Force Warfare Center in 2005.

The United States Air Force Warfare Center exists to provide well trained and well equipped combat forces ready to deploy into a combat arena to conduct integrated combat operations. From our training schools and venues to our testing and tactics development programs, we provide a means to equip the force with superb academic training, proven technology, the most current tactics, and a unique opportunity to practice integrated force employment. The USAF Warfare Center mission statement and specified tasks are central to fulfilling our role in supporting the U.S. Air Force's mission to fly, fight and win our nation's wars in air, space and cyberspace.

The Southeast Asian war (Vietnam) had begun by the early 1960s, and Tactical Air Command (TAC) needed to improve technical and operational skills for the widening war. TAG decided to concentrate expertise and resources in Centers committed to specific mission areas. These dedicated units could work full-time on the test and development of technical and operational aspects of weapons systems. The new arrangement replaced a fragmented process that sometimes did not allow fresh developments to get into use. This new system gave TAC a resource for developing and testing tactics, weapons systems variations, and the like, that was immediately responsive to increasing and changing demands from the war.

These master Centers had small headquarters staffs that could absorb increasing war pressures with minimal reorganization. TAG decided to assign particular tasks to individual bases, which would be dedicated to that specific responsibility. The command saw the policy as cost-effective, centralizing the technical experts and dedicating specialized resources in single locations.

The Centers' responsibilities went along then-current operational doctrine. The Special Air Warfare Center (SAWC) dealt with counter-insurgency operations. The Tactical Air Reconnaissance Center (TARC) handled reconnaissance. The Tactical Air Weapons Center (TAWC) worked on the Commander-in-Chief Strike Command (CINCSTRIKE) plan. The Tactical Air Logistics Center (TALC) developed airlift. And the Tactical Fighter Weapons Center (TFWC, and AWFC's predecessor) handled fighter operations.

TAC established the Tactical Fighter Weapons Center at Nellis Air Force Base, Nevada. It had

been the "Home of the Fighter Pilot" since the Korean War days of the early 1950s, and conducted post-graduate fighter training and operational testing and evaluation of fighter weapons systems. Additionally, the Nellis Range, largest in the free world, complemented the new Center's mission. It was a logical placement.

The Center concept is alive and well in the Air Force today. TFWC's successor, Headquarters, Air Warfare Center, remains at Nellis, and reports to Air Combat Command. Air Combat Command redesignated the USAF Weapons and Tactics Center as the Headquarters, Air Warfare Center, on 1 October 1995. Tactical Air Command had established it as the Tactical Fighter Weapons Center (TFWC) on 26 August 1966, with subsequent redesignation as the USAF Fighter Weapons Center and the USAF Weapons and Tactics Center.

The Air Force in the early and mid-1960s experienced significant concerns about the advanced training provided its pilots, and about the integration of its test requirements into a cohesive, useful program. The USAF had established several Centers for specialized studies, and believed that the assets at Nellis could support such a center. The Tactical Air Command began reviewing its internal structure in May 1965 to provide such an organization.

The 4520th Combat Crew Training Wing at Nellis managed the USAF Fighter Weapons School, instructing combat pilots in advanced training in the F-100 Super Sabre, the F-105 Thunderchief, and the F-4C. The Air Staff increased the tactical weapons testing and development chores of the new Center, which began to provide a single nexus for advanced training and comprehensive testing.

Brigadier General Frank K. Everest, Jr., and his steering committee created Project SAND DUNE, the 4520th Combat Crew Training Wing Programming Plan 1-66. General Everest stressed at a Tactical Air Command briefing in June 1966 that the program's importance related directly to the ongoing war. The Center would also become the focal point for fighter expertise.

The United States had changed its international strategy in the late 1950s and early 1960s. In the 1950s, the government's stress had been on overwhelming might, expressed through control of the atomic bomb, which could decimate any opponent.

Strategic thinkers began considering alternatives to absolute devastation; President John F. Kennedy supported a broader response capability following his election in 1960. This expansion of traditional doctrine came to be known as "flexible response," which allowed multiple warfare options. Non-nuclear war included limited war like that in Vietnam, as well as small actions like the action in Grenada (1983) in Panama (1990), and in the Persian Gulf (1991). These limited contingencies required different kinds of training and tactical development than did nuclear war.

The new center that Tactical Air Command planned offered concentrated development offerings and weapons systems, specifically geared to tactical air operations in limited and non-nuclear war. TAG planners developed several versions of the original SAND DUNE plan for the

new Center. The final one, Tactical Air Command Programming Plan 20-66, created ("organized and established") the Tactical Fighter Weapons Center at Nellis Air Force Base on 1 September 1966.

USAF added specific new tasks to the Center, which required increased support forces and more weapons systems. The lengthening war demanded development of improved employment methods, which became one of the principal duties of the Center.

The Air Force identified nine specific requirements. Develop an air superiority fighter with significantly improved aerodynamic performance. Meet Army close air support requirements while not hampering other USAF operations or duplicating resources. Increase airlift for Army deployment of airmobile divisions. Develop non-nuclear weapons and employment techniques. Provide assistance to USAF Special Air Warfare forces in training, counter-insurgency operations, psychological warfare, and military civic action, to counter subversive threats in war theaters. Make command and control systems less vulnerable. Develop lightweight, mobile, air transportable equipment for use in remote area forward bases. Develop squadron level organizations that could deploy and fight with organic personnel and equipment. Achieve night combat equal to day combat. These nine objectives reflected then-current deficiencies as well as goals the Air Force wanted to reach. Contemporary and projected combat demands thus drove the development of weapons systems and of support equipment.

Development of new systems lay mainly in the hands of civilian contractors responding to needs detailed by the Department of Defense. This new way of doing business required more cooperation between the government and industry to meet increased demands. The government had to communicate its needs clearly and the civilian contractors needed to coordinate with the defense research agencies and the tactical air forces to provide better combat capabilities to the war effort and beyond.

The new Center at Nellis did not propose to create new systems—the job of research and development belonged to other Air Force agencies. Instead, the Tactical Fighter Weapons Center would test and evaluate existing and new systems.

The Air Force combat concept of centralized control and decentralized execution also worked for operational test and evaluation (OT&E). Each weapons system was different enough that each system could benefit from specialized OT&E. (This contrasted with tactical air operations, which were similar enough to benefit from a single authority's control.) Headquarters Tactical Air Command provided the centralized direction, made priorities, and allocated resources for test and evaluation programs. The various Centers provided decentralized execution and performed the actual testing and evaluating.

The Air Force designed the test forces as small, specialized units. Under normal circumstances, the combat forces and equipment remained in operations units, and lent the equipment required or participated in the test programs. Thus, the tests included actual operators in the performance of the and evaluations. This close working relationship resulted in a merging of



expertise in the "real" and test worlds. It also got the most recent evaluations into the field more quickly and accurately.

The new Tactical Fighter Weapons Center also developed new combat tactics for the tactical air forces, specifically for use in the Southeast Asian war. The new operational employment concepts ("tactics") were especially for the "workhorse" combat fighters of the 1960s, the F-100, the F-105, and the F-4.

The US AF Fighter Weapons School had been teaching advanced aircraft employment on these jets for several years. The expansion of tactical development was a natural extension of their mission, and in 1969 the Air Force assigned the School to the Center.

One of the most exciting fighter education programs the Center developed in the early 1970s was the Aggressor program. After the end of the Vietnam war, the Air Force wanted to assure that its forces would be better trained in the next limited war. The most likely protagonist would be a Soviet-trained satellite country. USAF designated a special squadron to study, train and fly Soviet-style fighter tactics. These "Aggressors" could then train American pilots to counter anticipated enemies' strategies. Planners in the Air Force believed that this training would both expand American fire-power enormously and save American lives. The squadron lasted as an independent unit until the budget cuts of the early 1990s, and today is incorporated into the RED FLAG exercises.

RED FLAG grew out of the lessons learned from the Vietnam War. The US had lacked realistic training for the war; many airmen and aircrews died who might have lived with better training. The Air Force studied loss rates from the war, and found out that pilots survived much better after ten combat-practice sorties. Realistic combat training for future wars became a priority.

RED FLAG began in 1975 and was assigned its own squadron the following year. It has increased in size; by 1997, RED FLAG produced three exercises annually, each lasting six weeks. The exercises frequently host allied and neutral nations, such as France, Great Britain, and Venezuela. The FLAG concept grew into GREEN FLAG, an electronic combat activity which is the fourth "flag" of the year. The concept of special combat-related training took hold, and the Air Force developed BLUE FLAG, a command and control exercise, and MAPLE FLAG, Canada's combat training employment.

Aircraft improvements and new designs provided increased avenues for training, testing, and tactical development. The A-10, the F-15, the F-111, and the F-16 all came to the Center in the 1970s and 1980s, as the tactical air forces began flying these planes. The Tactical Fighter Weapons Center, and later the Headquarters, Air Warfare Center, had to integrate each airframe into its Weapons School curriculum, into its test and evaluation program, and into tactical development.

Another major training element came to the Center in 1990 when the AIR WARRIOR exercises transferred to Nellis. This exercise was a joint effort of the Army and the Air Force that trained

Air Force pilots and aircrews in how to work with the Army's ground forces. Dedicated to close air support and keeping the soldier on the ground safer, the exercise occurs ten times a year at Fort Irwin, California, the site of the Army's National Training Center.

The backbone of the Center's operations is its range system. The Nellis Range Complex covers over three million square acres, and includes much of central Nevada. The Center has four combat electronic monitoring sites in as many states throughout the country, from Arkansas to Utah, North Dakota to Louisiana. These range and monitoring systems allow the Air Warfare Center to offer an enormous variety of scenarios, threat systems, and operational methods. Excellent flying weather in Nevada and the southern states keeps the Center flying twelve months each year, while extreme cold in South Dakota and extreme heat in Nevada test the endurance of various weapon systems.

The Center activated the first and only operational F-117A Stealth unit, developed at nearby Tonopah Test Range. The squadron has since transferred to the Twelfth Air Force, where the Center's expertise allowed it to fully integrate into the combat air forces.

The Center made sure that combat forces for the Gulf War, Operation Desert Storm, were war-ready. DESERT FLAG temporarily replaced RED FLAG, and prepared combat pilots for desert aerial warfare. The Center sent more people (although not units) to the southwest Asia area during the next several years than any other organization in the Air Force.

Sweeping transformations in the Air Force demanded that the Center change to meet the realities of the post-Cold War era. The merger of the tactical and strategic forces into Air Combat Command allowed the integration of all combat forces under one major command. The Center added bomber responsibilities to its traditional fighter ones in 1992. The Air Warfare Center gained a combat mission the following year when it gained the only Wild Weasel F-4G squadron in the active Air Force (inactivated in 1996), and one of the few combat rescue squadrons. The Air Rescue Service Headquarters became the Combat Rescue School, first a separate school and then merged into the US AF Weapons School. The uniting of tactical and strategic assets brought heavy bombers, the B-1 and B-52, to the Center, along with detachments at Ellsworth Air Force Base, South Dakota, and Barksdale Air Force Base, Louisiana. The Joint Employment Tactics School gave the Center increased expertise in joint and heavy bomber issues. In 1995, the Air Force merged the US AF Weapons and Tactics Center and the US AF Air Warfare Center into the Headquarters, Air Warfare Center. The enlarged Center gained expanded test responsibility in electronic warfare, the Battlestaff Training School and the Air Ground Operations School in Florida's panhandle.

Today, the Headquarters, Air Warfare Center trains, tests, and develops tactics for the A-10, F-15, F-15E, F-16, F-111, F-117, B-1, B-2, B-52, and HH-60. Its newest aircraft is the RQ-1A, the Predator, a medium-altitude reconnaissance unmanned aerial vehicle used most recently in Bosnia. The Center operates the Desert Warfare Center at Indian Springs Air Force Auxiliary Field, about an hour north of Las Vegas. The AIR WARRIOR exercises, held jointly with the Army's National Training Center at Ft Irwin, California, develop and test concepts for the Army's

doctrine of Air Land Battle. The FLAG exercises and the several competitions help hone America's fighting capability.

The Air Warfare Center develops Air Force combat forces, tests and evaluates weapons systems, develops and tests tactics, trains advanced aircrews, hosts competitions, and provides the benchmark for the rest of the Air Force. The Center is world-renowned for its excellence

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USAF Unit Histories  
Created: 27 Feb 2023  
Updated:

Sources  
Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.