



A BRIEF HISTORY AND HERITAGE OF **AFOTEC**

THE AIR FORCE OPERATIONAL TEST & EVALUATION CENTER

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A BRIEF HISTORY OF THE AIR FORCE OPERATIONAL TEST AND EVALUATION CENTER

AIR FORCE OPERATIONAL TEST AND EVALUATION, 1941-1973



In 1941, the Air Corps Proving Ground activated at Eglin Field, Florida, when General Henry H. “Hap” Arnold ordered the creation of an aircraft and armament proving ground. The next year, the Air Corps Proving Ground became the Proving Ground Command, responsible for testing new aircraft in their operational roles as they came off the assembly lines. In 1948, the PGC became the Air Proving Ground Command (APGC), one of the major commands of the fledgling United States Air Force.

APGC conducted realistic testing of new weapons as an independent organization, reporting directly to the Chief of Staff of the Air Force and advocating a “fly-before-buy” approach to acquiring new systems. Such a shift, however, remained a challenge, for the Air Force continued the “buy-fly-fix” process

that had grown from the demands of World War II and undervalued the importance of timely independent operational test and evaluation.

APGC attempted to simulate combat conditions during its tests. It also grew in size as it acquired the systems it tested. By 1956, Air Force regulations outlined an eight-phase test and evaluation process that did not include the APGC until phase seven. By that point in the acquisition cycle, the Air Force had often already fielded units with new systems that APGC had not yet tested. Not surprisingly, operators often experienced serious problems with these new, untested systems. This led to a misperception about the value of operational test and evaluation (OT&E) and APGC. Had OT&E taken place before production decisions and fielding new systems, there likely would not have been any question about the added value of independent OT&E.

As a result of the doubts about the value of APGC and cuts to the defense budget, in 1957 the Air Force stripped APGC of its major command status, reduced its budget and authorized personnel, and redesignated the Command the Air Proving Ground Center, and assigned it to the Air Research and Development Command. This action meant the Air Force no longer had an independent organization that specialized in impartial operational test and evaluation.

Decentralized operational testing at the major commands occurred from 1958 to 1973. Major command emphasis was often on quick deployment rather than thorough testing and impartial evaluations. Although the Air Force streamlined OT&E from eight to three phases during this period, OT&E still came at the end of the acquisition process. In addition, as systems became more complex, and the Air Force moved to acquire systems quickly, the “fly-before-buy” approach fell by the wayside. The consequences became clear when a Department of Defense study found that 21 of 22 major weapons systems used in the Vietnam War from 1965-1970 suffered severe operational deficiencies. These results strongly stated the case for independent OT&E in the Air Force.

AIR FORCE TEST AND EVALUATION CENTER ESTABLISHED

In addition to the study of fielded weapons used in Vietnam, a new Department of Defense leadership team began major reforms when the new Richard M. Nixon administration began in 1969. Deputy Secretary of Defense David Packard, the esteemed entrepreneur who favored the “fly-before-buy” approach, and Undersecretary of the Air Force John L. McClucas, who dealt with operational problems with the F-111 and C-5 transport, took the lead in defining early OT&E.

Several government committees, commissions, and agencies studied how to implement acquisition reform, including the benefits of independent operational test and evaluation. Participants in all of these studies, along with an increasing number of Senators and Congressmen, concluded that the developing and using commands had become less impartial about the capabilities of, and need for, their major acquisition programs.



In July 1970, a Presidential Blue Ribbon Defense Panel recommended the creation of an OT&E organization in each service, independent from the developer and user, and reporting directly to the chief of each service. Deputy Secretary Packard quickly started to implement the Panel’s recommendations. By November 1971, Congress showed its support for OT&E by requiring that the services submit OT&E results before procuring new systems.

Congress expected the independent operational test agency in each service to test and evaluate a system relative to two questions: Is the system operationally effective? and Is the system suitable?. Operational effectiveness addressed how well a system performed the mission for which it was designed. Operational suitability, on the other hand, examined if a system could be maintained, kept available, and was reliable in the operational environment.

Some members of the Air Staff, unfavorably recalling the contributions of the Air Proving Ground Command, attempted to find alternatives to creating a new, independent OT&E organization. They contended that internal changes were the first step. Air Force leadership also adopted a new dichotomy in which developing commands would typically conduct developmental test and evaluation while the using commands would usually conduct operational test and evaluation. Senior Air Force leadership believed these changes could bring to the Air Force the balance and independence Congress and the Department of Defense favored for each service.

In 1973, John L. McClucas became Secretary of the Air Force, and General George S. Brown became the new Chief of Staff of the Air Force. In September 1973, General Brown ordered the Air Staff to plan for a new independent OT&E agency. On December 11, 1973, a directive from Headquarters Air Force established the Air Force Test and Evaluation Center at Kirtland Air Force Base, New Mexico, effective 1 January 1974.

AFTEC’S EARLY YEARS

AFTEC’s charter largely addressed the criticisms of OT&E and the Blue Ribbon Panel’s recommendations. For example, as a Separate Operating Agency, the Center reported directly to the Chief of Staff of the Air Force as a means of ensuring independence from the developing and using commands. AFTEC test teams would consist of specialists who would operate and maintain the systems after deployment. The Center would provide the results of its evaluations to the Secretary of the Air Force and the Chief of Staff in support of key decision points in the acquisition process. And, AFTEC would conduct impartial tests under conditions as close to those encountered in the field.

At the same time, the Air Force also took steps to avoid creating another APGC. AFTEC would be a small management headquarters with approximately 200 personnel, and AFTEC would never own any of the systems it tested. The charter and subsequent events showed the Air Force’s reluctance to turn all OT&E over to the new Center. Although AFTEC declared full operational capability in October 1974, by the end of its first year,

the Center had responsibility to test only 32 OT&E programs, while the major commands continued to conduct OT&E on their programs of interest. AFTEC was limited to monitoring OT&E of smaller acquisition programs at the major commands. Another obstacle arose because AFTEC was such a small organization that it had to rely heavily on the major commands to provide personnel for test teams and funds for OT&E.

In October 1976, Major General Howard W. Leaf assumed command of AFTEC, and gradually implemented changes that enhanced AFTEC's role in OT&E conducted at the major commands. Major General Leaf, promoted to Lieutenant General and reassigned as inspector general of the Air Force, departed AFTEC in May 1980. By that time, he had helped find solutions to AFTEC's budgeting process, forged closer relationships with the major commands, and had established three levels of AFTEC effort for monitoring major command OT&E programs. Like his predecessors and successors as AFTEC commander, Major General Leaf sought to involve OT&E testers as early as possible in programs identified for OT&E to help ensure system readiness for test and that tests reflected the needs of users of the new systems. Early OT&E also played a role in ensuring the "fix-before-buy" approach had a chance to save resources by finding problems before production, thereby avoiding costly modifications to fielded systems. As a whole, Major General Leaf's time as AFTEC commander stabilized the new organization and made it a more active participant in Air Force OT&E.



FROM AFTEC TO AIR FORCE OPERATIONAL TEST AND EVALUATION CENTER

AFTEC's increasing contributions to Air Force OT&E led the Center to create detachments and operating locations dedicated to conducting AFTEC's OT&E mission. While AFTEC headquarters remained at Kirtland AFB, detachments activated at numerous locations, including Kapaun, Germany, Eglin AFB, Florida, Edwards AFB, California, and Nellis AFB, Nevada. Detachments tended to support relatively broad categories of test—fighter aircraft, large aircraft, and munitions, for example. Operating locations, smaller than the detachments and located throughout the United States, tended to focus on individual systems.



In 1983, the Air Force added "Operational" to the Center's name to more accurately describe its unique mission of evaluating the operational effectiveness and operational suitability of new systems.

Congress, with an increased interest in understanding the operational effectiveness and operational suitability of major Department of Defense acquisition programs, directed the creation of a new position, Director, Operational Test and Evaluation, in the Office of the Secretary of Defense in September 1983. Congress required that the Director, Directorate of Operational Test

and Evaluation (DOT&E) would report directly, without intervening review or approval, to the Secretary of Defense and to Congress. One of the requirements Congress levied on DOT&E was to create, maintain, and update a list of major Department of Defense acquisition programs, and to prepare an annual report to Congress, informing that body about the progress of programs with high interest and visibility in Congress.

END OF THE COLD WAR BRINGS MORE CHANGE

Unrest in Europe in 1989 brought the fall of the Berlin Wall in November of that year, and ultimately the demise of the Soviet Union and the end of the Cold War. The United States began to dramatically reduce the size of its armed services shortly thereafter. Chief of Staff of the Air Force General Merrill A. McPeak announced the consolidation of several Air Force major commands and personnel reductions as part of the overall Department of Defense reductions.

As part of these reductions and reorganization, the Air Force changed its Direct Reporting Units (DRUs) and Separate Operating Agencies (SOAs) to field operating agencies and assigned them to appropriate functional chiefs at Headquarters U.S. Air Force. Because of AFOTEC's charter as an independent test agency that reported directly to the Chief of Staff of the Air Force, the Center became one of only three Direct Reporting Units in the Air Force on 5 February 1991.

Several proposals to consolidate Air Force OT&E at AFOTEC also circulated during broad area reviews associated with reorganizing the Air Force. The U.S. Air Force Scientific Advisory Board, for example, addressed the feasibility of expanding AFOTEC's role and scope of responsibility for the entire test and evaluation process, from the initial statement of need to the last major upgrade of a system. A Department of Defense Inspector General report used a different perspective and criticized the Air Force for not having a single operational test agency.

In September 1991, Secretary of the Air Force Dr. Donald B. Rice and General McPeak created a new office in the Air Staff, the Director of Test and Evaluation. Retired Lieutenant General Howard W. Leaf became the first Director of Test and Evaluation in October 1991, and two months later, proposed consolidating OT&E at AFOTEC. As part of the Air Force reorganization and drawdown, General McPeak directed that the Center not only continue its lead role in multi-service OT&E, but also the consolidation of all initial and qualification OT&E and select follow-on OT&E at AFOTEC by 1 June 1992. By design, this meant General McPeak limited the type and scope of testing the major commands could perform in the future. Overnight, the number of AFOTEC-conducted tests rose first from 47 to 186, and ultimately to more than 200. General McPeak also announced that AFOTEC would receive additional personnel to ensure it could meet its newly expanded mission.



The Center's mission grew again on 1 October 1997 when AFOTEC absorbed the personnel and workload of the Defense Evaluation Support Activity (DESA). DESA, which had experience with rapid test, was heavily involved in testing advanced concept technology demonstrations, which sought out innovative applications for emerging technologies to create prototype systems for examination by operational units.

TODAY'S AFOTEC

For more than forty years AFOTEC has tested and evaluated new systems and new capabilities in operationally realistic environments. AFOTEC's five detachments and twelve operating locations across the country execute these tests to gather the data needed to produce independent, fact-based test reports about system effectiveness, suitability, and mission capability. These reports inform decision makers as they allocate our nation's resources and the nation's warfighters who use the systems. AFOTEC has significantly contributed to ensuring quality systems are fielded to support all branches of the armed forces, other government agencies, and our nation's allies.



COMMANDERS

AIR FORCE OPERATIONAL TEST & EVALUATION CENTER



MAJOR GENERAL (LATER LT. GEN.) JOHN J. BURNS

25 February 1974 – 25 August 1974

Major General John Burns was the first Commander of the Air Force Test and Evaluation Center (AFTEC). General Burns was a veteran fighter pilot of three wars: World War II, Korea, and Vietnam. General Burns' service at AFTEC was cut short when he was awarded a third star and given command of the U.S. Support Activities Group and 7th Air Force in Southeast Asia where he directed military operations to evacuate Phnom Penh, Cambodia, and Saigon, Vietnam. He also supervised the recovery of the crew of the *S.S. Mayaguez*. He retired from the Air Force on 1 March 1979.



MAJOR GENERAL RICHARD G. CROSS, JR.

26 August 1974 – 31 August 1975

Major General Richard Cross enlisted as a soldier in June 1941, and joined the U.S. Army Air Forces as an aviation cadet in November 1942. He earned his wings in October 1943. A few months later, General Cross flew combat missions during the Normandy invasion in June 1944. During one World War II mission, he shot down two enemy aircraft in one day, earning the Silver Star. He flew with a P-51 aircraft aerobatic team for six months during 1945-1946. An advisor to the Belgian Air Force, he was later chief, air operations, Military Assistance Command, Vietnam. General Cross flew 67 combat missions in F-4 Phantoms during the Vietnam War. He amassed more than 6,000 flying hours during his career before he retired from the Air Force in September 1975.

Colonel Stephen E. Moore (Interim), 1 September 1975 – 9 November 1975



MAJOR GENERAL ROBERT A. RUSHWORTH

10 November 1975 – 30 September 1976

Major General Robert Rushworth began his career flying C-47 transports over "the Hump" in the China-Burma-India theater during World War II. He accumulated over 6,500 flying hours, including combat missions in Vietnam, in over 50 different aircraft. General Rushworth had a background in test and evaluation and flew more flights in the X-15 test program than any other pilot, becoming the second X-15 pilot to attain an Astronaut rating. Following his service at AFTEC, General Rushworth became the Vice Commander, Aeronautical System Division, Air Force Systems Command. He retired in June 1981.

COMMANDERS

AIR FORCE OPERATIONAL TEST & EVALUATION CENTER



MAJOR GENERAL (LATER LT. GEN.) HOWARD W. LEAF

1 October 1976 – 31 May 1980

Major General Howard Leaf was the first AFTEC Commander to serve an extended assignment with the Center. Flying combat missions in Korea and Vietnam, General Leaf amassed over 5,600 flying hours in his career, including a total of 321 combat missions in Korea and Vietnam. He brought a scientific background into test and evaluation after working in the Air Force Office of Scientific Research. General Leaf was the 1978 recipient of the prestigious Zuckert Management Award. He was promoted to Lt General and later served as the Air Force Inspector General, Assistant Vice Chief of Staff, Headquarters U.S. Air Force, and U.S. Senior Air Force Representative to the United Nations. General Leaf retired in October 1984. He then worked in industry and was a member of the Air Force Scientific Advisory Board. In 1991 he became the first Director of Test and Evaluation, Headquarters US Air Force.



MAJOR GENERAL WAYNE E. WHITLATCH

1 June 1980 – 27 May 1982

Vietnam combat experience, time as a commander, and varied staff assignments prepared Major General Wayne Whitlatch for his duties as AFTEC Commander. He enlisted in the Air Force, but quickly became an Aviation Cadet who earned his pilot wings and a commission. He served as a fighter pilot in England and Germany early in his career. He later flew A-1E Skyraiders with the 1st Air Commando Squadron at Pleiku Air Base, Republic of Vietnam. He served as the Principal Assistant Director, Test and Evaluation, Office of the Secretary of Defense before coming to AFTEC. A command pilot, he retired from the Air Force after his assignment as AFTEC commander.



MAJOR GENERAL RICHARD W. PHILLIPS, JR.

28 May 1982 – 29 August 1985

A U.S. Air Force Test Pilot School graduate, Major General Richard Phillips had also served as a naval exchange officer who became aircraft carrier qualified in the F-4 and F-8. He also served as chief of the Operational Test and Evaluation Division, Office of the Deputy Director for Operational Test and Evaluation, Directorate of Operations, Headquarters U.S. Air Force. His more than 5,000 flying hours included over 200 combat missions in Vietnam. After completing his tour at AFOTEC, General Phillips commanded the Sheppard Technical Training Center, Sheppard AFB, Texas until his retirement in April 1987.

COMMANDERS

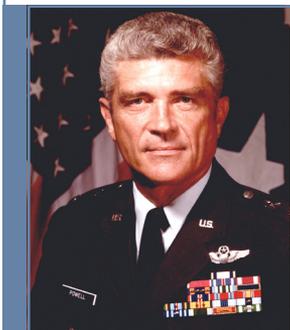
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MAJOR GENERAL MICHAEL D. HALL

30 August 1985 – 29 June 1987

Major General Michael Hall, a graduate of the U.S. Air Force Test Pilot School, gained combat experience in Vietnam as commander for the F-4 “fast-FAC” program. Gen Hall was Deputy Director, Operational Test and Evaluation, Office of the Secretary of Defense prior to taking command of AFOTEC. After commanding AFOTEC for two years, General Hall became the Director of Strategic, Special Operations Forces and Airlift Programs, Office of Assistant Secretary of the Air Force for Acquisition. During his career, General Hall logged 6,500 flying hours in more than 50 different types of aircraft, with 170 combat missions in Vietnam. He retired in September 1989.



MAJOR GENERAL CECIL W. POWELL

30 June 1987 – 18 January 1990

Major General Cecil Powell, a U.S. Naval Academy graduate, experienced test and evaluation early in his career as a test planner for a joint test and evaluation of new technology for air-to-air missiles. A USAF Test Pilot School graduate, he commanded a test and evaluation squadron. He was Deputy Commander for Research, Development and Acquisition, Armament Division, Eglin Air Force Base, Florida, before coming to AFOTEC. General Powell flew 104 combat missions in Vietnam and logged more than 4,000 hours during his career before he retired in February 1990. He retired following his tenure as AFOTEC commander.



MAJOR GENERAL PETER D. ROBINSON

19 January 1990 – 18 July 1991

Major General Peter Robinson was a veteran fighter pilot with nearly 3,400 flying hours and 435 combat missions during two tours in Vietnam. An Olmstead scholar in mathematics at the University of Freiburg, West Germany from 1968 – 1970, General Robinson graduated from the British Senior War College, Royal College of Defence Studies, London, in 1981. Before commanding the Center, General Robinson served on the Headquarters Air Force staff in the Office of the Deputy Chief of Staff for Personnel. Following his service as AFOTEC Commander, General Robinson went on to serve as Commandant of the Air War College and Vice Commander of Air University. He retired from the Air Force in July 1995.

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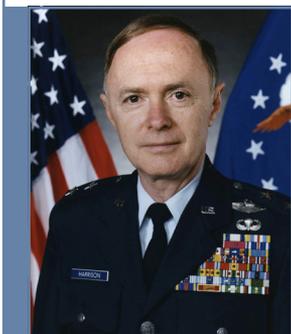


MAJOR GENERAL (LATER LT. GEN.) MARCUS A. ANDERSON

19 July 1991 – 22 November 1993

Major General Marcus Anderson was a student officer and flight training instructor before joining the 510th Tactical Fighter Squadron at Bien Hoa Air Base, South Vietnam, in April 1966. He later was an aircraft commander with the 433rd and the 435th Tactical Fighter Squadrons at Ubon Airfield, Thailand. While in Southeast Asia, he flew 240 combat missions. General Anderson commanded AFOTEC during the most significant Air Force reorganization since 1947, which expanded the Center's test programs from 41 to over 200. When he received a third star, he left AFOTEC to become Inspector General, United States Air Force. General Anderson retired in April 1996 as a command pilot with more than 4,400 flight hours in F-100, F-4, F-15, and A-10 aircraft.

Colonel John A. Judd (Interim), 23 November 1993 – 12 December 1993



MAJOR GENERAL GEORGE B. HARRISON

13 December 1993 – 22 June 1997

Major General George Harrison gained experience with operational test early in his career as commander of a test squadron, a training wing, and the U.S. Air Force Air Warfare Center, Eglin Air Force Base, Florida. He was also Chief, Operational Test and Evaluation division, Headquarters United States Air Force. As AFOTEC commander, General Harrison guided AFOTEC through expansions of its test mission and assigned personnel. When he retired from the Air Force following his time as AFOTEC Commander, General Harrison had logged nearly 5,000 flying hours in several aircraft, including the O-1F, F-4, and F-16. General Harrison flew over 500 hours in combat missions in Southeast and Southwest Asia.

Colonel Roger C. Locher (Interim), 11 December 1996 – 18 December 1996



MAJOR GENERAL JEFFREY G. CLIVER

23 June 1997 – 2 March 2000

Assigned to Korat Royal Thai Air Force Base during the Vietnam War, Major General Jeffrey Cliver later commanded the "Tiger" fast forward air controllers at Korat. He later became an instructor in the USAF Fighter Weapons School. He also tested the AIM-7F Sparrow and AIM-9L Sidewinder missiles as part of the 422nd Fighter Weapons Squadron from August 1976 to September 1978. General Cliver served as Assistant Secretary of Defense for Reserve Affairs in the Office of the Secretary of Defense before assuming command of AFOTEC. He logged more than 4,000 flight hours, 530 of which were combat hours, in fixed-wing and rotary wing aircraft including the F-105, F-4, F-15, and F-16. General Cliver retired from the Air Force after commanding AFOTEC.

COMMANDERS

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MAJOR GENERAL WILLIAM A. PECK, JR.

3 March 2000 – 25 February 2003

Major General William Peck led AFOTEC at the turn of the 21st century. He served at Headquarters 5th Allied Tactical Air Force in Vicenza, Italy, as the Director of Plans for Operation DENY FLIGHT, directing NATO operations over Bosnia. During Operation DESERT STORM, General Peck served as deployed Commander of the 20th Fighter Wing at Incirlik AB, Turkey. He also served as Director of Requirements for Air Combat Command, and as Vice Commander of 7th Air Force, and Chief of Staff for Air Component Command, Osan Air Base, South Korea. He was a command pilot with more than 4,000 hours in the F-16C, EF-111, F-4E, B-1, KC-135, and UH-1, including combat time in the F-111E and the F-15E. He retired from the Air Force after his time as the Center's commander.



MAJOR GENERAL FELIX DUPRÉ

26 February 2003 – 28 April 2005

Major General Felix Dupré was involved with OT&E early in his career as test manager for the Global Positioning System, the Advanced Medium Range Air-to-Air Missile Field Test, the Advanced Tactical Fighter, and the Cruise Missile Defense programs. He also commanded an operations support, squadron, a fighter squadron, a fighter operations group and two fighter wings. He was U.S. Defense Attaché to France, U.S. European Command, Paris, France prior to his assignment to command the Center. General Dupré had more than 4,300 hours of flight time in the F-15 and T-38 when he retired after his tenure as AFOTEC commander.

Colonel Alison R. Hill (Interim), 29 April 2005 – 14 June 2005



MAJOR GENERAL ROBIN E. SCOTT

15 June 2005 – 31 May 2007

Major General Robin Scott was a squadron commander, a wing commander, and held several staff positions that prepared him to lead AFOTEC. He commanded Combined Task Force Operation Northern Watch, U.S. European Command, Incirlik, Turkey. In his assignment prior to assuming command at AFOTEC, he served on the Joint Staff as Deputy Director for Force Application in the Directorate of Force Structure, Resources and Assessment. General Scott flew 70 combat sorties in Operations DESERT STORM and NORTHERN WATCH, and amassed more than 4,200 flight hours in the F-4, A-7, F-117, F-15C, F-15E, T-1 and T-6 aircraft. He retired after his tour at AFOTEC.

Colonel Alison R. Hill (Interim), 1 June 2007 – 11 July 2007

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MAJOR GENERAL STEPHEN T. SARGEANT

12 July 2007 – 21 October 2010

Major General Stephen Sargeant, an Air Force Academy graduate, was pilot and instructor for the A-10 and F-16, commanded the 8th Fighter Wing at Kunsan AB, South Korea and the 56th Fighter Wing at Luke AFB, Arizona, served as Commandant of the USAF Weapons School, and Deputy Chief of Staff, Strategy, Plans and Assessment, Multi-National Force-Iraq, Baghdad. Before taking command of AFOTEC, General Sargeant served as the Deputy Chief of Staff for the United Nations Command and U.S. Forces Korea at Yongsan Army Garrison, South Korea. He received the 2009 Gen Thomas D. White USAF Space Trophy for his aerospace contributions. A Command Pilot, General Sargeant had more than 3,100 hours in several aircraft, including the A-10/A and the F-16A/B/C/D.



MAJOR GENERAL DAVID J. EICHORN

22 October 2010 – 12 September 2012

A U.S. Air Force Test Pilot School graduate, Major General David Eichhorn served in test and evaluation for most of his career. His time as AFOTEC Commander followed assignments as commander of two flight test squadrons, a test group, a test wing, the Arnold Engineering Development Center and the Air Force Flight Test Center. A certified acquisition professional, he served as Vice Commander of the Electronic Systems Center. General Eichhorn was Director of the Aeronautical Enterprise Program Office and Deputy Program Executive Officer for Aircraft at the Aeronautical Systems Center. He logged over 6,100 hours in more than 47 aircraft types, including the F-15C/E, B-52D/H, and B-1B. General Eichhorn retired from the Air Force after his time as AFOTEC Commander.



MAJOR GENERAL SCOTT D. WEST

13 September 2012 - 30 March 2015

General Scott West entered the Air Force in 1982 after graduating from The Citadel. He held a variety of positions in operations, staff and support duties, to include command experience at the squadron, group, wing and numbered air force levels. Early assignments included U.S. Air Force Weapons School instructor pilot. General West served on the Joint Staff and Air Force Secretariat. He was a command pilot with more than 2,500 flying hours, including combat in Operation Southern Watch. General West left AFOTEC in March 2015 to become Commander, 9th Air and Space Expeditionary Task Force-Afghanistan; Deputy Commander-Air, United States Forces-Afghanistan; and Deputy Chief of Staff-Air, International Security Assistance Force Joint Command, Air Combat Command, Southeast Asia.

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MAJOR GENERAL MATTHEW H. MOLLOY

18 June 2015 – 18 May 2018

General Matthew Molloy received his commission in 1987 through the Reserve Officer Training Corps program at the University of Colorado, Boulder. He earned a Bachelor of Science degree in aerospace engineering as he began his Air Force career. He holds four Masters degrees, including a Master of Science in national security strategy from the National War College, Fort Lesley J. McNair, Washington, D.C., where he was a Distinguished Graduate. He commanded at the flight, squadron, group, and wing levels. He completed Euro-NATO Joint Jet Pilot Training in 1989. He was a command pilot with over 3,200 flying hours in the F-15 and F-22 fighters. He retired from the Air Force after his time as AFOTEC Commander.

Colonel Dean A. Ward (Interim), 31 March 2015 - 17 June 2015



MAJOR GENERAL MICHAEL T. BREWER

18 May 2018 – 6 April 2020

General Michael Brewer commissioned in 1986 after receiving a Bachelor of Science degree in Electrical Engineering. He flew the F-111F and F-15E before graduating as a test pilot from the U.S. Air Force Test Pilot School in June 1996. He held positions as a developmental test pilot, an F/A-22 program manager at the System Program Office, at Air Force Materiel Command as Director of Strategic Plans, Programs, Requirements and Analyses, and commanded at the squadron, wing, and center levels. General Brewer is a command pilot with more than 3,200 hours flying the F-111, F-15E and F-16 and has combat experience in both the F-111 and F-15E. General Brewer retired from the Air Force following his time as Commander, Air Force Operational Test and Evaluation Center.



MAJOR GENERAL JAMES R. SEARS, JR.

6 April 2020 - present

Major General James R. Sears, Jr., is the Commander, Air Force Operational Test and Evaluation Center, Kirtland Air Force Base, New Mexico. Major General Sears reports directly to the Air Force Chief of Staff regarding the operational test and evaluation of more than 90 major program of records, 59 of them under oversight by the Director, Operational Test and Evaluation. These represent an acquisition portfolio of \$1.32 billion, as well as \$1.9 million in operational test costs. He directs the activities of more than 650 military, civilian, and contractor personnel who plan, conduct, and report on operational test events at 19 locations across the continental United States.

A graduate of the United States Air Force Academy, General Sears entered the Air Force in 1991. As a command pilot with more than 3600 hours in the C-130E, T-3A, F-16, and T-38C, General Sears' flight experience includes C-130 low-level special operations, every conventional mission type in the F-16, three assignments as an instructor pilot, and contingency and combat sorties over Bosnia, Yemen, Iraq, and Afghanistan. He has commanded the 61st Fighter Squadron, 20th Operations Group, 14th Flying Training Wing, and 455th Air Expeditionary Wing, and has held a variety of staff positions. Immediately prior to his current assignment as the Commander, Air Force Operational Test and Evaluation Center, General Sears held the position of Director of Plans, Programs and Requirements, Headquarters Air Education and Training Command, Joint Base San Antonio Randolph, Texas.

COMMON TEST AND EVALUATION TERMS AND DEFINITIONS

The terms below provide definitions and explain the different forms of testing performed within the Department of Defense.

- ▶ **Test and Evaluation (T&E)** – The term “test” denotes any project or program designed to obtain, verify, and provide data to evaluate, research, and develop; progress in accomplishing development objectives; performance and operational capability of systems, subsystems, and components; and equipment items. The term “evaluation” denotes the review and analysis of data produced during current or previous testing and data obtained from test conducted by other government agencies and contractors, from operation and commercial experience, or combinations thereof.
- ▶ **Developmental Test and Evaluation (DT&E)** – Conducted to evaluate design approaches, validate analytical models, quantify contract technical performance and manufacturing quality measure progress in system engineering design and development, minimize design risks, predict integrated system operational performance (effectiveness and suitability) in the intended environment, and identify system problems (or deficiencies) to allow for early and timely resolution or correction. Decision-makers use DT&E results to minimize design risk, whereas OT&E evaluates military utility, and system effectiveness and suitability. DT&E includes contractor testing.
- ▶ **Integrated Developmental Test/Operational Test (Integrated DT/OT)** – An efficient approach to T&E, executed with the deliberate intent and planning to use specific test events and activities for both developmental test and operational test analysis and reporting, when there are clear cost and/or schedule advantages. The high cost or lack of sufficient test articles may provide an overall benefit for DT&E and OT&E teams to share test resources and data. IDT/OT usually ends with a phase of dedicated OT&E. AFOTEC always considers doing IDT/OT for all programs. The restriction for contractor involvement in USC, Title 10 applies only to dedicated OT&E.
- ▶ **Operational Test and Evaluation (OT&E)** – The field test, under realistic combat conditions, of any item of (or key component of) weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment or munitions for use in combat by typical military users, and the evaluation of the results of such test.
- ▶ **Early Operational Assessment (EOA)** – Conducted to provide insight into progress being made toward operational effectiveness, suitability, and mission capability. The OT&E construct forms the basis for the early operational assessment. The construct used for the EOA may not be the final construct, but it should give insight into the elements that make up effectiveness and suitability for the system under test. EOAs also look into the program’s future based on current information and observations to assess readiness for OT&E.
- ▶ **Operational Assessment (OA)** – Analysis of progress toward operational effectiveness and suitability made by an independent operational test activity, with user support as required, on other than production systems. Additionally, AFOTEC assesses progress toward overall mission capability. The focus of an operational assessment is on significant trends noted in development efforts, programmatic voids, areas of risk, adequacy of requirements, and the ability of the program to support adequate operational testing. Operational assessments may be made at any time using technology demonstrators, prototypes, mockups, engineering development models, or simulations, but will not substitute for the independent OT&E necessary to support full production decisions. An OA conducted before milestone B is referred to as an EOA.
- ▶ **Operational Utility Assessment (OUA)** – are used to determine operational utility in support of assessments conducted on innovation programs. An OUA is planned, conducted, and reported by adapting the OT&E construct to the technology being assessed.
- ▶ **Operational Utility Evaluation (OUE)** – Are evaluations conducted to demonstrate or validate new operational concepts or capabilities, upgrade components, or expand the mission or capabilities of existing or modified systems. OUEs are not used when IOT&E or QOT&E are required or are more suitable.
- ▶ **Initial Operational Test and Evaluation (IOT&E)** – An independent and dedicated operational T&E conducted in as realistic an operational environment as possible to estimate the prospective system’s overall operational capability determined by effectiveness, suitability, and other operational considerations. In addition, OT&E provides information on organization, personnel requirements, doctrine, and tactics. It may also provide data to support or verify material in operating instructions, publications, and handbooks.

- ▶ **Multiservice Operational Test and Evaluation (MOT&E)** – OT&E conducted by two or more services on systems to be acquired by more than one service or to be interoperable between services.
- ▶ **Follow-on Operational Test & Evaluation (FOT&E)** – Continuation of IOT&E or QOT&E. FOT&E answers specific questions about test issues, verifies the resolution of deficiencies determined to have substantial or severe impact on mission operations, or completes areas not finished during the I/QOT&E. Requirements for FOT&E are documented in an approved AFOTEC OT&E report prior to the planning of the FOT&E.
- ▶ **Qualification Operational Test and Evaluation (QOT&E)** – The operational testing performed on programs instead of IOT&E for which there is no RDT&E-funded development effort.
- ▶ **Effectiveness** – Measure of the overall ability to accomplish a mission when used by representative personnel in the environment planned or expected for operational employment of the system considering organization, doctrine, supportability, survivability, vulnerability and threat.
- ▶ **Suitability** – The degree to which a system can be placed and sustained satisfactorily in field use with consideration given to availability, compatibility, transportability, interoperability, reliability, wartime usage rates, maintainability, environmental, safety and occupational health risks, human factors, habitability, manpower, logistics, supportability, logistics supportability, natural environmental effects and impacts, documentation and training requirements.
- ▶ **Mission Capability** – Determination of the system’s overall capability to execute or support a tasked mission with consideration given to: operational costs in the form of manpower, time, ease of use, supplies, workarounds and risks; limitations associated with aspects or portions of the mission; and mission accomplishment across a variety of operational conditions.

AIR FORCE ORGANIZATIONAL EXCELLENCE AWARD



The Air Force Organizational Excellence Award recognizes the achievements and accomplishments of U.S. Air Force organizations or activities. It is awarded to Air Force internal organizations that are entities within larger organizations. They are unique, unnumbered organizations or activities that perform functions normally performed by numbered wings, groups, squadrons, etc. Then Secretary of the Air Force, Robert C. Seamans, Jr., authorized this award on August 26, 1969.

This award is a ribbon with a narrow blue center stripe, flanked by a thin white stripe, a wide red stripe, a thin white stripe, edged with a narrow blue stripe. A bronze “V” device is worn on the ribbon to denote award for combat or direct combat support actions.

The Air Force Operational Test and Evaluation Center has received this award thirteen times since 1983.

AFOTEC AIR FORCE ORGANIZATIONAL EXCELLENCE AWARDS

Special Order GB-481	1 January 1983 – 31 December 1984
Special Order GB-539	1 April 1985 – 31 March 1987
Special Order GB-173	1 October 1987 – 30 September 1989
Special Order GB-114	1 October 1991 – 31 October 1993
Special Order GB-121	1 November 1993 – 15 November 1995
Special Order GB-130	1 January 1998 – 31 December 1999
Special Order G-221	1 January 2000 – 31 December 2001
Special Order G-284	1 January 2002 – 31 December 2003
Special Order G-188	1 January 2005 – 31 December 2006
Special Order G-078	1 January 2007 – 31 December 2008
Special Order G-062	1 January 2009 – 31 December 2010
Special Order G-035	1 January 2012 - 31 December 2013
Special Order G-124	1 January 2016 - 31 December 2017



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