



**A BRIEF HISTORY AND HERITAGE OF**

**AFOTEC**

**THE AIR FORCE OPERATIONAL TEST & EVALUATION CENTER**

DISTRIBUTION A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

# 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 Air Force Base, 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 operational roles as they came off the assembly lines. In 1948, it became the Air Proving Ground Command (APGC), one of the major commands of the fledgling U. S. Air Force.

APGC conducted realistic testing of new weapons as an independent organization, reporting directly to the Chief of Staff of the Air Force, advocating a “fly-before-buy” approach to new systems. This shift, however, remained a challenge, for the Air Force continued a “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 (OT&E).

APGC attempted to simulate combat conditions during its tests, and grew as it acquired systems to test. 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 new systems that APGC had not yet tested. Not surprisingly, operators often experienced serious problems with these untested systems. This led to a misperception about the value of OT&E and of APGC. If OT&E took place before fielding of new systems, few would question its value.

As a result of doubts about the value of APGC and defense budget cuts, in 1957 the Air Force stripped APGC of its major command status, reduced its budget and personnel, and redesignated it the Air Proving Ground Center, and assigned it to the Air Research and Development Command. This left the Air Force no independent organization conducting impartial OT&E.

Major commands conducted OT&E from 1958 to 1973, often emphasizing quick deployment over thorough test and impartial evaluation. Although the Air Force streamlined OT&E from eight to three phases during this period, OT&E still fell at the end of the acquisition process. In addition, as systems became more complex, and the Air Force moved to acquire them quickly, “fly-before-buy” fell by the wayside. When a Department of Defense study found that 21 of 22 major weapons systems used in Vietnam between 1965 and 1970 suffered severe operational deficiencies, the costs of these decisions became clear, as did the case for independent Air Force OT&E.

## AIR FORCE TEST AND EVALUATION CENTER ESTABLISHED

In addition, a new Department of Defense leadership team began major reforms when the Nixon administration began in 1969. Deputy Secretary of Defense David Packard, the esteemed entrepreneur who favored “fly-before-buy” and Undersecretary of the Air Force John L. McLucas, who dealt with operational problems with the F-111 and C-5 transport, took the lead in defining a new emphasis on OT&E.

Several government committees, commissions, and agencies studied how to implement acquisition reform, including the benefits of independent OT&E. These studies led an increasing number of Senators and Congressmen to conclude that 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 creation of an OT&E organization in each service, independent of both developer and user, reporting directly to the chief of each service. Deputy Secretary Packard quickly began implementing these recommendations. By November 1971, Congress required the services to submit OT&E results before procuring new systems.

Congress expected independent operational test agencies in each service to test and evaluate systems relative to two questions: Is it operationally effective? and Is it operationally suitable?. Operational effectiveness addresses how well a system performed its mission. Operational suitability examined system maintainability, availability, and reliability in the operational environment.

Some in the Air Staff questioned the need for a new, independent OT&E organization, arguing instead for internal changes to the existing system of OT&E. Air Force leadership also adopted a new dichotomy: developing commands conducted developmental test and evaluation, while using commands conducted OT&E. Senior Air Force leaders believed this would create the balance and independence in each service favored by Congress and the Department of Defense.

In 1973, John L. McLucas 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 Panel's recommendations. For example, as a Separate Operating Agency, the Center reported directly to the Chief of Staff of the Air Force, ensuring independence from developing and using commands. AFTEC teams would operate and maintain systems after deployment, conduct impartial tests under conditions close to those in the field. The Center's evaluations, provided to the Secretary of the Air Force and the Chief of Staff, would then support key decision points in acquisition.

The Air Force also took steps to avoid creating another APGC, making AFTEC a small management headquarters of approximately 200 that would never own the systems it tested. Its charter as well as subsequent events showed the Air Force's reluctance to turn over all OT&E to AFTEC. AFTEC declared full operational capability in October 1974, but by the end of 1975 had tested only 32 OT&E programs. Major commands continued OT&E on programs of interest, as AFTEC only monitored OT&E of smaller acquisition programs, while relying on major commands for test team personnel and OT&E funding.



In October 1976, Major General Howard W. Leaf assumed command of AFTEC, gradually implementing changes to enhance AFTEC's role in OT&E by the major commands. Major General Leaf, promoted to Lieutenant General, became inspector general of the Air Force, departing AFTEC in May 1980. By then, he had helped reform AFTEC's budgeting process, forged closer relationships with major commands, and established monitoring of major command OT&E programs. Major General Leaf sought to involve OT&E testers as early as possible in OT&E programs to ensure system readiness for test, while reflecting the needs of users. Early OT&E helped ensure the "fix-before-buy" approach had a chance to save resources, finding problems before production, and avoiding costly modifications to fielded systems. Major General Leaf's time as AFTEC commander stabilized the new organization, making 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 to the creation of detachments and operating locations to conduct OT&E. While its headquarters remained at Kirtland AFB, AFTEC activated detachments at numerous locations, including Kapaun, Germany, Eglin AFB, Florida, Edwards AFB, California, and Nellis AFB, Nevada. Detachments supported relatively broad categories of test—fighter aircraft, large aircraft, or munitions. Operating locations, reporting to detachments or AFTEC, often tested individual systems.

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



Congress, to aid in its understanding of operational effectiveness and suitability of major Department of Defense acquisition programs, directed creation of a new position, Director, Operational Test and Evaluation, in the Office of the Secretary of Defense in September 1983. Congress required the Director, Directorate of Operational Test and Evaluation (DOT&E) to report directly, to it and the Secretary of Defense. One requirement levied on DOT&E by Congress included maintaining a list of major Department of Defense acquisition programs. DOT&E also prepared an annual report to Congress on the progress of high-interest, high-visibility programs.

## END OF THE COLD WAR BRINGS MORE CHANGE

The late 1980s and early 1990s saw the fall of the Berlin Wall, the breakup of the Soviet Union, and the end of the Cold War. As the United States began dramatically reducing the size of its armed services, Chief of Staff of the Air Force General Merrill A. McPeak reduced personnel and consolidated several Air Force commands.

As part of these shifts, the Air Force changed its Direct Reporting Units (DRUs) and Separate Operating Agencies (SOAs) to field operating agencies, assigning them to appropriate functional chiefs at Headquarters U.S. Air Force. AFOTEC's charter as an independent test agency, reporting directly to the Chief of Staff of the Air Force, made it one of only three Direct Reporting Units as of 5 February 1991.

Several proposals to consolidate Air Force OT&E at AFOTEC circulated during broad area reviews for reorganizing the Air Force. The U.S. Air Force Scientific Advisory Board, for example, posited expanding AFOTEC's role and scope of responsibility to the entire test and evaluation process, from initial statement of need to a system's last major upgrade. In contrast, a Department of Defense Inspector General report criticized the Air Force as lacking one single operational test agency.

AFOTEC has continued to grow in the decades since. In September 1991, Secretary of the Air Force Dr. Donald B. Rice and General McPeak created a new Air Staff office, the Director of Test and Evaluation. Retired Lieutenant General Howard W. Leaf became the first Director of Test and Evaluation in October 1991, soon proposing to



consolidate OT&E at AFOTEC. As part of the Air Force's reorganization and drawdown, General McPeak directed the Center to continue its lead role in multi-service OT&E, and consolidated all initial and qualification OT&E and select follow-on OT&E at AFOTEC by 1 June 1992. This limited the type and scope of OT&E major commands could perform in future. Overnight, AFOTEC's portfolio rose 47 to 186, and ultimately to more than 200 programs, and the center received



additional personnel to conduct its newly expanded mission. The Center's mission grew again on 1 October 1997 as AFOTEC absorbed the personnel and workload of the Defense Evaluation Support Activity (DESA). DESA had conducted rapid test of advanced concept technology demonstrations, sought innovative emerging technologies, and created prototypes. Between 2019 and 2023 AFOTEC acted as the U.S. Space Force's Operational Test Agency — the only OTA to serve two military services in the Department of Defense.

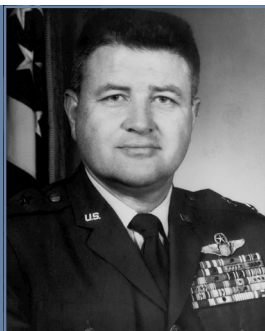
## TODAY'S AFOTEC

For over fifty years, AFOTEC has tested and evaluated new systems and capabilities in operationally realistic environments. AFOTEC's four detachments, ten operating locations, and its counterpart within the U.S. Space Force, Delta 12, execute OT&E by gathering data to produce independent, factual test reports on system effectiveness, suitability, and mission capability. AFOTEC informs decision makers as they allocate our nation's resources and warfighters, while significantly contributing to the fielding of quality systems for 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

---

## AIR FORCE OPERATIONAL TEST & EVALUATION CENTER

---



### **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.



---

# COMMANDERS

---

## AIR FORCE OPERATIONAL TEST & EVALUATION CENTER

---



### **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

## AIR FORCE OPERATIONAL TEST & EVALUATION CENTER



**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**

# COMMANDERS

## AIR FORCE OPERATIONAL TEST & EVALUATION CENTER



### 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.

---

# COMMANDERS

---

## AIR FORCE OPERATIONAL TEST & EVALUATION CENTER

---



### **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 - 19 July 2022**

A graduate of the United States Air Force Academy, General Sears entered the Air Force in 1991. A command pilot with 3600+ hours in the C-130E, T-3A, F-16, and T-38C, General Sears has experience in C-130 low-level special operations, every conventional F-16 mission type, three assignments as an instructor pilot, and contingency/combat sorties over Bosnia, Yemen, Iraq, and Afghanistan. He commanded the 61st Fighter Squadron, 20th Operations Group, 14th Flying Training Wing, and 455th Air Expeditionary Wing. His staff positions included Director of Plans, Programs and Requirements, Headquarters Air Education and Training Command, Joint Base San Antonio Randolph, Texas. General Sears departed AFOTEC to become Deputy Commander, Headquarters Air Education and Training Command.



# COMMANDERS

## AIR FORCE OPERATIONAL TEST & EVALUATION CENTER



### MAJOR GENERAL MICHAEL T. RAWLS

19 July 2022 – 14 August 2024

Major General Michael T. Rawls entered the Air Force in 1992 after receiving a Bachelor's of Science in Electrical Engineering. A graduate of U.S. Air Force Test Pilot School class 02B, he also holds three Master's degrees. He served in staff positions including the U.S. Military Delegation to NATO in Brussels, Belgium, the F-35 Program Office, and squadron and wing Commands. He flew the A-10A/C and F-15C in Operation SOUTHERN WATCH, and flight test of the A-10C, F-15C, F-16, and classified programs. General Rawls was a four-time member of the U.S. Military Pentathlon Team. Before his assignment to AFOTEC, General Rawls served as the Deputy Commander, NATO Mission Iraq, Baghdad, and as Commandant, Air War College. A command pilot with more than 2,100 hours in 32 different aircraft, he also flew the F-35A Joint Strike Fighter as an aggressor pilot.



### MAJOR GENERAL MICHAEL R. DROWLEY

14 August 2024 – Present

Major General Michael R. Drowley is the Commander, Air Force Operational Test and Evaluation Center, Kirtland Air Force Base, New Mexico. Maj. Gen. Drowley reports directly to the Air Force Chief of Staff regarding the test and evaluation of more than 98 major acquisition programs valued at more than \$1 trillion under test at 17 different locations, and directs the activities of over 750 military, civilian, and contractor personnel. As a key leader of the test and evaluation community, Maj. Gen. Drowley coordinates directly with the offices of the Secretary of Defense and Department of the Air Force while executing realistic, objective, and impartial operational testing and evaluation of Air Force, coalition, and joint warfighting capabilities.

A United States Air Force Academy graduate, Major General Drowley entered the Air Force in 1996 with a Bachelor of Science in Engineering. A command pilot with more than 2,400 hours, he has 200 combat hours in the A-10, and has flown the T-34, T-38, HH-60, C-130J, C-17, KC-135, B-1, B-2, B-52, F-15D, F-15E and F-16. General Drowley has earned Master's degrees in Psychology-Counseling-Leadership and in Joint Campaign Planning and Strategy from National Defense University. His assignments include Weapons School Instructor/Flight Commander, Assistant Director of Operations, and Commander, 66th Weapons Squadron, Commandant of the U.S. Air Force Weapons School, Chief of Staff, U.S. Air Forces Central Command, Al Udeid Air Base, Qatar, and twice commanded at the Wing level. Immediately prior to his current assignment as the Commander, Air Force Operational Test and Evaluation Center, General Drowley held the position of Director, Joint Training and Exercises (J7), U.S. Indo-Pacific Command.



# AIR AND SPACE 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 fourteen times since 1983. On November 16, 2020, the Secretary of the Air Force approved the renaming of the Air Force Organizational Excellence Award to the Air and Space Organizational Excellence Award in order to recognize both the Air Force and Space Force within the Department of the Air Force.

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
Special Order G-040	1 January 2019 - 31 December 2020

## 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.



**AFOTEC HISTORY OFFICE  
1251 WYOMING BLVD SE  
KIRTLAND AFB, NM 87117**

**E-MAIL: [AFOTEC.HO.WORKFLOW@US.AF.MIL](mailto:AFOTEC.HO.WORKFLOW@US.AF.MIL)  
COMMERCIAL: (505) 846-2484  
DSN: 246-2484**

