



# BIOGRAPHY

UNITED STATES AIR FORCE

## COLONEL Edward M. Jakes

Col Jakes is the Chief Scientist of the Air Force Nuclear Weapons Center (AFNWC), Kirtland Air Force Base, New Mexico. He serves as chief science and technology adviser to the AFNWC Commander, providing assessments on a wide range of scientific and technical issues affecting the AFNWC mission. He is responsible for identifying and analyzing technical issues and bringing them to the attention of AFNWC leadership, and interacting with other AFNWC directors, nuclear operational commanders, commands, nuclear acquisition, and nuclear science and technology communities to address cross-organizational technical issues and solutions.

Colonel Jakes graduated from North Carolina State University in 1989 with a Bachelor of Science degree in Nuclear Engineering. He earned a Master of Science degree from the University of New Mexico in 1994, also in Nuclear Engineering. For the past 24 years, Colonel Jakes has led scientific research and technical operations ranging from analysis of radiation effects on satellites to the global employment of the U.S. Atomic Energy Detection System's nuclear materials component. He was an instructor in the Department of Physics at the United States Military Academy, West Point, where he was responsible for the basic physics course for 4,000 cadets. He served as a panel and sub-panel member on several scientific committees, to include the Presidentially-directed Interagency Nuclear Safety Review Panel, which was responsible for Safety Evaluation Reports on NASA's deep space missions. He has also served as an aircraft maintenance officer supporting the C-141 Starlifter, C-5 Galaxy, and KC-10 Extender weapon systems.



### EDUCATION:

1989 Bachelor of Science degree in Nuclear Engineering, North Carolina State University  
1994 Master of Science degree in Nuclear Engineering, University of New Mexico  
1995 Squadron Officer School, Maxwell AFB  
2002 Air Command and Staff College, by correspondence  
2008 Air War College, by correspondence

### ASSIGNMENTS:

1. October 1990 - January 1995, Radiation Environments and Assessment Officer and Ground-based Laser Lethality Assessment Officer, Phillips Laboratory, Kirtland AFB, New Mexico
2. January 1995 - May 1997, OIC Sortie Support Flight and Assistant Maintenance Supervisor, 602<sup>nd</sup> Aircraft Generation Squadron, Travis AFB, California
3. June 1997 - May 1998, Maintenance Supervisor, 60<sup>th</sup> Equipment Maintenance Squadron, Travis AFB, California
4. June 1998 - June 2001, Program Manager, Nuclear and Directed Energy Systems, HQ AF Safety Center, Kirtland AFB, New Mexico
5. July 2001 - June 2004, Assistant Professor, Department of Physics, United States Military Academy, West Point, New York
6. July 2004 - June 2008, Chief, Information Operations Technology Division and Deputy Director, Information Operations Directorate, AF Information Operations Center, Lackland AFB, Texas

7. July 2008 – July 2011, Deputy Director, Materials Technology, AF Technical Applications Center, Patrick AFB, Florida

8. July 2011 – July 2014, Twelfth Air Force (Air Forces Southern) Director of Analyses, Assessments, and Lessons Learned, Davis-Monthan AFB, Arizona.

**MAJOR AWARDS AND DECORATIONS:**

Meritorious Service Medal with four oak leaf clusters

Air Force Commendation Medal with one oak leaf cluster

Air Force Achievement Medal with two oak leaf clusters

**PUBLICATIONS:**

“Observation of the Horizontal Drift of Thin Metallic Ion Layers over Sondrestrom”, Geophysical Research Letters, Vol 32, L01102, January 2005, with Bedey, D.F., Watkins, B.J., Heinseman, C.J., Zellmann, R.L.

“Safely Managing the Next Generation of Weapon Systems”, Weapons Journal, AF Recurring Publication 91-3, Vol 19, No. 3, 2000, pg 10-11

“Nuclear Reactor Audit of the McClellan Nuclear Radiation Center ALC McClellan AFB, California”, AFSC/SEW, Air Force Safety Center, April 1999, with Smith G.

Reconstruction of the 1990 Car Bomb Incident, AFSC/SEW, Air Force Safety Center, May 2000, with Allahdadi, F.A., Price, P.D., Campbell, M.M.

Exoatmospheric Nuclear Radiation Environment Prediction and Shielding Codes, PL-TR-92-1056, Phillips Laboratory, November 1992, with Daul, K.J., Greaves, R.

Comparison of Multiburst and Single Burst on Low Earth Orbit Satellites, PL-TR-92-1058, Phillips Laboratory, January, 1993, with Kattner, K.

Total Dose Impact upon LEO Satellites Resulting from a High-Altitude Nuclear Detonation, PL-TR-92-1066, Phillips Laboratory, February, 1992, with Kattner, K.

Satellite Orbital Handbook for the Study of High-Altitude Nuclear Tests, PL-TR-93-1051, Phillips Laboratory, September, 1993, with Kelchner, B.L., Rivera, P.R.

Early-Time Flux Environment from the C3/I Disruption Scenario Against the FEWS and Milstar Satellite System, PL-TR-93-1056, Phillips Lab., Sept., 1993, with Greaves, R.

**EFFECTIVE DATES OF PROMOTION:**

Second Lieutenant December 19, 1989

First Lieutenant October 15, 1992

Captain October 15, 1994

Major May 1, 2001

Lieutenant Colonel May 1, 2006

Colonel Nov 1, 2011