

KATHRYN HUGHES

MD, MPH, DAvMed

ASSOCIATE, DAYTON AEROSPACE, INC.

PROFILE

Over 25 years of experience in aviation and aerospace medicine with collaborative work across the Department of Defense (DOD), international military services, and as a consultant to government and industry. Experience in Human Systems Integration (HSI) human factors, aerospace physiology, life support equipment integration, and accident investigation—from both physician and pilot perspectives. Board Certified in Aerospace and Occupational Medicine; currently a practicing physician. Colonel, USAF (Retired).

PRINCIPAL AREAS OF EXPERTISE

Pilot-Physician

Over 3,100 hours as a military pilot primarily in the T-38, RC-135, A-10, and Royal Air Force Hawk. Over 400 hours in 23 additional military aircraft and 800+ hours as a civilian pilot in the Beechcraft Debonair.

Aviation Medicine

Squadron Commander and Chief of Aerospace Medicine at Edwards Air Force Base (AFB), CA. Supported aeromedical requirements for 16 flight test units and specifically led aerospace/occupational medicine support to the F-22 flight test program and F-35 developmental (DT&E) and operational test and evaluation (OT&E).

Human Systems Integration (HSI)

Director of the Executive Agency for HSI in the USAF Medical Service and Line of the Air Force, responsible for optimizing warfighter capability through an Airman-centric approach to system development, sustainment, and enhancement.

Life Support Equipment

Recognized subject matter expert (SME) in mitigation of G-induced Loss of Consciousness (GLOC). Significant experience as both a subject and safety pilot for ground/flight trials of life support equipment integration.

MEDICAL CERTIFICATIONS

- Department of Transportation (DOT) Medical Examiner, since 2016
- Medical Review Officer (MRO), since 2016
- Certification, Aerospace Physiology Association, 2014
- Board Certification in Occupational Medicine, 2011
- Board Certification in Aerospace Medicine, 2010
- Federal Aviation Administration (FAA) Aviation Medical Examiner (AME), since 2001
- Ohio Medical Licensure, since 2000



DAYTON AEROSPACE

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EDUCATION

Doctor of Medicine (MD)

University of Nebraska Medical Center

Diploma in Aviation Medicine

Kings College London, Royal College of Physicians

MPH, Health Management and Policy

University of Michigan School of Public Health

BS, Biology (Minor in Arabic)

US Air Force Academy (USAFA)

Certificate in Human Systems Integration

Naval Postgraduate School (NPS)

Air War College

Air Command and Staff College

Squadron Officer's School

(Distinguished Graduate)

KEY POSITIONS

Director, Human Systems Integration Directorate

711th Human Performance Wing (HPW), Air Force Research Laboratory (AFRL)

Chief, Aerospace Medicine Branch

HQ Air Force Reserve Command (AFRC)

Commander

412th Aerospace Medicine Squadron, Chief of Aerospace Medicine

Senior Medical Officer/Pilot

Royal Air Force (RAF) Centre of Aviation Medicine

A-10 Pilot Physician, Chief of Aerospace Medicine

Idaho Air National Guard (ANG)

WORK HISTORY

Associate | Dayton Aerospace, Inc.

2016-present, *Dayton, OH*

Senior consultant to industry and government acquisition teams specializing in human systems integration (HSI), human factors, aerospace/occupational medicine, and aerospace physiology.

Occupational Medicine Physician | Excel Corporate Care

2016-present, *Middletown, OH*

Occupational Medicine Physician performing Occupational Health and Safety Administration (OSHA)-mandated exams, workplace physicals, acute injury care, Workman's Compensation care/case management, FAA and DOT medical exams, and MRO duties.

Senior Consultant | Martin Baker

2016- present, *Dayton, OH and Denham, United Kingdom*

Senior consultant and program manager for in-service and new egress systems used by the USAF. Expertise focuses on aerospace physiology, injury criteria requirements, anthropometric accommodation, integration with aircrew life support equipment and interfacing with the user community.

Director, Human Systems Integration Directorate | 711th Human Performance Wing (HPW)

2014-2016, *WPAFB, OH*

- Led Line of the AF and USAF Medical Service Executive Agency for HSI.
- Responsible for optimizing warfighter capability through an Airman-centric approach to system development, sustainment, and enhancement.
- Occupational/Aerospace Medicine Physician at the WPAFB Occupational Medicine Clinic.

Chief, Aerospace Medicine Branch | HQ Air Force Reserve Command (AFRC)

2013-2014, *Robins AFB, GA*

- Command authority on flying waivers, medical standards, and medical readiness for 71,000 Reservists.
- Aerospace Medicine Functional Assessment Manager for 60 bases; responsible for policy development and implementation.
- Occupational/Aerospace Medicine Physician at the WPAFB Occupational Medicine Clinic.

Commander, 412th Aerospace Medicine Squadron | Chief of Aerospace Medicine

2011-2013, *Edwards AFB, CA*

- Commanded 107-member squadron; executed medical readiness, occupational and aerospace medicine, industrial hygiene, public health, dental, and optometry services for 12,000+ base personnel.
- Delivered medical, physiology, human performance, and health/safety support for the 412th Test Wing.
- Led aerospace/occupational medicine support to the developmental/operational test and evaluation mission (D/OT&E) for the F-35, F-22, F-16, B-1, B-2, B-52, C-17, and Global Hawk.
- Oversaw medical surveillance and physiologic data collection for F-22 OBOGS hypoxia-like event investigation.
- Occupational/Aerospace Medicine Physician at the WPAFB Occupational Medicine Clinic.

Residency in Aerospace/Occupational Medicine | University of Michigan School of Public Health (SPH)

2008-2011, *Brooks City-Base, TX*

Senior Medical Officer/Pilot | RAF Centre of Aviation Medicine

Staff Physician | UK Lakenheath AB

2005-2008, *RAF Henlow, UK*

- Command/safety pilot and test subject for research and development of new and existing life support equipment.
- Executed helmet, helmet-mounted display, G-Suit, and oxygen regulator flight trials for the Typhoon, F-35, and Hawk.
- Conducted GLOC mishaps and full-coverage (FC) G-suit technology analysis which led to FC implementation in the USAF F-16 fleet.

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Prior to 2005

- A-10 Pilot-Physician, Chief of Aerospace Medicine, Idaho Air National Guard, *Boise, ID*
- Flight Surgeon, 366th Aerospace Medicine Squadron, *Mountain Home AFB, ID*
- Medical School, Surgical Internship, University of Nebraska Medical School, *WPAFB, OH*
- RC-135 Reconnaissance Pilot, 38th Reconnaissance Squadron, *Offutt AFB, NE*
- T-38 Instructor Pilot, 87th Flying Squadron, ACE Detachment, *Laughlin AFB, TX & Offutt AFB, NE*

SAFETY INVESTIGATION BOARD EXPERIENCE**Instructor, Aircraft Mishap Investigation and Prevention Course****2010-2011, Brooks City-Base, TX**

Taught human factors analysis and investigation techniques to flight surgeons and aerospace physiologists and conducted reviews of USAF mishap events.

- **Safety Investigation Board – Medical Member (July 2013)**
Class C mishap: Ground mishap, inadvertent discharge of fire suppression system in hangar.
- **Safety Investigation Board – Medical Member (March-April 2012)**
Class B mishap: F-35 hypoxia symptoms following engine bleed failure, Integrated Power Plant (IPP) shutdown and cabin depressurization.
- **Safety Investigation Board – Medical Member (August 2011)**
Class B mishap: F-35 IPP failure resulting in ground engine fire.
- **Safety Investigation Board – Medical Member (June-July 2004)**
Class A mishap: A-10A turbine blade failure, subsequent engine fire and aircraft damage.
- **Safety Investigation Board – Medical Member (November-December 2000)**
Class A mishap: F-16CG S/N 89-2104 and Cessna 172, NV73829 mid-air collision with one civilian fatality.

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