

KEITH NUMBERS, PhD

ASSOCIATE, DAYTON AEROSPACE, INC.

PROFILE

Recognized national/international authority in flight propulsion for the US Air Force (USAF) with over 35 years of experience serving in various capacities in the propulsion engineering career field across the Department of Defense (DOD) acquisition life cycle. Provided engineering leadership and assistance for propulsion systems in the areas of technology transition, design, development, acquisition, production, sustainment, and airworthiness of jet engine propulsion systems for multiple USAF aircraft. Former propulsion Senior Technical Advisor for the Air Force Life Cycle Management Center (AFLCMC). Senior Leader (SL), Department of the Air Force (DAF) (Retired).

PRINCIPAL AREAS OF EXPERTISE

Propulsion Airworthiness Propulsion Systems
Propulsion System Safety Development & Integration
Propulsion System Sustainment

WORK HISTORY

Senior Associate | Dayton Aerospace, Inc.
2023-present, *Dayton, OH*

Senior consultant to government and aerospace industries for propulsion systems, critical technology implementation and evaluation, and airworthiness certification planning and implementation.

Senior Technical Advisor, Propulsion | Air Force Life Cycle Management Center
2019-2022, *Wright-Patterson AFB (WPAFB), OH*

Senior AFLCMC technical advisor and expert national/international authority in flight propulsion, responsible for providing advice and guidance to the highest USAF and US Government officials, as well as nationally important military aerospace weapon system programs. Led transformation of USAF propulsion enterprise into digital engineering, guiding long term goals, assessing government and industry digital capability, and implementing near term actions. Initiated AFLCMC propulsion engineering participation in hypersonic programs. Catalyzed intelligence organization and assessment of US turbine engine capability comparison to foreign capability. Revitalized technology transition planning team. Supported USAF propulsion fleet safety goals and corrective actions and advanced propulsion development programs.

Weapon System Integration Lead | Air Force Research Laboratory Turbine Engine Division (AFRL/RQT)
2009-2019, *WPAFB, OH*

Coordinated and planned technology activities supporting Air Superiority 2030 for AFRL, —supporting AFLCMC development, planning and analysis-of-alternatives (AoA). Charted propulsion system integration efforts for AFRL/RQT including technology benefits and program leadership. Completed successful preliminary design for adaptive turbine engine technology development for F-35 application. Established AS2030+ propulsion roadmap for AFLCMC and Air Combat Command (ACC) including development milestones and projected acquisition cost. Led AFRL engineers to provide technical assessment and modeling data for AoAs.



DAYTON AEROSPACE

4141 Colonel Glenn Hwy.
Suite 252
Dayton, Ohio 45431
P: (937) 426.4300

EDUCATION

PhD, Aerospace Engineering
University of Cincinnati

MS, Aerospace Engineering
University of Dayton

BS, Aerospace Engineering
University of Cincinnati

Air War College

Air Force GS-15 Leadership Seminar
Air University

Managing Complex Projects
Western Management
Development Center

Low Observables Short Course
Air Force Research Laboratory

**SYS 201 System Planning, Research,
Development & Engineering**
Defense Acquisition University
(DAU)

CERTIFICATIONS

**Acquisition Professional
Development Program (APDP)**
Systems Planning, Research,
Development, and Engineering –
Level III

WORK HISTORY (CONT'D)

Chief Engineer | Air Force Research Laboratory, Air Vehicles Directorate (AFRL/RB)

2008-2009, WPAFB, OH

Chief engineer for the Blackswift reusable hypersonic turbine-based combined cycle (TBCC) Flight Demonstrator Program. Responsible for developing program technical milestones, acquisition strategy, and leading the multi-organizational technical team from AFRL, Defense Advanced Research Projects Agency (DARPA), and National Aeronautics and Space Administration (NASA). Oversaw successful completion of multiple TBCC component testing campaigns including inlets, exhaust, and combustor rigs, and full-scale Mach 3-6 scramjet propulsion system tests. Led industry and government team to complete a flight vehicle preliminary design achieving all requirements. Developed the flight demonstrator program plan, including technical requirements, milestones, and resources. Successfully completed source selection for a multi-industry flight demonstration valued at roughly \$1B.

Lead, Long Range Strike Technology | AFRL/RB

1999-2008, WPAFB, OH

Served as AFRL focal point for Long Range Strike (LRS) technology planning and development. This was largely a self-directed position responsible for assessing USAF capability needs, identifying critical technologies, and developing laboratory wide roadmaps, and budget strategies. Supported AFLCMC development planning and served as Tech Approaches Working Group Lead for LRS AoA. Established AFRL/RB as lead for this activity within AFRL. Developed critical relationships and advocacy with key stakeholders at the DOD, MAJCOM and USAF HQ levels. Coordinated technology planning and execution with external agencies including DARPA, Office of Naval Research (ONR), and NASA. Ultimately led the Long-Term Challenge for Global Precision Engagement at the AFRL level, encompassing a multi-directorate team of senior engineers and planners establishing integrated science and technology (S&T) strategies.

Prior to (1999)

- Technical Advisor, Integration and Demonstration Branch, AFRL/VAAI, WPAFB OH
- Team Lead, Airframe Propulsion & Weapons Integration Branch, AFRL/VAAI, WPAFB OH
- Aerospace Engineer, Airframe Propulsion Integration Branch, AFRL/VAAI, WPAFB OH

DAYTON AEROSPACE

4141 Colonel Glenn Hwy.
Suite 252

Dayton, Ohio 45431

www.daytonaero.com