

JAMES G. CASLER, Ph.D., P.E.

Associate Professor
Department of Space Studies
University of North Dakota

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EDUCATIONAL BACKGROUND

Ph.D. 2000, North Dakota State University, Fargo, ND

Major: Engineering

Emphasis: Industrial Engineering and Management

Dissertation: "An Exploratory Study of Human Diagnostic Performance Measurement:
Implications for Tasks Performed in Space-Based Manufacturing"

Doctoral-Level Coursework:

Material Science

Advanced Human Factors Engineering

Neural Networks

Optimal Control Theory

Heat and Mass Transfer

Mechanics of Fluid States

Linear and Non-linear Systems

Phi Kappa Phi Honor Society

M.S., 1977, University of West Florida, Pensacola, FL

Major: Aeronautical Systems

Thesis: "A Methodology for Parameter Definition of a Fly-away Ejection Seat"

Sigma Xi Honor Society

M.B.A., 2006, Florida Institute of Technology, Melbourne, FL

Major: Professional Master of Business Administration

B.S., 1970, South Dakota State University, Brookings, SD

Major: Engineering Physics

Graduate, 1978, US Navy Test Pilot School, Patuxent River, MD

Graduate, 1988, National Defense University (Non-resident), Camp Lejeune, NC

Graduate, 1992, Navy War College (Non-resident), Washington, DC

PROFESSIONAL EXPERIENCE

2007 to **UNIVERSITY OF NORTH DAKOTA** **Grand Forks, ND**
present

Associate Professor, Space Studies Department

Provide instruction in business and management of space industrial enterprises to graduate students in residence and in distance learning. Member of Graduate Faculty. Member of Curriculum Committee. Courses taught: Quality Engineering, Management of Space Enterprises, Space Economics and Commerce, and Public Administration of Space Technology. Awarded over \$25K for research concerning lunar basing and risk management.

1998 to **WYLE LABORATORIES, Aerospace Group** **Lexington Park, MD**
2007

A strategic business unit of Wyle Laboratories, Aerospace Group is a professional

engineering and technical services company providing research, development, test, and evaluation services, program management services, and custom products to DoD, NASA,, as well as other Federal and commercial entities. This business unit is comprised of over 2000 personnel with annual revenue of \$300M.

Senior Manager, Business Development for Research and Development, Aerospace Group - Lexington Park, MD (2000 to 2007)

Provided strategic planning and business development for 2000 employee organization. At the Group level, led identification, qualification, and pursuit of large single sales objectives and development of new markets in aeronautical and aerospace research. Provided guidance and advice to subordinate operations units on opportunity selection, customer preparation, and resource requirement generation. Leader of several large multi-company teams pursuing business (~\$1B) in support of aerospace research for NASA customers. Chairman of corporate-wide NASA Marketing Initiative Team.

Systems Engineer, Aerospace Group - Lexington Park, MD (1998 to 2005)

Concurrently, in support of premier military test pilot school, provided planning and curriculum development for professional short-courses in test and evaluation of aerospace platforms and systems. Lecture on Risk Management and Test Planning. Established curricula for Crew Station Analysis for both traditional Test Pilot School students and short courses. Developed short courses for international customers.

1995 to
1998

DOCTORAL SABBATICAL

Fargo, ND

Doctoral Candidate - North Dakota State University, Fargo, ND (1995 to 1998)

Obtained interdisciplinary degree in Engineering with emphasis in Industrial Engineering and Management. Extensive research in space-based manufacturing processes, focusing on human performance.

Received national award from Project Management Institute for paper concerning research and development in small technical services companies.

Engineering/Management Consultant - Fargo, ND (1995 - 1998)

While pursuing doctorate, provided engineering/management support to several clients in support of testing and employing V-22 Osprey tiltrotor aircraft, as well as design of a reconfigurable flight simulator.

1992 to
1994

WYLE LABORATORIES (then Veda, Inc.)

Alexandria, VA

Operations Manager, System Integration - Lexington Park, MD (1993 - 1994)

Reported to Director, Systems Integration.

- Managed over 20 software and hardware engineers and technicians.
- Provided oversight of R&D of product line of flight test recorders and custom flight test instrumentation as well as other custom system integration projects.
- Managed on-site support team at Navy's Manned Flight Simulator facility.

Director, Internal R&D - Lexington Park, MD (1993 to 1994)

Concurrent with operations management position, developed and implemented an IR&D program incorporating sound engineering practices and discipline and establishing well-reasoned process for allocation of scarce resources.

Program/Project Manager - Lexington Park, MD (1992 to 1994)

Reported to Director, Systems Integration and to Program Manager, Rotary Wing Group.

- Led operations analysis team in study of costs and effectiveness of tiltrotor aircraft for Coast Guard missions.
- Developed and presented professional short-course on flight test planning for FAA Headquarters.
- Led project team in incorporation of two major software upgrades to reconfigurable flight simulator.
- Reorganized engineering flight simulator R&D program to enhance product performance, improve manufacturing methods, and develop markets.

1970 to
1992

UNITED STATES MARINE CORPS

Requirements Analyst - HQMC, Washington, DC (1991 to 1992)

Reported to Deputy Chief of Staff, Requirements and Programs. Responsible for identification of long range requirements for aviation weapon systems and analysis of other proposed advanced technology requirements.

- Directly supported Assistant Commandant with development and articulation of Marine Corps positions for Joint Requirements Oversight Council.

Deputy Program Manager/Senior Test Pilot - NATC, Patuxent River, MD (1988 to 1991)

Reported to Director, Rotary Wing Aircraft Test Directorate. Responsible for Navy Development Test of V-22 Osprey, to include oversight of flight testing by two major aircraft manufacturers.

- Exerted technical oversight of entire test planning process.
- Coordinated 26 work units in matrix organization of over 200 engineers, technicians, and test pilots.
- Identified and procured resources to include test pilots, chase aircraft, and training and maintenance facilities.
- Annual budget of approximately \$4M.
- First military pilot to fly the V-22.

Squadron Commanding Officer, Executive Officer, Group Logistics Officer - MCAS, New River, NC (1985-1988)

Served in variety of positions of increasing responsibility and authority. Eventually, as Commanding Officer, responsible for all activities and performance of multi-sited industrial facility of over 900 personnel providing intermediate level maintenance and supply support for over 90 aircraft of 5 models including both fixed- and rotary-wing aircraft.

Project Officer/ Test Pilot/ Operations Officer/ Flight & Academic Instructor - NATC, Patuxent River, MD (1978 to 1981 and 1982 to 1985)

- Co-pioneered development of methods to test and evaluate air-combat maneuvering for helicopters.
- Authored helicopter performance flight test manual currently in use at Navy Test Pilot School for over 25 years.

PROFESSIONAL QUALIFICATIONS**Clearance**

Secret (Top Secret available) – National Agency Check Jan 04

Engineering Registration

Fundamentals of Engineering Examination (1993)

Principles and Practices of Engineering (North Dakota, 1998)

States Registered: North Dakota, South Dakota, Maryland

TEACHING EXPERIENCE**Associate Professor, University of North Dakota, Grand Forks, ND (2007 to present)**

- Graduate faculty member
- Co-presenter, Survey of Space Studies II (traditional and distance learning format)
- Quality Engineering for the Space Industry (traditional and distance learning format)
- Management of Space Enterprises (traditional and distance learning format)
- Space Economics and Commerce (traditional and distance learning format)
- Public Administration of Space Technology (traditional and distance learning format)
- Comprehensive Examination
- Independent Studies (traditional and distance learning format)
- Co-presenter (10 hr) of 40 hr short course titled Human Spaceflight

Adjunct lecturer, Florida Institute of Technology, Patuxent River Campus, Patuxent River, MD (2000 to 2007)

- Graduate faculty member
- Systems Management (traditional and distance learning formats)
- Production and Operations Management (traditional format)
- Quality Engineering (distance learning format)
- Special Projects in Engineering Management (distance learning format)
- Engineering Operations and Logistics (distance learning format)
- Decision Theory (distance learning format)

Short Course Director/Instructor and Academic Instructor, U. S. Naval Test Pilot School, Patuxent River, MD (1998 to 2005)

- Crew Station Analysis
- Flight Test Planning
- Risk Management

Mentor, College of Engineering, North Dakota State University, Fargo, ND (1995 to 1998)

- Program and Project Management
- Work Station Design

Academic and Flight Instructor, U. S. Naval Test Pilot School, Patuxent River, MD (1982 to 1985, 1998 to present)

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|------------------------------------|-----------------------------|
| • Helicopter Performance | • Human Factors Engineering |
| • Helicopter Flying Qualities | • Risk Management |
| • Automatic Flight Control Systems | |
| • Cockpit Evaluation | |

Flight and Academic Instructor, Navy Helicopter Training Squadron 18, Milton, FL
(1975 – 1977)

COURSES TAUGHT

Regular Assignments

- Survey of Space Studies II (SPST 502) (traditional and distance learning format)
3 credits. Readings, discussion and integrative analysis of past and current issues in Space Studies. Emphasis is on a case study approach to develop an interdisciplinary understanding of space programs and initiatives. An individual project builds integrative and critical analysis skills and an appreciation for the interdisciplinary approach, while a team project engenders the interdisciplinary teamwork typical of the real world.
 - Spring 2009
 - Spring 2010
 - Spring 2011
- Space Economics and Commerce (SPST 540) (traditional and distance learning format)
3 credits. A study of economic aspects of space activities, with analysis of the possibilities and the barriers. Key areas include launch services, satellite communications, remote sensing, microgravity materials processing, and interaction with the government. Global competition against subsidies or government-sponsored entities is examined.
 - Fall 2008
 - Spring 2009
- Management of Space Enterprises (SPST 541) (traditional and distance learning format)
3 credits. This course investigates the management of space organizations. These include organizations that are public and private, R&D and operations, profit and non-profit. The student learns the basics of management theory, the history of systems management, and the technical issues that must be considered in the management of space R&D and operations.
 - Spring 2008
 - Fall 2008
 - Spring 2010
 - Fall 2010
- Public Administration of Space Technology (SPST 561) (traditional and distance learning format)
3 credits. This course is an advanced graduate-level review of public administration theories as applied to the implementation of space technology programs. In this course, the political, organizational, and technical variables that affect the management processes of space organizations are examined.
 - Fall 2009
- Advanced Topics: Quality Engineering for the Space Industry (SPST 570) (traditional and distance learning format)
3 credits. Lecture, discussion, and readings on advanced topics of current interest.
 - Fall 2007
 - Spring 2008
 - Summer 2008
 - Spring 2010
- Space Studies Colloquium (SPST 590) (traditional and distance learning format)
1 credit. A series of lectures presented by visiting lecturers and faculty
 - Spring 2011
- Space Studies Capstone (SPST 595) (distance learning format)
3 credits. The capstone course integrates, extends and applies knowledge gained from earlier Space Studies courses and reading. The major component of the course is a collaborative team project interrelating policy, technology, and science. This course

begins in the fall semester and concludes with an intensive seven-day capstone experience on the UND campus in the spring.

- Fall 2010
- Spring 2011
- Independent Studies (SPST 997)
2 credits. Independent study and preparation of a written report for students taking the non-thesis option in the Master's program.

Advisees

- Stephen Soto (March 2009) "The Viability of the Space Tourism Market"
- John George (July 2009) "The Commercial Space Launch Amendments Act of 2004: Federal Preemption and Informed Consent"
- Lee Tinker (December 2009) "Risk Assessment and Mitigation for a Space Solar Power Mega-project"
- Charles Hammond (in progress)
- Kayla LaFrance (in progress)
- Tom Gasmire (in progress)
- Jason Powell (in progress)

Curriculum Development Activities

- Quality Engineering for the Space Industry
- Management of Space Enterprises
- Space Economics and Commerce
- Public Administration of Space Technology

Program Support Activities

- Facilitated Department Comprehensive Examination
 - Summer 2008
 - Summer 2010
- Contributed to presentation of following courses
 - SPST 515 Spring 2008
 - SPST 501 Fall 2010

INSTITUTIONAL SERVICE

University

- University Senate, 2010 - 2011

College

- Curriculum Committee, 2007 – present
- Promotion and Tenure Committee, 2010

PUBLICATIONS

- Casler, J. G. (2010). Facility layout optimization of planetary industrial sites. Unpublished report under ND NASA EPSCoR Faculty Seed Research Grant NNX07AK91A.
- Casler, J. G. (2008). Flight test manual updates for rotary wing performance and stability & control. Unpublished white paper to United States Naval Test Pilot School.
- Green, P.; Rhoades, D.; Casler, J.; Schifferle, P. (2005). National Oceanographic and Atmospheric Administration Aircraft Operations Center Airworthiness Program Report. Unpublished report to National Oceanographic and Atmospheric Administration.
- Casler, J. G. & Cook, J. R. (2003). Work design and analysis for space-based manufacturing: a case analysis of initial design issues. *Ergonomics* 46(1-3), 141-152.
- Casler, J. G. (1999). An exploratory study of human diagnostic performance measurement:

Implications for tasks performed in space-based manufacturing. Doctoral dissertation. North Dakota State University, Fargo, ND.

Casler, J. G. & Cook, J. R. (1999). Cognitive performance in space and analogous environments. International journal of cognitive ergonomics 3(4), 351-372.

Casler, J. G. (1997). Comparison of terrestrial and space-based crystal manufacturing processes with respect to work design and analysis. Unpublished paper under NASA Space Grant Fellowship Program.

Casler, J. G. (1997). Management of research and development projects in small technical services companies. Project management journal, 28 (1), 19-24.

Casler, J. G. (1996). Work design and analysis for space-based manufacturing of industrial crystals. Unpublished paper under NASA Space Grant Fellowship Program.

Casler, J.; Cooney, T.; Hall, D.; Roe, A.; Whitacker, J. (1993). Application of tiltrotor technology to U. S. Coast Guard missions. Final Report. U. S. Coast Guard Research and Development Center.

Casler, J. G. (1984). Summary of helicopter performance flight test techniques (TM 83-1 TP). Patuxent River, MD: Naval Air Test Center.

Green, N.; Casler, J.; Neal, T. (1977). A methodology for parameter definition of a fly-away ejection seat. Unpublished Master's thesis. University of West Florida, Pensacola, FL.

PRESENTATIONS

Casler, J. (2009, May). Flight testing and high reliability organizations. Paper presented at Society of Experimental Test Pilots, Central Section Symposium, Wichita, KS.

Casler, J. G. (2001, May). Shortfalls in in-flight crew station assessment methods for developmental flight-testing. Paper presented at annual meeting of Department of Defense Human Factors Engineering Technical Advisory Group, Colorado Springs, CO.

Casler, J. G. (2001, May). Shortfalls in in-flight crew station assessment methods for developmental flight-testing. Paper presented at 72nd Annual Scientific Meeting, Aerospace Medical Association, Reno, NV.

Casler, J. G. & Cook, J. R. (1996, October). The match between industry's expectations of career engineers and the deliverables of two different capstone approaches. Paper presented at American Society of Engineering Educators regional meeting, Fargo, ND.

Casler, J. G. (1996, October). Management of research and development projects in small technical services companies. Paper presented at annual symposium of Project Management Institute.

Casler, J. G.; Scott, L. E.; McCue, J. J. (1984). Helicopter evasive maneuvering flight test: phase I. Society of Experimental Test Pilots 28th symposium proceedings.

Casler, J. G.; McCue, J. J.; Scott, L. E. (1984). Testing of helicopters in an air-to-air combat role. Navy Helicopter Association 36th Annual Convention.

GRANTS AND CONTRACTS

Funded	<u>Opportunity</u>	<u>Date</u>	<u>Amount</u>	<u>Title</u>
	UND Ressearch Development & Compliance Start-up Funds	Jun 2008	\$5000	
	North Dakota NASA EPSCOR Faculty Seed Research Opportunities	Apr 2009	21,198	Facility Layout Optimization of Planetary Industrial Sites
	North Dakota Space Grant Consortium Summer Faculty Fellowship	May 2009	5000	Course Development: SPST 570 Advanced Topics (Risk Management)

North Dakota Space Grant Consortium Summer Faculty Fellowship	May 2010	2500	Course Development: SPST 570 Advanced Topics (Risk Management)
North Dakota NASA EPSCOR Travel Grant	Oct 2010	1442	Travel funds for student to attend 42 nd Lunar & Planetary Science Conference

PROFESSIONAL AFFILIATIONS

Society of Experimental Test Pilots (1980 to present)

- Associate Fellow
- Past Member, Membership Committee
- Past Secretary, East Coast Section
- Past Treasurer, East Coast Section

American Institute of Aeronautics and Astronautics (1993 to present)

- Associate Fellow
- Member, Space Colonization Technical Committee
- Past Member, Microgravity and Space Processes Technical Committee

Society for Human Performance in Extreme Environments (1996 to 2001, 2009 to present)

- Former Technical Editor
- Former Member, Board of Directors

American Astronautical Society (1995 to 2001, 2006 to present)

Institute of Industrial Engineers (1998 to present)

National Society of Professional Engineers (2001 to present)

North Dakota Society of Professional Engineers (2010)

- Member, Chapter 1 (Grand Forks)

American Society for Quality (2008 to present)

HONORS AND AWARDS

Associate Fellow of Society of Experimental Test Pilots (1999)

Associate Fellow of American Institute of Aeronautics and Astronautics (2001)

Election to Phi Kappa Phi (1997)

Election to Sigma Xi (1977)

Meritorious Service Medal (1988, 1991, 1992)