

DR. ROLIN F. BARRETT, JR., P.E.

CONSULTING ENGINEER

BARRETT ENGINEERING

3141 John Humphries Wynd, Suite 280, Raleigh, North Carolina 27612

www.barrettengineer.com

EDUCATION

Doctor of Philosophy, Mechanical Engineering, North Carolina State University, 2005

Master of Science, Mechanical Engineering, Louisiana Tech University, 1996

Bachelor of Science, Mechanical Engineering, North Carolina State University, 1991

Bachelor of Science, Electrical Engineering, North Carolina State University, 1986

PROFESSIONAL LICENSING AND CERTIFICATION

Licensed Professional Engineer -- North Carolina and Florida

National Academy of Forensic Engineers – Member and Board Certified Diplomate of the Council of Engineering Specialty Boards

National Council of Examiners for Engineering and Surveying – Model Law Engineer

Accreditation Commission for Traffic Accident Reconstruction (ACTAR) – Fully Certified

National Association of Fire Investigators (NAFI) – Certified Fire and Explosion Investigator

National Association of Fire Investigators (NAFI) – Certified Vehicle Fire Investigator

Certified to Download and Analyze Detroit Diesel (DDEC) Reports

Certified Crash Data Retrieval System “Black Box” (Airbag Control Module) Analyst

Certified Crash Data Retrieval System “Black Box” (Airbag Control Module) Technician

Bendix Commercial Vehicle Systems – Certified Air Brake Specialist

SOME PERTINENT COURSES, SEMINARS, AND ADDITIONAL CERTIFICATION:

Comprehensive Air Brake Systems Training Program in the Operation and Maintenance of Heavy Duty Vehicle Air Brake Systems and Components, Bendix Commercial Vehicle Systems

Vehicle Fire, Arson, and Explosion Investigation Science and Technology Seminar, National Association of Fire Investigators

Fire, Arson & Explosion Investigation Training Program, National Association of Fire Investigators

DDEC Reports (Diagnostic and management reports, including trip activity, speed vs. rpm, engine load vs. rpm, periodic maintenance, daily engine usage, life-to-date summary, hard brake, and last stop record), Detroit Diesel Corporation/Freightliner, LLC

Crash Data Retrieval System (“Black Box”) Analyst, Collision Safety Institute

Crash Data Retrieval System (“Black Box”) Technician, Collision Safety Institute

Global Positioning Systems, Trimble, Inc.

Scanning Electron Microscope Course and Laboratory, North Carolina State University

Scuba Certification – North Carolina State University

Senior Lifesaving, Small Craft Instructor, Water Safety Instructor – American Red Cross

ENGINEERING CONSULTING

Engineering assistance is provided on technical aspects of vehicle and industrial accidents, explosions, and fires.

Motor vehicle accidents are analyzed using engineering principles, including accidents involving automobiles, trucks, motorcycles, farm and construction equipment.

Fire scenes are examined for causes and origins, as well as possible equipment malfunctions and violations of codes and standards.

Other engineering analyses include industrial equipment accidents, electrocutions following accidental contact with power lines or various types of equipment.

EMPLOYMENT

2000- Consulting Engineer, Barrett Engineering, Raleigh, North Carolina
1986-2000 Engineer—Full/Part-Time, Barrett Engineering, Raleigh, North Carolina

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

National Academy of Forensic Engineers
 Committee on Accident Reconstruction
 Committee on Incident Evaluation
National Society of Professional Engineers
Institute of Electrical and Electronics Engineers
American Society of Mechanical Engineers
Society of Automotive Engineers
American Society of Agricultural and Biological Engineers
American Institute of Aeronautics and Astronautics
National Association of Fire Investigators
North Carolina Trucking Association Maintenance Council

TEACHING, RESEARCH, AND ENGINEERING EDUCATION SUPPORT

Guest Lecturer – North Carolina State University, Raleigh, NC
 MAE 415 Analysis for Mechanical Engineering Design
 MAE 416 Mechanical Engineering Design
 MAE 442 Automotive Engineering

Designed and conducted research at North Carolina State University, Raleigh, NC, related to high and low speed impact response of composite structures, quasi-static loading of composite structures, and examination of failure mechanisms in composite structures subjected to impacts and quasi-static loading

Taught Dynamic Systems Analysis Laboratory at Louisiana Tech Univ., Ruston, LA

Guest Lecturer – Grambling State University, Grambling, LA

Sponsor – 2008 Groundbreaking Ceremony, Engineering Building III (Future Home of the Department of Mechanical and Aerospace Engineering and the Department of Biomedical Engineering), Centennial Campus, North Carolina State University, Raleigh, NC

Member – 2008 External Advisory Board, Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC
 Chairman - Committee for Program Review and Assessment, Including Curricula, ABET, and Graduate Program

PUBLICATIONS

Prototype Design and Fabrication, Dr. Rolin F. Barrett, Jr., and Dr. Eric C. Klang, NCSU, Raleigh, NC 2007

“The History of Armor,” NC State Engineer, Rolin F. Barrett, Jr., Spring, 1992

“The Scanning Electron Microscope,” NC State Engineer, Rolin F. Barrett, Jr., Winter 1991-1992

RESEARCH LABORATORY

The laboratory includes a scanning electron microscope and high vacuum evaporator, stereoscopic microscopes, hardness testers, digital oscilloscope, and tensile test apparatus. In addition, there are numerous precision instruments in the laboratory for measuring dimensional values, electrical parameters, forces, gas concentrations, pressures, sound levels, velocities of gases and liquids, temperatures, and weights.

Some portable instruments are the field stereomicroscopes, accelerometers, strain gauge apparatus, vehicle scales, radar speed detectors, dynamometers, and friction measuring /slip resistance apparatus.

The vehicle crash data retrieval system downloads information stored in a vehicle's airbag control module. Computerized motor vehicle accident analysis programs aid in preparation of accurate drawings of accident sites and assist in analysis of vehicle positions, velocities, and accelerations.

PATENTS

2002 U. S. Patent No. 6,715,399 - **Firearm Bolt Assembly**

Moveable bolt assembly disposed adjacent the barrel. An energy-absorbing mechanism carried by the bolt assembly, reducing both weight and recoil.

2001 Patent Pending - **Gun Sight**

An alternate arrangement for sights. Specifically, a powered luminescent ring surrounding the sight, which may be turned on selectively.

1999 Patent Pending - **Electronic Aid for the Visually Impaired**

Hand-held device using reflected laser beams to detect objects in the approaching landscape to assist a visually impaired individual to successfully navigate through an area.

1998 U. S. Patent No. 5,788,178 - **The Guided Bullet**

A bullet that includes an on-board laser guidance system for altering and directing the flight of the bullet along a trajectory to a target identified by a laser projecting onto the target.

AIRPLANE

When needed, a Rockwell Twin Turbo Commander facilitates mid-range and long-range travel on short notice directly to an airport in the area of an accident, allowing a fast response and recovery of evidence for examination in the laboratory without leaving the custody of the engineer.

CIVIC, SOCIAL, AND FRATERNAL ORGANIZATIONS

- 2001- Village of Pinecrest, Chairman/Member, Architectural Review Board
- 2000- Triangle Society, Raleigh, North Carolina
- 2000- Cardinal Club, Raleigh, North Carolina
- 1997- Sir Walter Gun Club, Raleigh, North Carolina, Board of Directors (1999-2000)
- 1994-1997 Krewe of Janus, Monroe, Louisiana
 - Fundraising for charitable causes including:
 - Association of Retarded Children
 - Shriners' Burn Camp for Children
 - Construction and Parade Preparation of Mardi Gras Floats
 - Elected "Duke" of Mardi Gras Court
- 1993-1996 Tower Club, Monroe, Louisiana
 - Chairman, Professionals/Singles Committee
 - Membership Committee
- 1992-1994 Ruston Civic Symphony, Ruston, Louisiana
 - Chairman, President's Advisory Committee
 - Vice President
 - Board of Directors
- 1990- Theta Tau Engineering Fraternity

CONSULTING FEE -- The current charge for consulting services is \$250.00 per hour and expenses.