

Charles Benedict, Ph.D., P.E.



Education/Training

University of Florida:
Ph.D. in Mechanical Engineering
M.S. in Mechanical Engineering
B.S. in Mechanical Engineering

Florida State University:
B.S. - Mathematics with Engineering Science Minor

State of Florida P.E.:
No. 17229

State of Georgia P.E.:
No. 23538

State of Alabama P.E.:
No. 26378-E

State of South Carolina P.E.:
No. 23491

Board Certified Forensic Examiner:
No. 631

Texas A&M University:
(TEEX) Advanced Commercial Vehicle Inspection and
Collision Investigation Course

SAE Motor Vehicle Accident Reconstruction Seminar
Crash Reconstruction Purpose and Principles (AAAM)
**Crash Performance Standards and the Biomechanics of
Impact (AAAM)**

**Accident Avoidance and Tire Blow-out Control and
Dynamics**

Motorcycle Dynamics and Accident Avoidance

Specialties:

Biomechanics

Occupant Kinematics

**Vehicle Restraint
Systems**

Vehicle Controlability

Material Handling

Patent Infringement

Automobile Accidents

Pedestrian Accidents

General Engineering

Product Design

Fire & Explosion Analysis

Tractor/Trailer Accidents

Electrical Issues

Dr. Benedict founded BEC Companies in 1982. He has over 35 years experience in the fields of product and machine design and analysis, vehicular accident reconstruction of all types, and product and system failure analysis. He has designed, developed, manufactured, and tested more than sixty different products and machine systems. Dr. Benedict is well respected in the fields of forensic engineering, product and machine system design and analysis, and patenting.

BEC CONSULTING, LLC

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Accident Reconstruction

Curriculum Vitae

Charles E. Benedict, Ph.D., P.E.

(850) 558-3114 · cbenedict@becind.com

Electro-mechanical engineer specializing in accident reconstruction including fire-cause analysis for vehicles, construction and processing, people movers, and other electro-mechanical systems; and product-failure analysis including product development and machine design. Dr. Benedict is qualified as an expert in federal and state courts in Florida, Georgia, Alabama, Mississippi, Louisiana, Maryland, Oregon, New Mexico, Wisconsin, South Carolina, California, Texas, Washington, Oklahoma, Missouri, Ohio, and others.

EDUCATION

- 1971** **Doctor of Philosophy in Mechanical Engineering
by NDEA Title IV Fellowship**
Minor, Electrical Engineering
University of Florida, Gainesville, FL
- 1969** **Master of Science in Mechanical Engineering**
University of Florida, Gainesville, FL
- 1968** **Bachelor of Science in Mechanical Engineering**
With High Honors
University of Florida, Gainesville, FL
- 1963** **Bachelor of Science in Mathematics**
Minor, Engineering Science
Florida State University, Tallahassee, FL

PROFESSIONAL EXPERIENCE

- 1982 to present** **BEC Companies, Inc.**
(Formerly Benedict Engineering Company, Inc.), Tallahassee, FL
President and CEO
- BEC Industries, LLC, Tallahassee, FL**
CEO and General Manager
- BEC Consulting, LLC, Tallahassee, FL**
CEO and Consultant
- 1982 to 1984** **Benedict & Associates, Inc., Tallahassee, FL**
President

1971 to 1981	Wayne H. Coloney Company, Inc., Tallahassee, FL
1978 to 1981	President
1973 to 1977	Vice President
1972 to 1973	Manager, Forensic Engineering and Machine Design Division
1971 to 1972	Mechanical Engineering Consultant
1964 to 1968	Florida Gas Transmission Company, Gainesville, FL
	Measurement Technician
1953 to 1963	Barrett, Daffin, Coloney & Bishop, Tallahassee, FL
	Engineering Technician

LICENSES, REGISTRATIONS & CERTIFICATIONS

No. 17229	State of Florida Professional Engineer
No. 26378-E	State of Alabama Professional Engineer
No. 23491	State of South Carolina Professional Engineer
No. 23538	State of Georgia Professional Engineer
No. 1228	Board Certified Forensic Examiner
	Certified Counter Balanced Forklift Operator

PROFESSIONAL ASSOCIATIONS

- American College of Forensic Examiners, Fellow, I.D. #1228
- American Boat and Yacht Council
- American Society of Mechanical Engineers, Fellow
- American Society for Concrete Construction
- American Society of Agricultural Engineers
- American Society of Safety Engineers
- American Society for Testing Materials
- Association for the Advancement of Automotive Medicine
- Florida Engineering Society
- Governors Club, Founding Member
- National Defense Transportation Association
- National Fire Protection Association
- National Safety Council
- National Society of Professional Engineers
- President's Association Affiliated with American Management Association
- Society of Automotive Engineers
- Tau Beta Pi, Phi Kappa Phi, Pi Tau Sigma, Omicron Delta Kappa

COURSEWORK/CONTINUING EDUCATION

- 2011 “Safe Operation of Powered Industrial Truck”
BEC Consulting, Tallahassee, FL
- 2004 “Analysis of Collisions Involving Pedestrians or Bicyclists”
Collision Safety Institute, Tallahassee, FL
- 2000 “Commercial Vehicle Inspection and Collision Investigation”
Texas A&M University, Tallahassee, FL
- 2000 “Advanced Vehicle Inspection and Collision Investigation”
Texas A&M University, Tallahassee, FL
- 1991 “SAE Motor Vehicle Accident Reconstruction Seminar”
Dr. Rudolph Limpert, Tallahassee, FL
- 1990 “Crash Reconstruction Purpose and Principles”
Association for the Advancement Automotive Medicine, Orlando, FL
- 1990 “Crash Performance Standards and the Biomechanics of Impact: What Are
the Relationships?”
Association for the Advancement of Automotive Medicine, Orlando, FL
- 1987 “Motorcycle Dynamics and Accident Avoidance”
Michelin Safety Group, Watkins Glenn, New York
- 1986 “Accident Avoidance and Tire Blow-Out Control and Dynamics
Michelin Safety Group, Carson City, NV

PUBLICATIONS

- Benedict, C.E. and Gary K. Matthew. “Selection And Optimization Of A Mechanism To Drive An Orange Tree Canopy Shaker.” Paper presented at the New Wave of Technology Workshop at the University of Texas, August 2010.
- Buchner, G.B. and C.E. Benedict. “Finding, Understanding and Utilizing the Coefficient of Friction.” Paper presented at the ATLA National College of Advocacy Conference, 1995.
- Benedict, C.E. and D. Tesar. “Model Formulation of Complex Mechanisms with Multiple Inputs: Part II – The Dynamic Model.” Paper presented at the Transactions of the Winter ASME Meeting, 1977.
- Benedict, C.E. and D. Tesar. “Model Formulation of Complex Mechanisms with Multiple Inputs: Part I – Geometry.” Paper presented at the Transactions of the Winter ASME Meeting, 1977.

Benedict, C.E. and D. Tesar. "The Use of Influence Coefficients in Treating the Dynamics of Machine Problems." Proceedings of the Applied Mechanisms Conference, Paper No. 43, 1973.

Benedict, C.E. "Dynamic Response Analysis of Complex Mechanisms Systems with Multiple Inputs." Ph.D. diss., University of Florida, 1971.

Benedict, C.E., D. Tesar and G.K. Matthew. "Torque Balancing of Machines by Sub-Unit Cam Systems." Proceedings of the Applied Mechanisms Conference, 1971.

Benedict, C.E. and D. Tesar. "Dynamic Response of a Mechanical System Containing a Coulomb Friction Force." Transactions of the International Federation of Theory of Machines and Mechanisms, 1971.

Benedict, C.E. and D. Tesar. "Dynamic Response Analysis of Quasi-Rigid Mechanical Systems Using Kinematic Influence Coefficients." *International Journal of Mechanisms*, 1971.

Benedict, C.E. and J.S. Smith. "Design by Second Order Derivative Specifications." *Mechanical Engineering News*, Feb, 1971.

Benedict, C.E. and D. Tesar. "Optimal Torque Balance for a Complex Stamping and Indexing Machine." Paper presented at the ASME Mechanisms Conference, 1970.

Benedict, C.E. and D. Tesar "Analysis of a Mechanical System Using Kinematic Influence Coefficients." Paper presented at the Applied Mechanisms Conference, Oklahoma State University, 1969.

Benedict, C.E. "Dynamic Response Analysis of Real Mechanical Systems Using Kinematic Influence Coefficients." Masters thesis, University of Florida, 1969.

Benedict, C.E. "Response Analysis and Optimization of Parameters of a Spring Loaded High Pressure Gas Regulator." High Honors Project, University of Florida, 1968.

PRESENTATIONS

Benedict, Charles E. "Biomechanics of Motor Vehicle Accidents." Lynn University Course on Biomechanical Trauma, Miami, FL, May 17, 2002.

Benedict, Charles E. "Accident Reconstruction, Collision Dynamics and Injury Mechanisms." Lynn University Course on Biomechanical Trauma, Miami, FL, October 18, 1996.

Benedict, Charles E. "Accident Reconstruction, Collision Dynamics and Injury Mechanisms." Lynn University Course on Biomechanical Trauma, Miami, FL, May 10, 1995.

Benedict, Charles E. "Accident Reconstruction: Capturing the Jury's Attention." Risk Insurance Management Society Conference, Naples, FL, August 18, 1995.

Benedict, Charles E. "Finding, Understanding and Utilizing the Coefficient of Friction." Association of Trial Lawyers of America, National College of Advocacy Conference, Dallas, TX, September 23, 1995.

Benedict, Charles E. "Accident Reconstruction, Collision Dynamics and Injury Mechanisms." Lynn University Course on Biomechanical Trauma, Miami, FL, January 20, 1994.

Benedict, Charles E. "The Coloney Ammunition Loading System." American Defense Preparedness Association – Loading, Assembly & Packing Ammunition Technology, 1978.

Benedict, Charles E. "Dynamics of Machinery." NSF Workshop, Oklahoma State University, 1971.

PATENTS & PATENTS PENDING

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. "Automated Material Handling System With Load Transportation Vehicles." US Patent No. 7,931,431 B2, filed September 5, 2006 and issued April 26, 2011.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. "Overhead Vehicle Storage System." US Patent No. 7,909,558 B2, filed May 2, 2007 and issued March 22, 2011.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. "Overhead Boat Storage System." US Patent No. 7,850,412 B2, filed May 2, 2007 and issued December 14, 2010.

Benedict, Charles E. and Gary K. Matthew, "Linkage Drive Mechanism For Citrus Harvesters." U.S. Provisional Patent Application No. 61/377997, filed August 30, 2010.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al., "Automated Automotive Vehicle Parking/Storage System." U.S. Patent Application No. 12/855017, filed August 12, 2010.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al., "Material Handling And Storage/Warehousing System (w/3-D AGV)." U.S. Patent Application No. 12/854990, filed August 12, 2010.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. "Port Storage and Distribution System for International Shipping Containers." U.S. Patent No. 7,753,637, filed March 1, 2007 and issued July 13, 2010.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al., "Port Storage & Distribution System for International Shipping Containers." U.S. Patent Application No. 12/833324, filed July 9, 2010.

- Benedict, Charles E., Scott K. Bladen, James R. Dobbs et al., "Automated Shipboard Material Handling and Storage System." US Patent Application No. 12/767560, filed April 26, 2010.
- Benedict; Charles E. "Non-Inertial Release Safety Restraint Belt Buckle Systems." U.S. Patent No. 7,225,511, filed December 17, 2004, and issued June 5, 2007.
- Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. "Warehouse Storage System." U.S. Patent Application No. 11/743585, filed May 2, 2007.
- Benedict; Charles E. "Permanent and Semi-Permanent Groyne Structures and Method for Shoreline and Land Mass Reclamation." U.S. Patent No. 6,932,539, filed January 20, 2004, and issued August 23, 2005.
- Benedict; Charles E., Corbett; Stephen R., Yates; Christian and Boeshaghi; Farhad. "Safety Guard for Band Saws." U.S. Patent No. 6,857,347, filed March 18, 2003, and issued February 22, 2005.
- Benedict; Charles E., Thompson; William P., Corbett; Stephen R., Dobbs; James R. and Bladen; Scott K. "Track Mounted Stanchion and Clamp Assemblies for Storage and Dunnage Systems." U.S. Patent No. 6,749,383, filed January 9, 2002, and issued June 15, 2004.
- Benedict; Charles E., James R. Dobbs, Christian A. Yates, and Perry L. Ponder. "Adjustable Porous Structures and Method for Shoreline and Land Mass Reclamation." U.S. Patent No. 6,722,817, filed November 18, 2002, and issued April 20, 2004.
- Benedict; Charles E. "Non-Inertial Release Safety Restraint Belt Buckle Systems." U.S. Patent No. 7,263,749, filed March 31, 2004, and issued September 4, 2007.
- Benedict; Charles E., Brian G. Pfeifer, Christian A. Yates, and Scott K. Bladen. "Automated Shipboard Material Handling and Storage System." U.S. Patent 7,708,514, filed March 31, 2004, and issued May 4, 2010.
- Benedict; Charles E., William P. Thompson, Stephen R. Corbett, James R. Dobbs, and Scott K. Bladen. "Stanchion and Clamp Assemblies for Storage and Dunnage Systems." U.S. Patent No. 6,705,812, filed January 9, 2002, and issued March 16, 2004.
- Benedict; Charles E., James R. Dobbs, and Perry L. Ponder. "Permanent and Semi-Permanent Groyne Structure and Method for Shoreline and Land Mass Reclamation." Japanese Patent No. 3,983,675, filed May 9, 2002, and issued July 13, 2007.
- Boeshaghi; Farhad, Charles E. Benedict, Stephen R. Corbett, Christian A. Yates, et al. "Pivotal Guards for Power Hand Tools with Rotating Discs." U.S. Patent No. 6,699,114, filed April 26, 2002, and issued March 2, 2004.
- Benedict; Charles E. "Non-Inertial Release Safety Restraint Belt Buckle Systems." U.S. Patent No. 7,073,235, filed February 3, 2004 and issued July 11, 2006.

Benedict; Charles E. "Non-Inertial Release Safety Restraint Belt Buckle Systems." U.S. Patent No. 7,146,692, filed September 25, 2003 and issued December 12, 2006.

Benedict; Charles E., James R. Dobbs, and Perry L. Ponder. "Permanent and Semi-Permanent Groyne Structures and Method for Shoreline and Land Mass Reclamation." U. S. Patent No. 6,558,075, filed May 10, 2001, and issued May 6, 2003.

Benedict; Charles E. "Automated Material Handling System with Motorized Transfer Vehicles." U.S. Patent No. 7,101,139, filed May 6, 2003 and issued September 5, 2006.

Benedict; Charles E. "Non-Inertial Release Safety Restraint Belt Buckle System." U.S. Patent No. 6,539,595, filed June 29, 2001, and issued April 1, 2003.

Benedict; Charles E. and Donald M. Stumpf. "Vehicle Light, Windshield Wiper Control System." Canadian Patent No. 2,141,819, filed August 3, 1992, and issued February 11, 2003.

Benedict; Charles E., James R. Dobbs, Christian A. Yates, and Perry L. Ponder. "Adjustable Porous Structures and Method For Shoreline and Land Mass Reclamation." U. S. Patent No. 6,481,926, filed April 9, 2001, and issued November 19, 2002.

Benedict; Charles E. and Donald M. Stumpf. "Vehicle Light, Windshield Wiper Control System." Canadian Patent No. 2,115,169, filed August 3, 1992, and issued November 12, 2002.

Benedict; Charles E. "Doorstop." U.S. Patent No. 6,120,072 filed June 28, 1999, and issued September 19, 2000.

Benedict; Charles E., Douglas A. Newcomer, Gregory W. Hatcher, Timothy M. Cheek, and Douglas R. Stahl. "Safety Guard Stop For Power Saws." U. S. Patent No. 6,119,569, filed June 30, 1997, and issued September 19, 2000.

Benedict; Charles E. "Temperature Responsive Fluid Flow Controllers. U.S. Patent No. 5,984,195, filed May 15, 1997, and issued November 16, 1999.

Benedict; Charles E. "Temperature Responsive Valves and Method of Regulating Fluid Flow There through." U.S. Patent No. 5,967,409, filed May 11, 1998, and issued October 19, 1999.

Benedict; Charles E., Douglas A. Newcomer, Gregory W. Hatcher, Timothy M. Cheek, and Douglas R. Stahl. "Miter Saw Blade Guards." U.S. Patent No. 5,950,514, filed February 28, 1997, and issued September 14, 1999

Benedict; Charles E. "Adjustable Porous Groynes and Method for Shoreline Reclamation." U.S. Patent No. 5,944,443, filed February 23, 1998, and issued August 31, 1999

Benedict; Charles E. "Pool Skimmer Screens." U.S. Patent No. 5,935,450, filed December 4, 1997, and issued August 10, 1999.

Benedict; Charles E., Douglas A. Newcomer, Gregory W. Hatcher, Timothy M. Cheek, and Douglas R. Stahl. "Radial Arm Saw Blade Guard." U.S. Patent No. 5,918,522, filed June 27, 1997, and issued July 6, 1999.

Benedict; Charles E. "Double Relay Light Switching System for Providing Daytime Running Lights for Vehicles." U.S. Patent No. 5,912,534, filed March 17, 1997, and issued June 15, 1999.

Benedict; Charles E. and Patrick Mullins. "Automatic Vehicle Light Relay Switching System for Providing Daytime Running Lights." U.S. Patent No. 5,886,471, filed March 17, 1997, and issued March 23, 1999.

Mullins; Patrick S., Victor C. Cordiano, and Charles E. Benedict. "Automatic Daytime Running Light System." Canadian Patent No. 2,121,015, filed April 11, 1994, and issued October 13, 1998.

Lay; Alvin Loise and Charles E. Benedict. "Spare Wheel Assembly for Trailers." U. S. Patent No. 5,813,687, filed April 8, 1996, and issued September 29, 1998.

Benedict; Charles E. "Biodegradable Groynes." U.S. Patent No. 5,807,024, filed June 17, 1996, and issued September 15, 1998.

Benedict; Charles E. "Temperature Responsive Fluid Flow Controllers." U.S. Patent No. 5,803,354, filed June 18, 1996, and issued September 8, 1998.

Benedict; Charles E., Spencer; L. Clay and Beggs, IV; Thomas J. "Adjustable Porous Groynes and Method for Shoreline Reclamation." U.S. Patent No. 5,720,573, filed January 3, 1996, and issued February 24, 1998.

Chezem; Jim A., Charles E. Benedict, and Arthur Williams. "Door Stop." U.S. Patent No. 5,673,952, filed August 22, 1995, and issued October 7, 1997.

Benedict; Charles E. 1995. "Flow Control Valve Assembly." U.S. Patent No. 5,634,491, filed October 23, 1995, and issued June 3, 1997.

Mullins; Patrick, Charles E. Benedict, and Jay S. Tiedeberg. "Automated Ambient Condition Responsive Daytime Running Light System." U.S. Patent No. 5,614,788, filed August 1, 1995, and issued March 25, 1997.

Mullins; Patrick S., Victor C. Cordiano, and Charles E. Benedict. "Automatic Daytime Running Light System." U.S. Patent No. 5,438,237, filed December 6, 1993, and issued August 1, 1995.

Benedict; Charles E., Thomas B. Middlebrooks, Robert G. Stampfli, Victor C. Cordiano, Charles W. Belt, and Jay S. Tiedeberg. "Adjustable Showerhead Assemblies." U.S. Patent No. 5,294,054, filed January 27, 1993, and issued March 15, 1994.

Bornstein; Irvin, Thomas B. Middlebrooks, Scott M. Eddy, and Charles E. Benedict. "Cam Phase Change Mechanism." U.S. Patent No. 5,253,622, filed February 17, 1993, and issued October 19, 1993.

Bornstein; Irvin, Thomas B. Middlebrooks, Scott M. Eddy, and Charles E. Benedict. "Spring Assist System for Internal Combustion Engine Valves." U.S. Patent No. 5,245,957, filed February 4, 1993, and issued September 21, 1993.

Benedict; Charles E. and Donald M. Stumpf. "Vehicle Light, Windshield Wiper Control System." U.S. Patent No. 5,185,558, filed August 8, 1991, and issued February 9, 1993.

Benedict; Charles E. and Donald M. Stumpf. "Vehicle Light, Windshield Wiper Control System." U.S. Patent No. 5,136,209, filed September 7, 1990, and issued August 4, 1992.

Benedict; Charles E. and Donald M. Stumpf. "Headlight, Windshield Wiper Control System." U.S. Patent No. 4,956,562, filed September 15, 1989, and issued September 11, 1990.

Benedict; Charles E. William P. Thompson and Patricia C. Benedict. "Housing for Article Support Racks." U.S. Patent No. D308,579, filed December 16, 1986, and issued June 12, 1990.

Benedict; Charles E. and Judith B. McGinnis. "Clothing Accessory Rack." U.S. Patent No. 4,771,899, filed January 22, 1988, and issued September 20, 1988

Phipps; Colin S., Joseph W. Arnett, William P. Thompson and Charles E. Benedict. "Extendable Mailbox Trays." U.S. Patent No. 4,753,385, filed February 18, 1986, and issued June 28, 1988.

Benedict; Charles E. "Coffee Filter Ring." U.S. Patent No. 4,735,719, filed February 12, 1987, and issued April 5, 1988.

Benedict; Charles E. and Raymond L. Lancaster. "Multidirectional Material Handling Support and Shuttle Systems." U.S. Patent No. 4,733,783, filed March 25, 1986, and issued March 29, 1988.

Benedict; Charles E., C. Joseph Goeke, William P. Thompson and Patricia C. Benedict. "Telescoping Closet Garment Organizer." U.S. Patent No. 4,723,665, filed January 12, 1987, and issued February 9, 1988.

Benedict; Charles E. "Extendable Closet Organizers." ROC Patent No. 39,279, issued June 1, 1986.

Benedict; Charles E. "Extendable Closet Organizers." U.S. Patent No. 4,585,127, filed September 25, 1984, and issued April 29, 1986.

Benedict; Charles E. "Extendable Closet Organizers." U.K. Design Patent No. 2,164,838, issued April 3, 1986

Benedict; Charles E. "Extendable Tie Rack Housing with Cover." U.S. Patent No. D280,785, filed October 12, 1984, and issued October 1, 1985.

Benedict; Charles E. "Extendable Tie Rack Housing." U.S. Patent No. D280,575, filed October 12, 1984, and issued September 17, 1985.

Benedict; Charles E. "Article Support Rack." U.S. Patent No. D280,049, filed October 12, 1984, and issued August 13, 1985.

Benedict; Charles E. "Article Support Rack." U.S. Patent No. D280,048, filed October 12, 1984, and issued August 13, 1985.

Benedict; Charles E. "Article Support Rack." U.S. Patent No. D280,047, filed October 12, 1984, and issued August 13, 1985.

Benedict; Charles E. "Article Support Rack." U.S. Patent No. D280,046, filed October 12, 1984, and issued August 13, 1985.

Benedict; Charles E. "Article Support Rack." U.S. Patent No. D280,045, filed September 12, 1984, and issued August 13, 1985.

Benedict; Charles E. "Extendable Tie Rack and Cover Therefore." U.S. Patent No. D277,436, filed December 27, 1982, and issued February 5, 1985.

Benedict; Charles E. "Extendable Tie Rack." U.S. Patent No. D277,248, filed December 27, 1982, and issued January 22, 1985.

Benedict; Charles E. "Tie Rack." U.K. Design Patent No. 1,013,691, filed December 27, 1982, and issued October 6, 1983.

Benedict; Charles E. "Tie Rack." U.K. Design Patent No. 1,013,692, filed December 27, 1982, and issued October 6, 1983.

Benedict; Charles E., Kenneth G. Kimsey, Jr. and Robert A. Freeman. "Linked Container Article Carrier." U.S. Patent No. 4,385,696, filed August 21, 1981, and issued May 31, 1983.

Benedict; Charles E. "Tie Rack." ROC Design Patent No. 7375, filed December 27, 1982.

Benedict; Charles E. "Tie Rack." ROC Design Patent No. 7376, filed December 28, 1982.

Pollock; Stephen F. and Charles E. Benedict. "Ammunition Supply System." U.S. Patent No. 4,281,583, filed January 9, 1979, and issued August 4, 1981.

Carnley, F. Paul, John Cugini, and Charles E. Benedict. "Apparatus for Orienting Articles Having an Enlarged End." U.S. Patent No. 4,261,680, filed June 6, 1979, and issued April 14, 1981.

Benedict; Charles E. "Article Handling Belt." U.S. Patent No. 4,137,821, filed May 27, 1977, and issued February 6, 1979.

Benedict; Charles E. "Loom Lay Drive Linkage." U.S. Patent No. 3,964,524, filed January 8, 1975, and issued June 22, 1976.

Benedict; Charles E. "Shuttle Drive Linkage For Looms." U.S. Patent No. 3,964,523, filed December 12, 1974, and issued June 22, 1976.

Benedict; Charles E. and Calvin C. Oliver. "Shuttle Box For Looms." U.S. Patent No. 3,901,288, filed February 11, 1974, and issued August 26, 1975.

Benedict; Charles E. and Calvin C. Oliver. "Picker Stick Drive Mechanism for Fly Shuttle Looms." U.S. Patent No. 3,901,287, filed February 11, 1974, and issued August 26, 1975.

Benedict; Charles E. and Calvin C. Oliver. "Lug Strap for Weaving Loom." U.S. Patent No. 3,900,052, filed January 15, 1974, and issued August 19, 1975.

HONORS AND AWARDS

- General Lewis Brereton Award for Significant Contributions to United States Aerospace, 1978
- Florida Engineering Society, Award for Outstanding Technical Achievement for 1977 for Florida
- Past Board of Directors, Governors Task Force on Target Industries
- Past Board of Directors, Advisory Resource Panel – Governor's Task Force on Science, Engineering and Technology Service to Industry
- Past Board of Directors, Engineering Advisory Council – University of Florida
- SAE Accident Investigation Practices Standards Committee
- Florida Engineering Society, Big Bend Chapter, Award for Outstanding Technical Achievement for 2007

REPRESENTATIVE PROJECTS

C.E. Benedict has been involved in machine design, product development, and analysis of over 5,000 accidents during his career, which has spanned more than 39 years. These accidents have involved vehicles of all kinds, equipment, machine systems, and products.

His analyses have included accident causation, safety defects, and violations of design and safety standards and codes in many areas, including machine guarding and automotive parts failures, as well as electrocutions, construction accidents, ladders, saws, loaders, conveyors, process equipment, material-handling equipment, agricultural equipment, lumber and industrial equipment, and virtually any electro-mechanical or purely mechanical equipment failures.

Since 1971, C.E. Benedict has directed the design, development, fabrication and operator-training programs for high-rate, programmable, intelligent material-handling systems, machine systems that assemble piece-parts into end-items and commercial and consumer products, as well as material-handling, textile equipment, and production, aircraft and weapons parts and sub-systems. A partial list of these products and machine systems includes:

- Streamline Flow, Mechanically Actuated High Pressure Gas Regulator – Florida Gas Transmission Company
- Nickel Cadmium Rechargeable Battery Assembly Machine – General Electric Company
- Calibrates and Sorts Spirit Glass Thermometer – Hartley Gove Sons Thermometer Company
- Sorting, Orienting, Packaging and Loading of 20mm Ammunition – General Electric Company
- Sorting, Orienting and Packaging 30mm Ammunition – Honeywell Corporation, Olin Corporation – Aerojet Corporation and Bermite Corporation
- Folding and Packaging Disposable Surgical Sheets – Proctor and Gamble Company
- High Speed Minimum Space Yarn Insertion for Weft in 12 Foot Wide Carpet Weaving Machine – Fieldcrest Mills, Inc.
- Dwell Linkage System for Needle Bar Drive on Carpet Tufting Machine – Card Company
- Heavy Kraft Bag Orienter and Feeder for End Sewing – St. Regis Paper Company
- Armor Piercing Incendiary Projectile Assembly Machine – Aerojet Ordnance Company
- Quick Disconnect/Reconnect Linkage for Aircraft Surface Control System – Fairchild Republic Company
- Disposable Surgical Scalpel Assembly Machine – Seamless Corporation
- Vehicle Towable 30mm GAU-8/A Ammunition Loading System for the A-10 Aircraft – U.S. Air Force
- Assemble Semi Pneumatic Rubber Strips into Circular Tires – Amerace Corporation
- Fly Shuttle Loom Mechanical Dwell Linkage for Shuttle Propulsion – Rockwell International
- I.V. Bag Assembly Machine – Seamless Corporation
- Disposable Pen Light Assembly Machine – Concept, Inc.
- Rechargeable NICAD Battery Assembly Machine – SAFT America
- Test Evaluation, Simulation, Analysis and Correction of Crank Shaft Failure Problems – Florida Gas Transmission Company & Natural Gas Pipeline Company of America
- Two-Man Portable (second generation) Automatic Mechanically Operated 30mm GAU-8 Ammunition Loader to Replace Original Vehicle Towable 30mm ALS – U.S. Air Force
- Sealed Lead Acid Battery Assembly Machine – General Electric Company

- Automatic Stagger Feed System for Optimizing the Utilization of Precious Metals in Stamping and Forming Processes – Englehart Industries
- Pen Top and Indent Assembly Machine – A.T. Cross Company
- Credit Card Actuated, Automated Fuel Accounting System (Self Service Fuel Stations) With On Line Computers to Central Base Accounting – U.S. Air Force
- Conceptual design and half scale prototype of Orange Tree Canopy Shaker for Fruit Harvesting – Florida Citrus Commission
- Carpet Loom Needle Drive for Quasi Dwell and Stroke Reduction – Field Crest Mills
- Material Handling System for the CVX Next Generation Aircraft Carrier – U. S. Navy
- Cargo securing, clamping stanchions for weapons, and other supplies for naval supply ships and others – U. S. Navy
- Selective Retrieval and Discharge System for Container Ships – Military Sealift Command

Product lines C.E. Benedict has developed and taken to the consumer market include:

- The Automatic Precipitator Light Control Device, UL Approved, which automatically turns on vehicle headlights when wipers are turned on and turns off lights when ignition is turned off
- The Air-Bearing Turntable with straight line tracking and a magnetically balanced turn arm for the high-end user, audiophile market
- Extendable Closet Organizers for ties, belts, scarves, skirts, slacks, shoes, folded garments, and tools. This line included a mailbox caddie and coffee filter device.
- The Door Jammer, a security device for inward swinging doors
- The Whirl Massage Showerhead
- The Rain Light Switch for Automobiles, which utilized solid state logic to pulse-actuate a mechanical latching relay switch
- A flow control device for maintaining constant output pressure over predetermined range of input responses for liquid and gas systems
- Automatic light switches for vehicles, including a super daytime running light switch, and three logic-controlled mechanical relays for vehicle lights
- A temperature-responsive fluid valve and controller for showerheads
- A pool-skimmer screen
- An exerciser for back muscles
- Three non-inertial-release buckles for vehicle restraint systems
- A cam system for varying the compression volume of internal combustion engines
- A prototype (full scale) of the Multi-Directional Overhead Conveyor System
- A permeable groyne system for reclaiming beach sand using passive methods