

**GRAY, BILLY J**

Department of Engineering Technology  
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## EDUCATION

University of Texas at Arlington

**Ph.D. in Industrial Engineering****2015**

Dissertation: The Effects of Embedding RFID Tags into Fiber Reinforced Polymers

## Abstract:

During composite manufacturing there are many problems that can occur with the material and bonding. Mechanical testing only occurs on sample parts and will not indicate problems that occur with the materials during a part's useful life. One possible solution is embedding sensors that monitor the health of the structure's integrity. This paper sets the groundwork of embedding sensors by evaluating the impact of an RFID embedded between the layers of the reinforcement materials. The expected results are that though the tag behaves as a foreign body, its impact on the material is negligible.

Texas Tech University, Lubbock, TX

**M.S. Systems and Engineering Management****2006**

Tarleton State University, Stephenville, TX

**B.S. Manufacturing Engineering Technology****2001**

## TEACHING EXPERIENCE

COURSE	Term
ENGR 2303/3303 ENGINEERING ECONOMY	FALL (10) FALL (11) SUMMER (12) FALL (12) SUMMER (13) FALL (13) SPRING (14) FALL (14)
ENGT 3336 INDUSTRIAL CONTROLS	FALL (11) SPRING (12) SPRING (13) SUMMER (13) SPRING (14) SUMMER (14) SPRING (15) SUMMER (2015)
ENGT 4356 ADVANCED CONTROLS	SPRING (15)
ENGT 3345 INDUSTRIAL DESIGN	FALL (11) FALL (12) FALL (13) FALL (14)
ENGT 4326 LINEAR PROGRAMMING AND SPREADSHEET APPLICATIONS	SPRING (11) SPRING (12) SPRING (13) SPRING (14)
ENGT 3324 THERMOPLASTICS	FALL (11) FALL (12) SPRING (13)
ENGT 3325 THERMOSETS	SPRING (15)
ENGT 1306 INTRO TO MECHANICS	SPRING (12) FALL (12) SPRING (13)

ENGT 3303 MATERIALS	SUMMER (12)
ENGT 3320 INDUSTRIAL SAFETY	FALL (10) SPRING (11)
ENGT 4386 PROBLEMS COURSE (CONTINUOUS IMPROVEMENT)	SUMMER (12)

RELATED EXPERIENCE

Tarleton State University, Stephenville, TX  
**Assistant Professor** **August 2011 – Current**  
 Responsible for Manufacturing Engineering Technology program  
 Teach coursework as assigned  
 Perform research in fields of interest  
 Interface with industrial partners to provide university and industrial services

Cobham Avionics, Mineral Wells, TX  
**Director of Operations** **May 2008 – August 2011**  
 Responsible for ~\$32M of shipments  
 Direct supervision of 3 managers, 1 supervisor, and 5 engineers  
 Ensure that the efforts of the Operations group are consistent with and supportive of the company goals  
 Responsible for integrating all products from secondary facilities into the Mineral Wells facility  
 Responsible for budgetary requirements of the Operations group  
 Responsible for supply chain initiatives and vendor negotiations  
 Responsible for FAA repair station. Increased throughput of the repair station by 20% and brought group into compliance with FAA standards  
 Responsible for performing functions from previous positions

Cobham Avionics, Mineral Wells, TX  
**Director of Autopilot Engineering** **September 2009 – January 2010**  
 Responsible for sustaining engineering activities including mechanical and electrical engineering disciplines  
 Transferred engineering activities from sister sites to S-TEC

Cobham Avionics, Mineral Wells, TX  
**Manufacturing Manager** **May 2007 – May 2008**  
 Responsible for ~\$29M of shipments  
 Direct supervision of 10 engineers and 3 supervisors  
 Helped develop Operations scorecard  
 Responsible for all material activities including procurement, planning, and shipping  
 Responsible for development of autopilot test equipment

Meggitt Avionics, Mineral Wells, TX  
**Manufacturing Engineering Supervisor** **January 2004 – May 2007**  
 Supervised a team of 5 engineers and 4 sheet metal and paint shop employees  
 Provided insight of manufacturability of products to engineering disciplines  
 Identified and implemented metrics to better monitor quality, costs, and delivery on production lines  
 Helped develop Kan-Ban systems for production lines and material control locations

Meggitt Avionics, Mineral Wells, TX  
**Manufacturing Engineer** **April 2002 – January 2004**  
 Responsible for direct engineering support of production lines  
 Responsible for implementing process improvements in the operations area  
 Reduced production floor space by 40%  
 Doubled capacity of standard servo line  
 Helped develop method for identifying and tracking cost reductions  
 Developed standard work methods for assembly  
 Responsible for implementation of new products into production

## PUBLICATIONS AND PAPERS

## REFEREED JOURNAL ARTICLES IN-PRINT

Balasubramanian, S.; Jones, E.C.; Gray, B.; Armstrong, H.; Samdurkar, R. "Critical factors for Six Sigma success utilizing Statistical Process Control." *Strategic Management Quarterly*, 3(1), 49-70.

Jones, Erick C.; Weatherton, Yvette Pearson; Gray, Billy; Armstrong, Harrison. "A Framework for Detecting Hazardous Events Occurring in Transit with AutoID Technologies." *IEEE Sensors Journal*, 14 (9), 3124-3130.

Gray, B., Jones, E., Weatherton, Y., Sunarto-Bussey, R., & Armstrong, H. (2013). Utilizing Pipeline Quality and Facility Sustainability to Optimize Crude Oil Supply Chains. *International Journal of Supply Chain Management*, 2(2).

Gray, B., Jones, E., Alvarez, C. , & Mulflur, W. (2013). The Impact on Inventory with the Implementation of RFID into SCOR based ERP Modules. *International Journal of Supply Chain Management*, 2(2).

## BOOKS EDITED

Jones, E. C. Jones, and Armstrong, H.A.; Edited by Billy Gray "The Six Sigma Trap,What you should know about Six Sigma that your company is not telling you: The Official ISCEA CLSSYB Certification Book" PWD Group, May 2014 (Non-Academic Text).

## BOOKS AUTHORED

Jones, E. C., Gray, B., & Armstrong, H. "Tracked, What You Should Know About Invisible Inventory Monitoring and Security, The Official RFIDSCP Certification Handbook" PWD Group, June 2014 (Non-Academic Text).

## CONFERENCE PRESENTATIONS

Fragoso-Diaz, Margarita; Gray, Billy; Jones; Erick C.. "Enhancing Students' Learning Experience Using Case Studies." ASEE Annual Conference 2015. June 14-17, Seattle, WA.

Gray, Billy; and Jones, Erick C.. "Life Cycle Costs of Embedded Electronics in Composite Materials." International Systems Engineering Research Conference (ISERC) 2015, May 30-June 2, Nashville, TN.

Gray, Billy; Fragoso-Diaz, Margarita; and Jones, Erick. C.. "The Use of Videos as a Tool to Reinforce Engineering Economy Course Topics: Lessons Learned." ASEE Annual Conference 2014, June 14-16, Indianapolis, IN.

Gray, Billy; Mulflur, Walter; and Jones, Erick. C.. "Burden Vehicles for Engineering Projects." International Systems Engineering Research Conference (ISERC) 2014, May 30-June 3, Montreal, Canada.

## MEMBERSHIPS

American Society of Engineering Educators  
Institute of Industrial Engineers

## ACCREDITATIONS

Certified Lean Six Sigma Yellow Belt (CLSSYB) – 2013  
Qualified Lean Six Sigma Master Black Belt (QLSSMBB) - 2014

## AWARDS

Graduate Assistance in Areas of National Need (GAANN) Fellowship -2013/2015  
Tarleton State University Distinguished Alumni Award 2010