Iowa-Nebraska IASIU – 2012 Training Seminar – Presentation Brief

FIGHTING FRAUD WITH BIOMECHANICS

An accident happens. Injuries are claimed. But did the accident cause the injuries? The answer to that question can have a significant impact on resolution of claims. SIU investigators deal with bodily injury claims every day resulting from vehicle collisions, slips & falls and industrial accidents. In some cases, the description of loss does not account for the claimed injuries.

This workshop describes the step-by-step methods used by biomechanical engineers to assess injury causation. Based on a combination of structural mechanics and biology, the biomechanical engineer ascertains the body motions of the claimant during the incident, defines the mechanisms for the claimed injuries, and determines whether the incident event created the injury mechanisms that could have caused these injuries. The science of biomechanics is emerging as an effective tool to repeatedly dispute fraudulent claims.

This interactive presentation including video footage will explore the various aspects of low speed rear impacts including an examination of accident reconstruction, vehicle design and Biomechanics in this type of crash. Human tolerance as it relates to accelerations, direction of force, and head restraints will be discussed. Case studies, crash tests, and medical literature will be reviewed to form the basis for what injuries are consistent with low speed impact, and why certain claimed injuries may not be related to the mishap. Commonly claimed injuries that will be discussed include tempomandibular joint syndrome, lumbar intervertebral disc herniation, upper extremity, lower extremity and neck trauma.

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Mr. Markushewski earned a B.S. in Mechanical Engineering Technology from Philadelphia's Spring Garden College and attended Pennsylvania State University for graduate courses in Engineering Science. Mr. Markushewski is highly qualified as a crashworthiness engineer. He has established a distinctive career in the field of crashworthiness, occupant crash protection, emergency escape, crash safety and survival, and life support engineering.

Mr. Markushewski's extensive experience focuses on research, design, test and evaluation of aircraft and vehicular seating systems, restraint systems, inflatable restraints, ejection seats, crashworthy seating systems and protective devices. As a result of demonstrated leadership in this area, he has held the positions of project engineer, team leader, systems engineer and project manager of significant occupant protection system design, development and test programs responsible for project progress from inception through completion. He has prepared and established program and hardware technical and performance specifications and manuals for many programs.

Mr. Markushewski has acted, and currently acts as lead investigator and mishap reconstructionist for military and civilian aircraft and automotive ground vehicle mishaps to evaluate occupant protection system performance and evaluate and determine mechanisms of injury.

Because of his experience and knowledge in the occupant crash protection area, Mr. Markushewski has been designated as a Subject Matter Expert (SME) on seating and restraint system design and performance by the United States Army. As a result of his in-depth knowledge and experience, Mr. Markushewski is a recognized leader in the field of crashworthiness and occupant protection. Mr. Markushewski currently holds the position of Vice President of Engineering.