

As President of Reel Research and Development, Inc. myself and my colleagues wish to respond to a classroom study submitted for publication by Messer's Studer M.D., Grubb, BS, Horn MD and Danielson MD ***"Evaluation of Commercially Available Traction Splints for Battlefield use"***. As one of the traction products included in this study, the Reel Splint System (RS) NSN 6515-01-250-8936 we feel compelled to respond to its findings, especially in regards to the (RS) including:

- **IN PRACTICALITY, WE AGREE, THAT THE RS WAS NOT DESIGNED SPECIFICALLY FOR USE IN "DISMOUNTED CARRY" OPERATIONS AS DEFINED BY THE AUTHORS.**
- **THE UNIVERALLY APPLICABLE RS SHOULD NOT HAVE BEEN INCLUDED IN A NARROWLY FOCUSED DISMOUNTED TRACTION STUDY; EMPLOYING A "TRACTION" MANIKIN" IN A CLASSROOM SETTING TO POSTULATE FIELD RESULTS.**
- **STUDIES AND STANDARDIZATION OF RS HAS TAKEN PLACE CONTRARY TO AUTHOR'S ASSERTIONS; THOSE DIRECTLY RELATED TO MILITARY MEDICINE.**
- **THE AUTHORS MAKE UNSUPPORTED FINDINGS REGARDING THE USE AND EFFICACY OF THE RS FOR DIFFICULT "ANGULATED BONE AND JOINT IMMOBILIZATION"... CALLING FOR REPLACEMENT USING ALUMINUM MALLEABLE SPLINTS. (SAM SPLINT)**
- **THE AUTHORS MAKE A BROAD AND "OUTSIDE THE SCOPE OF STUDY" RECOMMENDATION THAT THE RS SHOULD BE ENTIRELY REMOVED FROM MILITARY SERVICE, BECAUSE THE RS HAS "PERSISTED TOO LONG" ...**
- **RS IS CLINICALLY PROVEN FOR DESIGNATED AREAS OF INCLUSION: AUTHORS SHOULD RETRACT ANY UNSUPPORTED HYPOTHESIS OF THE RS EFFICACY OUTSIDE THE STUDIES CONFINES OF EVALUATION.-**

Initially, the authors describe the Army's traction splint posture as having "little training or standardization" and that "No previous studies have evaluated these devices and their suitability to the Military environment." This statement is not accurate. The Defense Medical Standardization Board (DMSB) Ft. Detrick "STANDARDIZED" the RS for DEPMEDS (Deployable Medical Systems) and the US Army commissioned an examination authorized by AMEDD. The Field Training Exercises (FTX) testing was overseen by the Combat Developer's office (CD) and included the Combat Medical Specialists Division (CMSD) Alpha and Bravo Medics at Ft. Sam Houston, Texas. (Disposition/After action reports are available for view at www.splints.com) It was concluded in field trials, the RS was well suited for many Military care scenarios. Additionally, the RS would replace many other less effective splints, system wide, reducing the overall size, weight and cube. However, conclusions regarding "line medic" (dismount operations) stated the RS may NOT be particularly useful for "line medics to carry" as being "heavy and bulky for the Medic who has limited space." This was and continues to be our company's position. Given the subject matter of the study being "dismounted operations"; we logically wonder why the RS was included in a narrowly focused Battlefield traction product evaluation. Perhaps had the authors contacted us for background, or reviewed our web site, it would have been clear the RS was not suited to the studies criteria. Note: the other (3) three tested products were all single pole style traction devices, not comparable in design to the more UNIVERSAL traction and angulated Immobilization product (RS).

The authors offer a set of completely unsupported assertions comprising vastly different care areas, clearly outside the scope of their study. One such conclusion; The RS could be overall "replicated" by the aluminum malleable Sam Splint now carried in various trauma sets. The authors offer no pertinent or actionable clinical evidence to support such an assertion. Those possessing experience in field Medicine, specifically lower extremity angulated bone and joint trauma, appreciate these injuries comprise a separately distinct, comprehensive and challenging area of patient care. Military medicine involves a plethora of traumatic injuries occurring in war and peacetime settings.

Often, lower extremity injuries must be completely stabilized as encountered, preserving limb patency while addressing the prevention of costly and debilitating limb morbidity. We believe the SAM is a great splint for many reasons; but concluding out of hand, absent any clinical support/evidence, the SAM to be an equivalent to the RS is patently absurd. The RS has been extensively evaluated and clinically proven THE most reliable and robust articulation device for these critical and important areas of lower extremity care. The authors fail to appreciate, the findings of a significant patient study in the "Annals of Emergency Medicine." This two year referenced field study was conducted by the University of California, San Francisco School of Medicine. This study presented 53 "real" patient cases, only 11 of which involved traction. Of special note: A significant 42 other cases involved many other types of injuries, including difficult joint dislocations and angulated fractures. The very first prototype RS splint performed exceedingly well in this "Scientific" study. (Subsequent commercial models have proven even better performers). We know of no credible information/studies regarding angulated lower extremity care, using malleable aluminum sheet padded splints; specifically, as they would compare to RS performance. A.J. Heightman, editor of JEMS (Journal of Emergency Medical Services) authored an important article/expose' discussing his views on the RS specific to severe joint and fracture immobilization (ARTICULATING KNEE INJURIES). The article states the RS is the "PERFECT SPLINT FOR THE TASK" stating: *"I have discovered an articulating splint that's PERFECT for the immobilization of severely dislocated and fractured bone and joints" (RS) and "the (RS) can be adjusted or molded to almost any fracture or dislocation angle". "The (RS) provides ease of movement and support straps allow for wound treatment and visualization".* He further states: The SAM and adjustable Air and Vacuum splints may not be useful because *"Conventional splints may not adequately immobilize or support the injury, above and below the joint, being even more difficult, "when the knee is rotated."* Shouldn't the question arise as to when and where is it appropriate to use proven care modalities for Military care situations; especially when these injuries represent not just the 2% of traction applications, but importantly the other 98% of lower extremity traumatic injuries? We believe the RS has demonstrated it positively addresses an entire distinct and separate area of clinical evaluation.

The authors take a broad leap of faith by suggesting the RS should be removed from "Military Service" entirely. **BASING SUCH COMMENTS ON A STUDY IN WHICH THERE IS SUCH A HIGH RATE OF FAILURE WHEN ATTEMPTING TO APPLY THE SPLINT AND "generalized poor performance and overall low confidence (OF THE PARTICIPANTS) with traction splinting" IS NOT SOUND.** We believe products such as the RS "persist" (or ENDURE) "too long" (or over time) because they perform as advertised; until or unless they are supplanted by a superior device. We see NO evidence supporting a broad postulation pertaining to Military care in its TOTALITY. The authors cite no clinical and/or scientific evidence in doing so. The fact is, the RS has, and continues documenting scores of clinical cases, while garnering hundreds of testimonials of efficacy in a variety of operational care situations. Patients continue to benefit significantly from the RS in Military and Civilian EMS. Original Army studies underscore the broad scope of use the author's seem to ignore or dismiss, that the RS is well suited (and remains so) in most described BAS, DTS and MEDIVAC type operations and was therefore recommended for purchase. We believe, as US Military and other studies demonstrate, the UNIVERSAL RS continues to have many important roles in Army and Civilian lower extremity care scenarios.

Other items caught our attention. As the presented advantages and disadvantages chart reveals, KTD accurately depicts their product as a traction "DEVICE" while underscoring other "splinting materials may be required". We surmise the same for other similar "pole devices" as the CT-6 and STS. Obvious and pertinent questions arise: What other splinting materials would be needed to be brought forward to completely stabilize the limb? How much do they weigh? How bulky are they and what would they cost? Would any such scenarios even be practical within the narrow scope of "Dismounted Operations"? Additionally we've seen no evidence of pelvic problems cited for traction with the RS.

Three (3) unique design features that were not noticed or discussed as improvements over the more antiquated HARE style traction “splint” are: The highly contoured ISCHIAL pad, Pivoting Ischial fit and minimal five (5) degree Position of Function knee flexion. The flexion feature completely addresses Peroneal Nerve issues (a superficial nerve located at the area of the Proximal Fibula) as well as improving Popliteal Artery function. In regards to the Peroneal Nerve, it’s telling that the majority of EMS providers can’t identify the nerve or its location. As it is important in traction applications, the nerve is even more consequential in the managing of all angulated type fractures and dislocations which can greatly effect morbidity and Return to Duty issues. In terms of training and ease of use, the DMSB results underscore that the RS requires “little instruction time” and “ease of application as the patient lays.”

Military Medicine is certainly complex in many areas and involves many unique care challenges. It stands to reason; specific products are more suitable for different care situations. We should learn more to appreciate that grossly angulated injuries represent unique and important facets of lower extremity care, those pertaining greatly to COSTLY AND DEBILITATING patient morbidity. Additionally, discussion regarding traction applications should include, where and when it is appropriate or necessary to use more supportive traction “SPLINTS” (RS) that “provide a high degree of immobilization” vs. lesser supportive “DEVICES” that “may” require ancillary splinting equipment. We believe uniquely postured products such as the “UNIVERSAL” RS are clinically proven to be better suited for a variety of lower extremity joint and bone angulations and femur traction cases as well.

Adherence to study parameters is vitally important to any practical well defined product review and comparison; as a Call to Action, please join us in our pursuit for clinically based patient evaluations in any of the important areas sited in this response. Wandering from stated parameters, then drawing conclusions not grounded in DEFINED study parameters and goals can be dangerous, negatively affecting DEMONSTRATED patient care in a variety of Military settings outside the realm of “Dismounted” Field Medicine alone.

We would like to thank the authors and appreciate their efforts in exploring this important discussion. We also would respectfully ask that any unsupported, unfounded or broad based non evidenced conclusions, regarding long standing patient care, be reconsidered or retracted, even if only “opinion” as stated. We also would like to thank the publishers for an opportunity for response with our rebuttal position.

Roger Lee