



Tactical Casualty Movement – An Evaluation

Patient transport is a routine function of EMS and there are a wide variety of tools available on the market ranging from \$20 carry sheets to \$000's Power Cots. As military teachings from the TCCC course is finding wider acceptance in the civilian medical and law enforcement communities (McSwain NE, 1999) Tactical Emergency Casualty Care (TECC) has evolved. In both TCCC & TECC it is widely recognized that there will become the need to move a casualty from the 'Hot Zone' or 'Area of Direct Threat' to a safer location. While in some cases the casualty will be able to move themselves, it is likely that the casualty will need to be moved by rescuers.

TECC Guidelines, published by the Committee for Tactical Emergency Casualty Care directs rescuers to *"Prevent any casualty from sustaining additional injuries"* and *"Keep response team maximally engaged in neutralizing the existing threat"* (Committee for Tactical Emergency Casualty Care, 2015). For many Response teams the question remains, how do we keep as many operators engaged, recognizing that these situations are dynamic and require continuous threat assessment and have a tactically feasible method for casualty movement and extraction?

To that end, a group of rescuers with diverse backgrounds from Australian Police, French Foreign Legion and British Military, were tasked to evaluate three 'Tactical Stretchers' from three different manufactures to determine the suitability of the stretchers to the TECC and TCCC environment.

The stretchers were assessed over a number of tasks, 1. The ease of use and deployment; 2. Their ability to move the casualty over a verity of terrain and 3. Ability to protect the casualty and minimize the chance of them sustaining further injury during movement.

Equipment

The stretchers used in this evaluation were

1. Sked – from SkedCo, recognized in the industry and is standard for many services (17lbs / 7.7kgs).
2. Foxtrot – from TMS, Small and lightweight plastic stretcher (4.8lbs / 2.2kgs)
3. XtractSR – From TSG, Small and lightweight, plastic and fabric stretcher (6lbs / 2.9 kgs)

Each participant was briefed on the use of all three stretchers in the class room with approximately the same time spent on each stretcher; participants had time in the classroom to have hands on the stretchers and ask questions. The participants were then taken outside and the three stretchers were evaluated.

A volunteer participant was used as a 'casualty' and loaded, into the stretcher they were then dragged for 200m and picked up and carried for 200m. A level of urgency was instilled into the participants to treat the exercise as a 'real' casualty evacuation from an exposed location.



Preparation



Loading



Moving

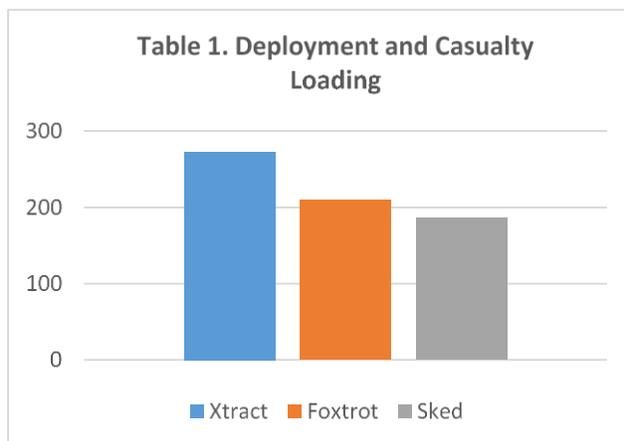
Evaluation 1

Ease of equipment deployment and loading the casualty.

- a. The Xtract SR was considered the easiest to deploy and fastest to load in multiple roles. This was due to the combination of size, weight and carrier.
- b. The casualties reported that they felt the most secure in the Xtract SR.
- c. The Sked was large and cumbersome.



Photo 1 Sked being loaded



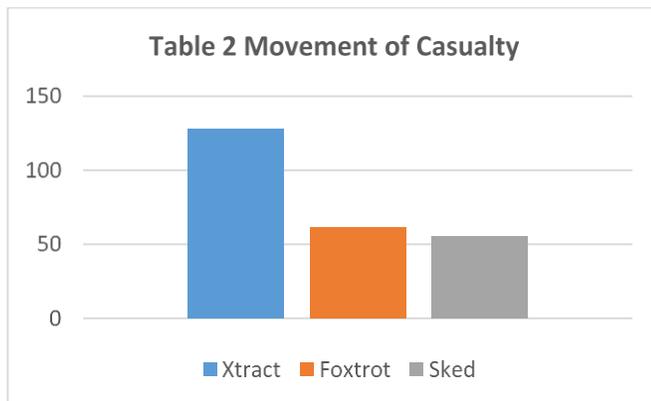
Evaluation 2

Casualty Movement – 200m drag followed by 200m Carry

- The Foxtrot trial had to stop twice, due to the casualty's being unstable.
- The Sked casualty "my C-spine was unstable, during drag. Chin to chest, lift caused head down position".
- All stretchers were easily carried with the Xtract SR allowing an easy hands-free drag or carry for the front operators.



Photo 2 Xtract SR drag



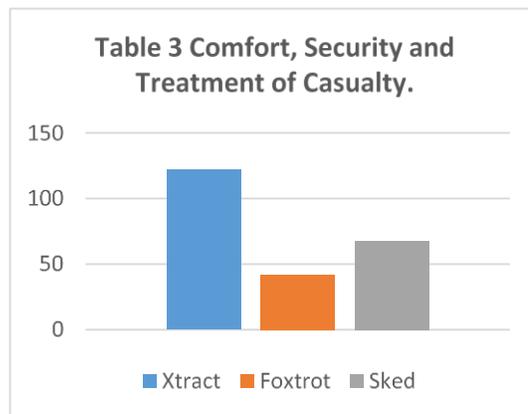
Evaluation 3

Comfort and security of the simulated casualty.

- The casualty for the Xtract SR said that, "it was very comfortable below me".
- Access to the casualty for treatment was scored at: 86% Xtract SR; 46% Foxtrot; 57% Sked.
- The casualty scored the Foxtrot felt "Very Insecure", "low comfort" and injury site and casualty were "Exposed".



Photo 3 Foxtrot drag

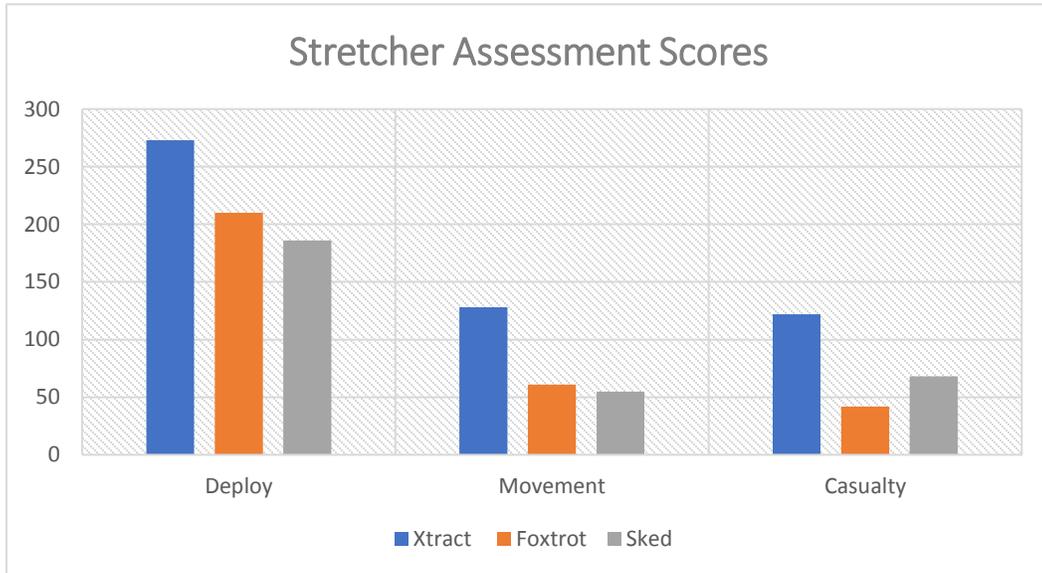


Summary Feedback

The Xtract SR was found to be the fastest, easiest and most robust between the three products. The casualty felt comfortable and secure. Two participants were able to easily move the casualty by dragging. Whether dragging or carrying the lead two participants were hands free, allowing them to maintain situation security.

The Foxtrot to drag took all four participants resulting in a compromising casualty position. It was found to be uncomfortable and unstable for the casualty. The casualty felt exposed and unprotected.

The Sked unpacked was cumbersome, time consuming to unpack and load the casualty. It protected the casualty well whilst being moved, however the casualty's position was compromised.



References:

Committee for Tactical Emergency Casualty Care. 2015. *Tactical Emergency Casualty Care*. s.l. : <http://www.c-tecc.org/resources>, 2015.

McSwain NE, Frame S, Paturas JL. 1999. *Prehospital trauma life support manual. 4th ed.* s.l. : Mosby, 1999.