FEEDBACK TO THE FIELD (FT2F) #11:  
*Application of the Combat Application Tourniquet (CAT)*

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BACKGROUND:

• The *Combat Application Tourniquet (CAT)* is the most commonly carried and used tourniquet in the US military

• A recent review published in *Military Medicine* prompted an analysis of data being collected by AFMES/DMMPO on tourniquet application in the field. These data are based on tourniquets recovered from deceased service members autopsied by AFMES at Dover AFB

This study focuses on the routing of the CAT friction band through its buckle. The friction band can be routed through one slit or both slits of the buckle.

- Recommended routing depends upon: (1) application (one handed or two handed) and (2) placement of the tourniquet (upper or lower extremity).
Friction band routing through the CAT buckle: 3 possibilities...

1 Slit (Inside)  
1 Slit (Outside)  
2 Slits
Manufacturer ships the CAT with the friction band routed through one slit (Inside)
- This is called the “ready to go” position
Single slit routing is used with *one-handed application* in the *upper extremity*.

“Ready to go”

(CAT Packaging Insert)
Double slit routing is used with two-handed applications.

Lower extremity applications should always have two slit routing. Single slit routing is only acceptable in the upper extremities.
CASE SERIES:

A review of 100 CAT placements evaluated the routing of the friction band through the buckle:

- 34 (34%) were upper extremity
- 66 (66%) were lower extremity
### RESULTS: BY EXTREMEITY LOCATION

<table>
<thead>
<tr>
<th>Location</th>
<th>Single Slit Routing</th>
<th>Double Slit Routing</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Extremity</td>
<td>18</td>
<td>16</td>
<td>34</td>
</tr>
<tr>
<td>Lower Extremity</td>
<td><strong>23</strong></td>
<td><strong>43</strong></td>
<td>66</td>
</tr>
<tr>
<td>Total:</td>
<td>41</td>
<td>59</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
**RESULTS: SINGLE SLIT ROUTING PATTERN**

<table>
<thead>
<tr>
<th>Location</th>
<th>Single Slit INSIDE</th>
<th>Single Slit OUTSIDE</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Extremity</td>
<td>11</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>Lower Extremity</td>
<td>16</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Total:</td>
<td>27</td>
<td>14</td>
<td>41</td>
</tr>
</tbody>
</table>
DOUBLe Slit ROUTING:
• “Routing through both openings is indicated in lower extremity use…”
• “This double-routing also keeps the band from slipping when more torque is required in use on the thigh.”

SUMMARY:

• Based on this sample of CAT usage, single slit routing was found in 23 of 66 (35%) of lower extremity applications.

• In 7 of these 66 (11%) lower extremity applications, routing was through the outside slit, preventing double slit use.
DMMPO RECOMMENDATIONS / ACTIONS:

• Services should review tourniquet training techniques & procedures
• Studies of tourniquet applications should be continued

NOTES of CAUTION:

• The clinical circumstances and details surrounding emergency treatment in these cases is unknown
• This presentation makes no association between tourniquet application and outcome of treatment
NOTES of CAUTION:

• The clinical circumstances and details surrounding emergency treatment in these cases is unknown

• This presentation makes no association between device placement and outcome of treatment

• This case series is drawn from cases with fatal injuries, which may skew data

"Source: Armed Forces Medical Examiner System and DHA Medical Logistics Division"
For FT2F Comments / Questions / Requests:
Contact the Armed Forces Medical Examiner System (AFMES)

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