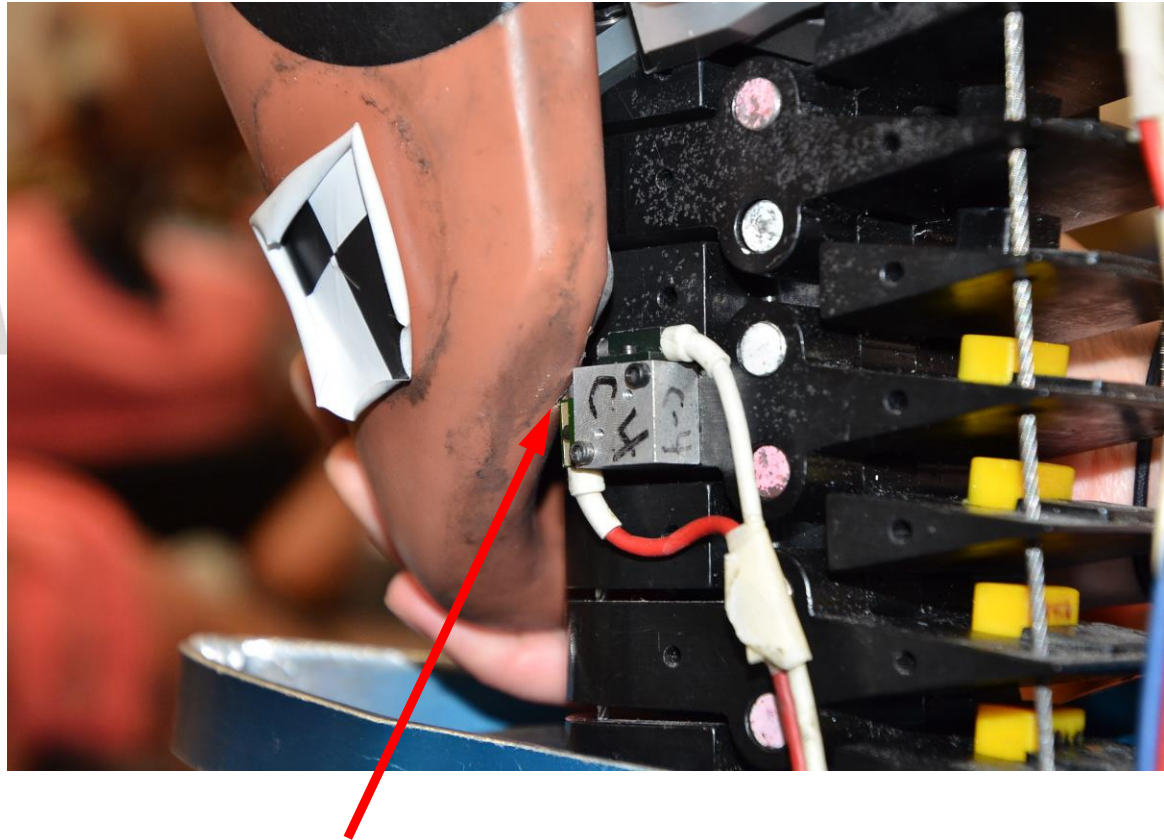
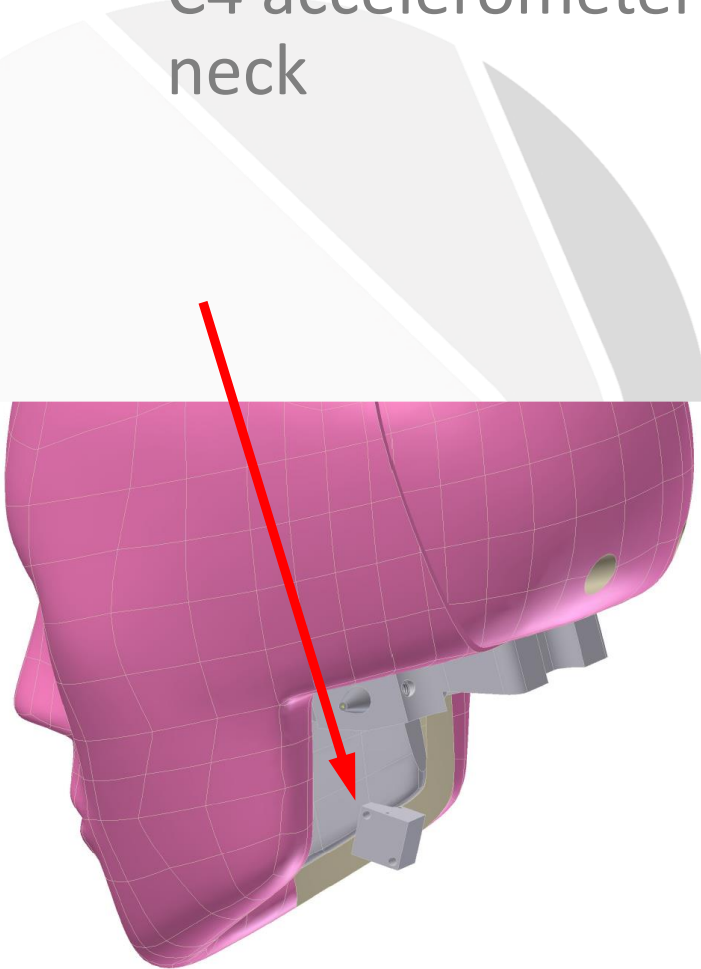




BioRID II C4 Issue for GTR7 TEG meeting September 12, 2019

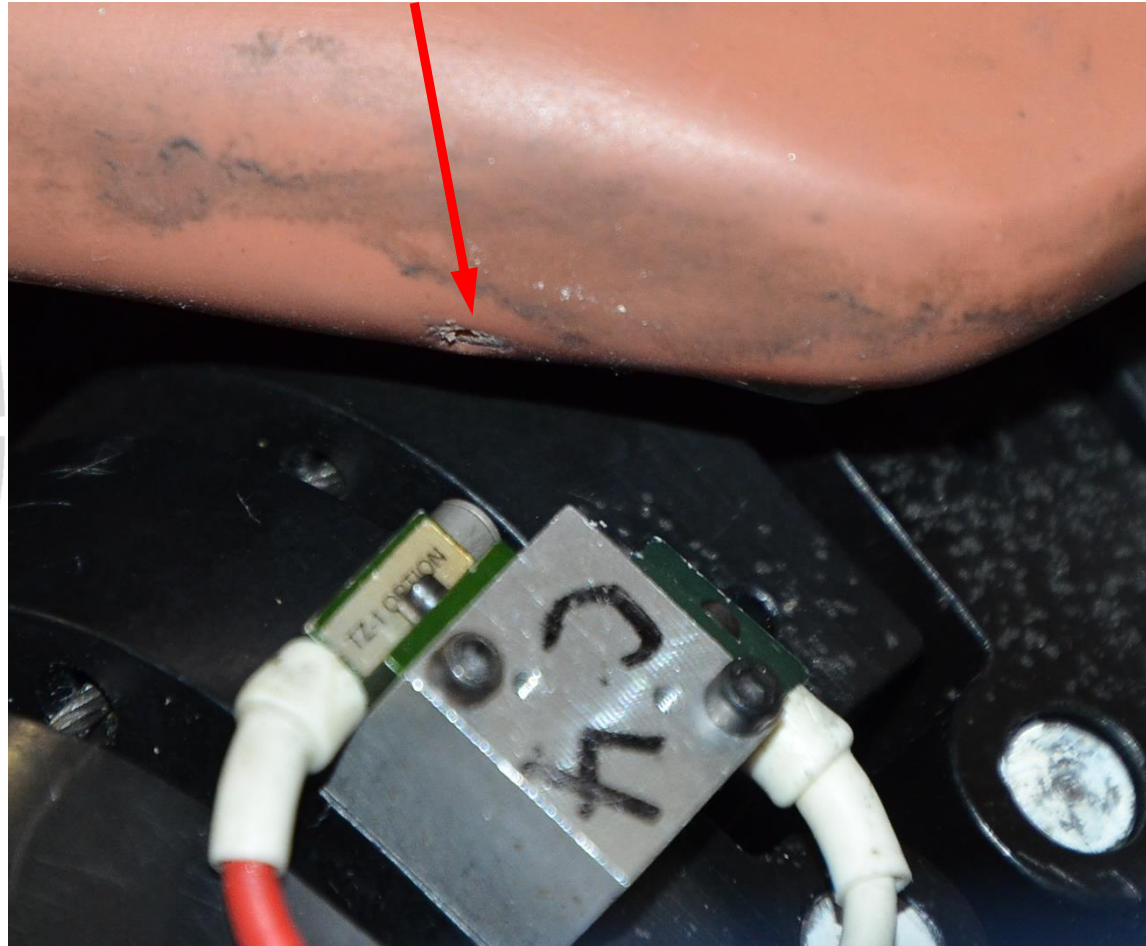
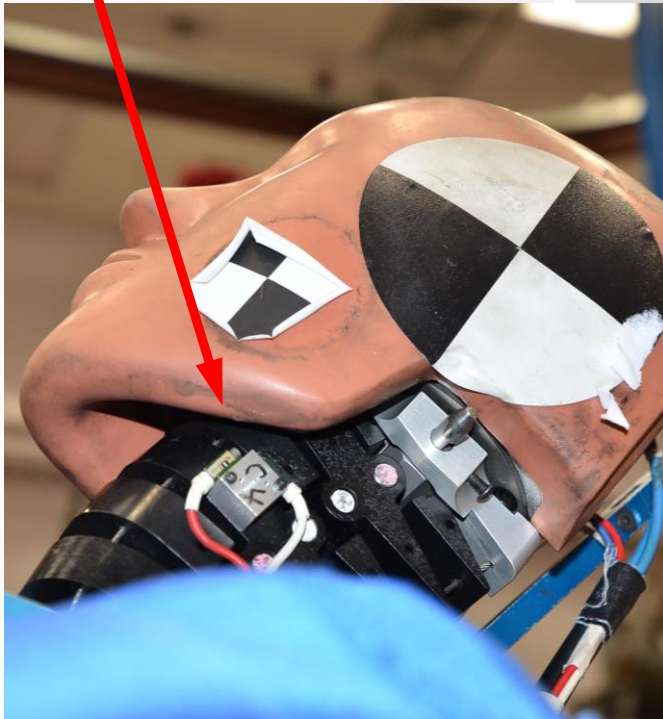
Issue – C4 Accelerometer Mount

- Sufficient Flexion is possible for the chin to hit the C4 accelerometer or mount on either side of the neck



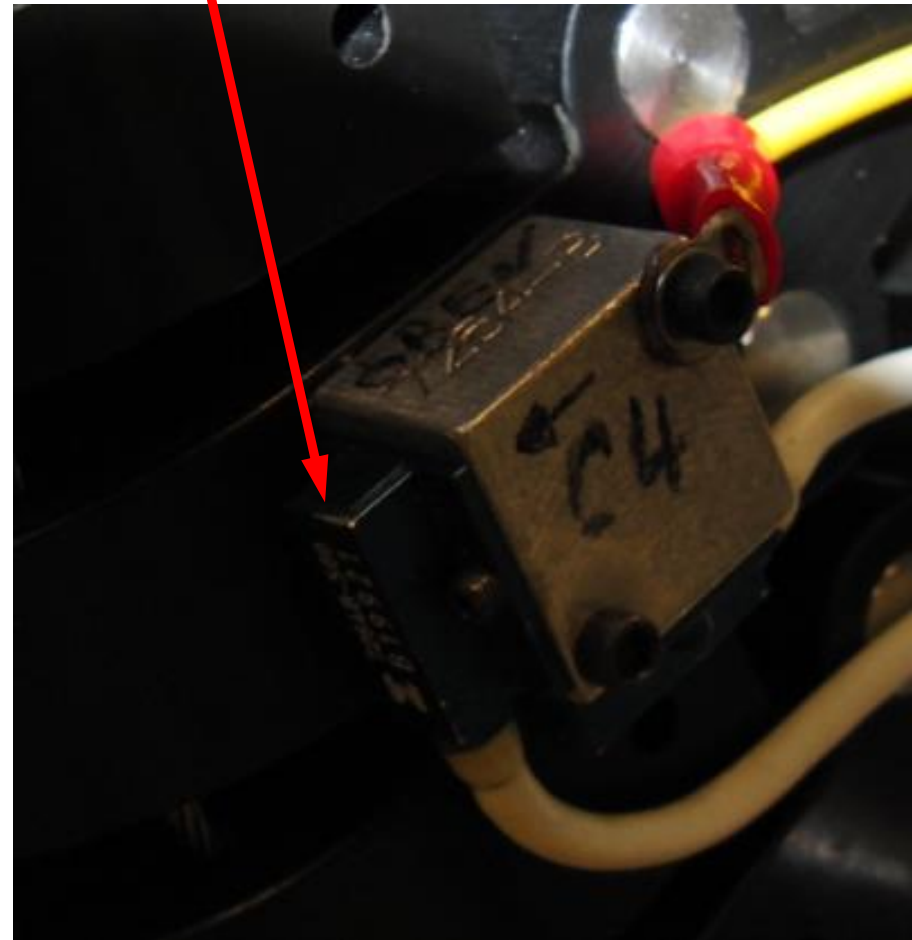
Issue – C4 Accelerometer Mount

- We have observed witness marks on multiple customer dummies showing contact has occurred during testing.



Issue – C4 Accelerometer Mount

- We have seen
 - damage to skin as in the previous pictures.
 - damage to the aluminum skull
 - Anodize scuffed off of accelerometers (shown here)





Issue – C4 Accelerometer Mount

- Why do we care?
 - Chin to C4 contact creates a load path around the upper neck load cell
 - This makes all upper neck loads invalid and meaningless!
 - » ***It is impossible to determine the real upper neck load values when this occurs!***
- We do not know how often this occurs, but when it does upper neck loads are invalid
 - It is probably not an abrupt enough change to determine that it has occurred from the data

Recommendation

- For several years Humanetics has been recommending to remove the C4 accelerometer mount from all testing.

| BioRID II Design Checklist | | ✓ |
|--|---|---|
|  | <p>VERIFY S1 IS PRESENT, WHICH USES A LUMBAR LOAD CELL OR STRUCTURAL REPLACEMENT TO IMPROVE DURABILITY AND INTERCHANGABILITY.</p> <p>REFER TO GTR DWG # ARA-562 GLOBAL, REFER TO GTR DWG # ARA-564 GLOBAL REFER TO GTR DWG # ARA-200 K10, AND PADI SECTION 5.2.4</p> | |
|  | <p>Remove C4 Accelerometer and mount. This will cause a load path around upper neck load cell and produce erroneous results.</p> | |

Request

- Can we get a formal declaration from the GTR7 TEG to
 - 1) Recommend the C4 accelerometer mount be removed from all UN dummies and that it never be used in any testing
 - 2) Update the MR1 documentation to remove
 - » Remove references to the C4 mount being available
 - » Explicitly warn to never install or use a C4 accelerometer mount on a dummy
 - › Maybe have a footnote to the formal decision in this meeting and why it should not be used

Questions?

For additional information after meeting,
contact Paul Depinet
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