

Background info on airborne ops

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To: Anthony Gonzales <Anthony@fitguard.me>;

Anthony,

Great to talk with you today -- really looking forward to getting some of the mouth guards into the field.

As we discussed on the phone, here is a brief summary of what a Paratrooper experiences during an airborne operation and where we hope the mouth guard can help us out:

10 minutes prior to exiting the aircraft the Paratroopers begin their final preparations. Right before this point they will put on their mouth guards. To exit the aircraft -- for most airborne operations -- the Paratroopers will jump out of one of the aircraft's side doors. This exposes them to 130mph (speed of the aircraft) plus winds, which I think will likely register on device.

After approximately 6 seconds in the air the parachute will be fully deployed. The initial shock of the parachute opening is not severe; however, it may register on the device. The Paratrooper will weigh approximately 250lbs with full combat gear and descend to the ground at 16-18 feet per second. After about 20 seconds, the paratrooper will hit the ground. Ideally he will land with his feet hitting first and fall to either side with their head never hitting the ground. Oftentimes, however, the back or sides of the Paratroopers helmet will strike the ground -- sometimes pretty hard.

What we hope the mouth guard will do for us is be able to record the blow to the Paratrooper's head during landing as this is the most significant risk of injury. It's fine if the device records data from earlier or later in the jump, but we'll need to be able to distinguish the data. I think a time breakdown would be most helpful.

After the Paratrooper hits the ground he will gather up his equipment and move to his assembly area (predetermined, team-specific location). There will be multiple assembly areas on any given drop zone (large field, multiple square kilometers large). Once at the assembly area the Paratrooper reports to his superiors who record that he's there -- this is the first opportunity to transfer the data. Once enough Paratroopers have reached the assembly area, the team will move out on its mission. In training, this could mean anything from getting on a bus to go back to base (where we could collect the data easily) to 7 plus days of field training (which might present some challenges for data collection). The ultimate goal is to have some way to see if a Paratrooper hit too hard within a few hours, so the medics can use that data as part of their triage process in determining whether the Paratrooper can continue the mission.

I've included some youtube links of exits and landings that I think will give you a good idea of what it looks like.

https://www.youtube.com/watch?v=GZqfN_XzKg4 (old, but it has some good views of exits)

<https://www.youtube.com/watch?v=vuVD7HMqjck> (the first landing is a good view; then the go-pro at the

end is a good example of a full jump.)

Thanks again.

V/R,

Ben

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