



Field Study on Operational Drone Delivery of Freeze-Dried Plasma and Blood Products in Ukraine

FST | RED RIVER | UKRAINE

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Operational Need

- Large extended kill zone under constant enemy surveillance
- Inability to evacuate the wounded quickly
- High need for prolonged care at the point of injury following drone strikes
- High need for blood and blood components in the first hours after injury



What answers were we looking for?

1. How can we quickly train a large number of people to transfuse lyophilized plasma and deliver it?
2. How can we safely deliver lyophilized plasma without damaging it?

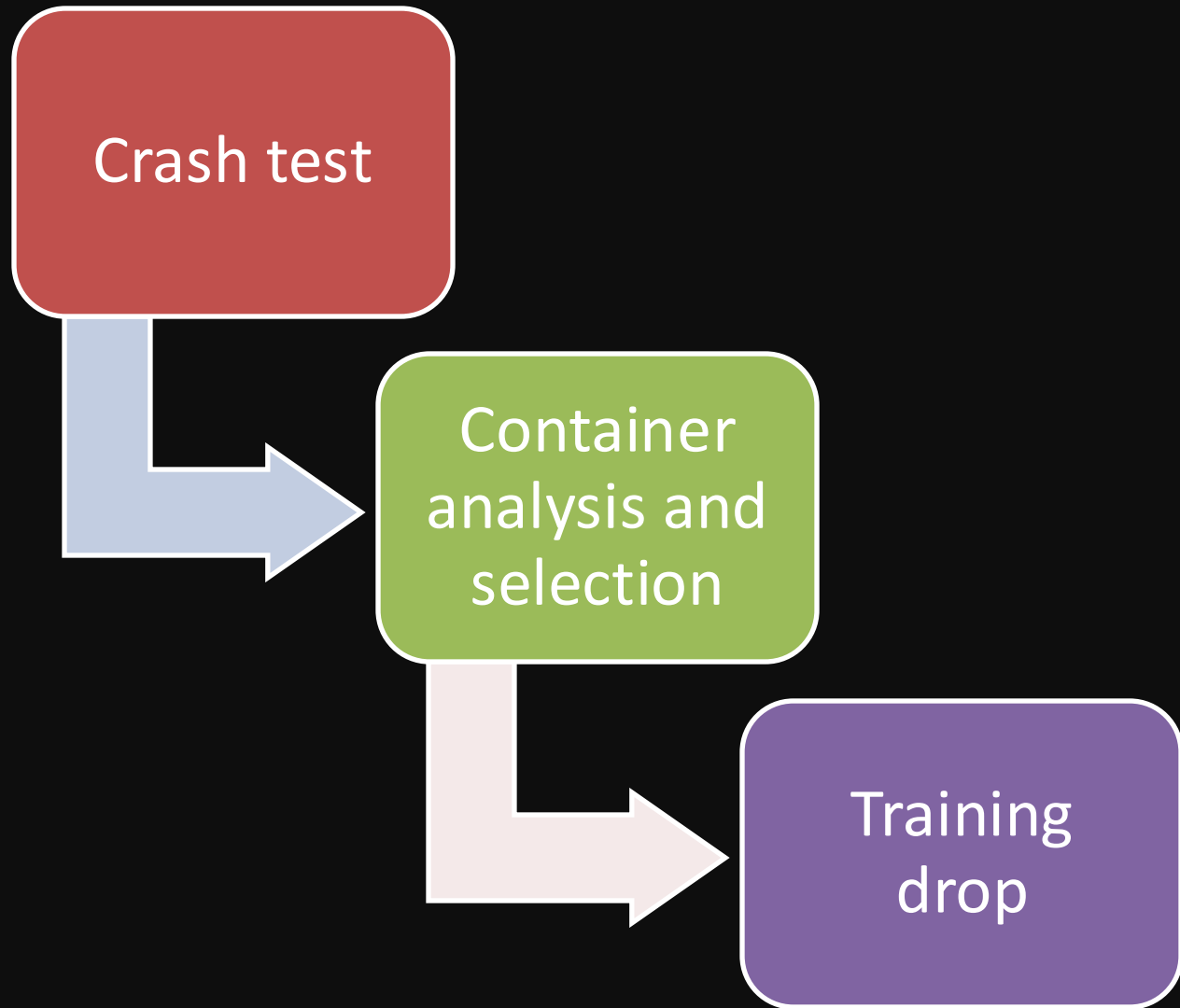


Donation from Octapharma®

About six months ago, our unit received a donation from Octapharma® in the form of octaplasLG®. This is the plasma we used for delivery and for treatment of our wounded personnel.

However, the product came in glass bottles, and we were concerned that it could be damaged or destroyed during delivery. For this reason, we launched this field study to verify the limits and possibilities of delivery.

Experiment Description



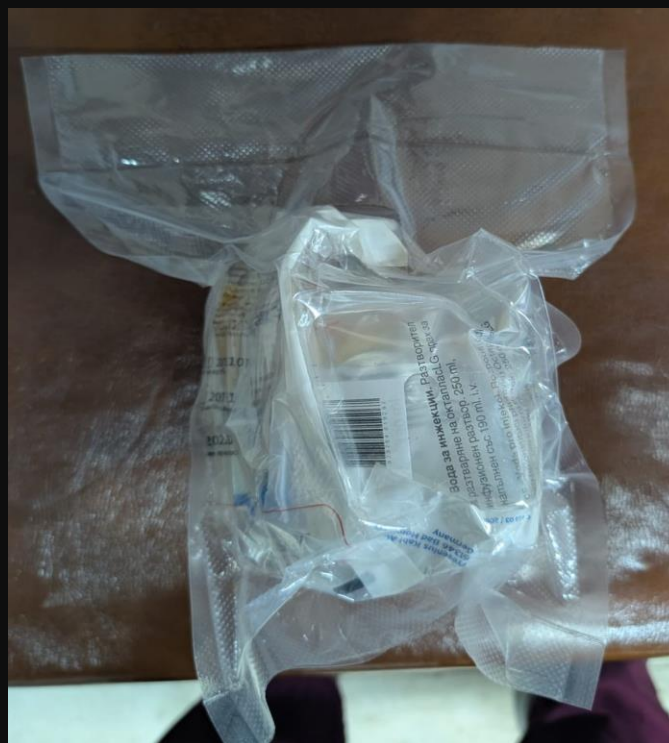
Experiment Description



Description of the experiment



Package No.	Drop height: 50 m, wind 13 m/s, soft plowed soil	Drop height: 100 m, wind 13 m/s, soft plowed soil
1	Everything intact	Everything intact
2	Everything intact	Packaging of the water for reconstitution damaged
3	Everything intact	Packaging of the water for reconstitution damaged
4	Everything intact	Packaging of the water for reconstitution damaged
5	Everything intact	Усе ціле
6	Everything intact	Saline packaging damaged
7	Everything intact	Everything intact



Conclusions from the First Stage



1. The glass bottle containing the lyophilized plasma can withstand much greater impact than the plastic bag containing the water for reconstitution.
2. There is no practical reason to drop from higher than 50 meters.
Drone pilots can usually descend lower; the package may land on a hard surface, and wind can carry the package off course.
3. The most accessible container for packaging is a plastic bottle — 2 liters.



Film



END OF BRIEFING