Red Case

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Compromises

An ambulance simulator for training in various situations

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INTRODUCTION

Red Case is a project in partnership with the London Air Ambulance (LAA) services. This means regular contact with the LAA, observation of their training, access to information but also the possibility for feedback on the product. However, due to the pandemic, this was made impossible towards the end of the project. Contact became difficult, making inferences the best course of action. The actual making of the project was also halted, materials were left behind and testing interrupted.

Red Case is a training experience that considers sight, touch but also hearing. The work was shifted gradually more towards the auditory and visual side as they were the only parts that could be explored and improved from then on. Research into exposure therapy for claustrophobia, visual cues to help set a scene but also adding auditory overload were looked upon to add stress but also comprehension.

PROTOTYPING

Prototyping of the different frames was not executed due to the circumstances. The workshop was closed and the size of the material made it impossible to take back home to work on. The absence of tools, material and limited space made CAD prototyping and visualisation the best tool to finish this project. A lot more studies on the joints, angles and materials would have been made, as well as testing by the LAA.

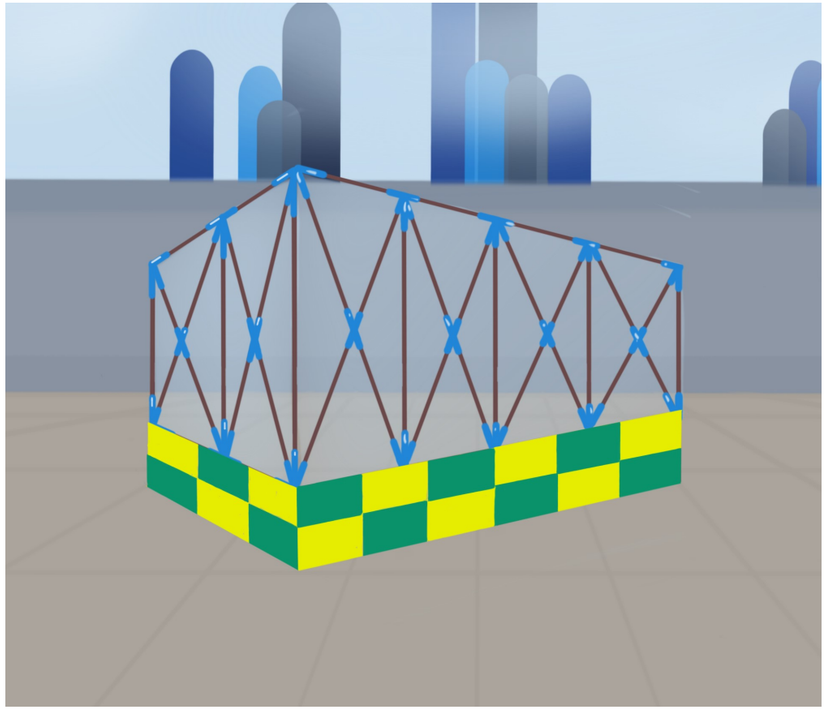
MATERIALS

Exploring materials and testing them is crucial for an adequate experience. Tarpaulin was one of the alternatives found to help mentors see inside the structure but for trainees to feel inside a closed ambulance. The tarpaulin was being tested and would have been submitted to feedback through the LAA. Due to the size of some of the materials and later lockdown, the project could not be pursued. Efforts were instead put into CAD drawings, engineering drawings, soundtracks and video.

MAKING

Plans of *Red Case* were created as well as a CAD rendering. Those plans are available to the public by accessing the website, thus making it possible to create the structure from scratch. A guide on how to build the structure is available on the website. Due to the uncertainty on the final structure and on how to build it, the guide is not very detailed.

After testing and feedback with the LAA, a drawn user-manual with detailed instructions combined with a video would have been created to make sure anyone can build it.



WEBSITE

The website was created to support the soundtracks easily, the promotional video but also the plans and guide to the structure. This would allow very easy access to the soundtracks anywhere, anytime for the LAA team but also a place where all the information on the product can be found. The website also links to the London Air Ambulance website should the user want to know more about them. When the structure would have been finished and tested, a video of the deployment and different features of the structure would have been made. A video guiding the user would have also been created to build the frame from scratch. Finally, a manual on how to use the structure and soundtrack for optimal training would have been available.

SOUNDTRACK

Soundtracks were created to add more dimension to the training. This will build up stress for the trainees but also ease some of the mentor's duties. Tracks are around 30 minutes long to provide enough time for the moulage to finish. They have sirens, city sounds, ECG and also driving sounds. The exact siren sounds could not be gathered through the LAA, royalty-free sounds that resembled it were thus used. The ambulance presents different types of sirens from what could be gathered: the Wail, Yelp, Phaser and Bullhorn. The sounds were only found for three of them. The sound had to be from the interior of an ambulance to avoid the Doppler Effect.

TESTING

Experimenting on the mesh, joints and general structure became impossible due to the situation. The mesh would have been added to the frame to test in different lightings and discuss the possible placement of LEDs inside to increase visibility. This all became hypothetical but improvements were still made on the placement of the joints, the addition of a belt and water weights.

The structure would have also been put to the test by the LAA. A scenario would have been chosen. The crew would have had to set it up, test the visibility of the mesh and see if it is recognisable. The soundtrack would have been assessed to see if it complements the moulages well. This would have been filmed to observe behaviours but also to create a video on how to set it up.

PICTURES

Ideally, a lot more pictures would have been included in this report to see the project in its environment of use and a video would have shown its use. Pictures of prototypes were taken but of rather poor quality. This would have been retaken in a uniform background to help visualise the different ideations and mechanisms.

CONCLUSION

Despite, their busy schedule, the LAA was still very generous in sharing their experience, this provided invaluable insight and helped the design significantly. Though this pandemic rendered the progression on this project hectic, improvements were still made. This should still be useful for the LAA should they decide to do it themselves. Rendering and plans can still be used to build the structure. Completing this project in the near future for them is a wish that can be hopefully fulfilled very soon. The animated video and drawings did help to visualise and improve the general user experience. Hopefully, it will have helped you imagine it too.

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