



## EMS Helps Build Blackhawk Helicopter Trainer

Military trainers help soldiers, pilots, and maintenance personal in many ways. Pilots can learn to fly an expensive aircraft without ever leaving the ground. For maintenance personal it allows them to learn how to repair aircraft quickly and correctly in a supervised and controlled environment.

### The Problem

When a major supplier of military trainers needed to replicate the top of Blackhawk helicopter maintenance access area they had a problem. The access doors and mechanical workings on the inside needed to be accurately duplicated. Unfortunately the supplier did not have access to the 3D CAD models to build their maintenance trainer.

### The Solution

EMS was contacted to 3D scan the areas needed for the trainer. Because of location of the access doors and mechanics inside the doors EMS used their Z Corp ZScanner Z800 3D scanner to 3D scan the area. Trying to use a tripod or arm based 3D scanner would not be possible because of the location. The Z Corp 3D scanner is very portable and allowed the engineering to stand on top of the helicopter while scanning the entire area. Within a few hours EMS's engineer had 3D scanned the entire top of the Blackhawk helicopter and mechanical workings underneath the access doors.

Back at EMS's office, the engineer converted the raw scan data into a feature based solid model for use in CAD. This process is done by using RapidForm 3D scanning software. RapidForm imports the scan data and through many powerful software tools allows the engineer to create, edit and analyze 3D surface and solid model geometry from scan data.

The finished 3D CAD data allowed the supplier to build a replica trainer to teach maintenance technicians how to access and repair some key components of the Blackhawk helicopter. Manually measuring and documenting this area would have been difficult and not very accurate.

### Conclusion

When it comes to 3D scanning and reverse engineering complex shapes that are not easily accessed, EMS has the 3D scanning tools, expertise, software and engineers to can get the job done quickly and accurately.

To learn more visit [www.ems-usa.com](http://www.ems-usa.com)



Blackhawk helicopter



Scanning the top of a Blackhawk



Access panels on top of Blackhawk Helicopter