EMS 3D Scans a Complete CH-47 Helicopter to Develop a Trainer

How do you build a trainer for a helicopter that was designed in the 1960's well before 3D CAD models even existed?

That was exactly the challenge faced by a military contractor bidding to develop a trainer for the Boeing CH-47 Chinook helicopter. One of the few aircraft from the 1960's still in production, the twin-engine, heavy-lift CH-47 continues to be used today for troop movement, artillery emplacement and battlefield resupply.

To build a trainer for the CH-47 helicopter, the military contractor needed a way to quickly and accurately generate a 3D CAD model of the helicopter that could be used to build a realistic trainer.

The Solution

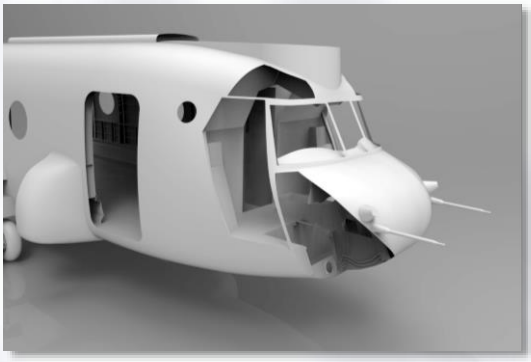
That's where EMS was able to help. As one of the largest providers of integrated 3D Scanning and 3D Printing solutions for over 15 years, EMS had the 3D technology, 3D scanning experience, and reverse engineering expertise to help the military contractor create the required 3D CAD model from the ground up.

The military contractor involved EMS early in the bid process which enabled EMS to provide the contractor with a detailed scope of work, delivery schedule and competitive pricing that helped the contractor secure the contract.

Once the military contractor won the contract, EMS traveled to a military facility to scan the complete CH-47. Two EMS engineers spent 5 days 3D scanning the CH -47 inside and out. To capture all the 3D data needed, the EMS engineers used a combination of 3D scanners. EMS used a Surphaser long range scanner to scan large areas due to its ability to accurately scan up to 85 meters in a single scan.

EMS 3D scanned much of the exterior with the Surphaser long range scanner.

EMS used multiple 3D scanners for the interior.

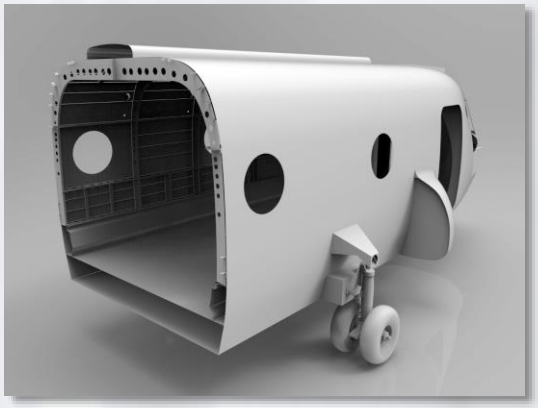


EMS created the 3D CAD files of interior and exterior in about three weeks.

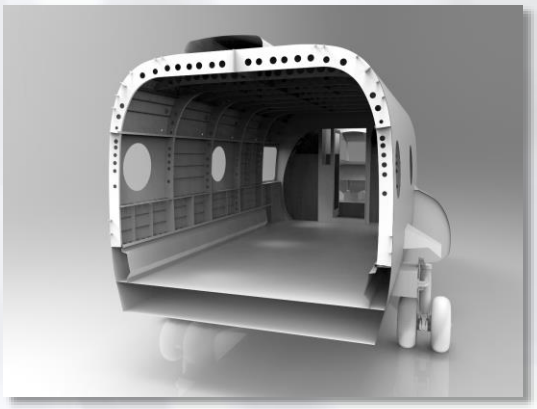
EMS 3D Scans a Complete CH-47 (cont.)

To capture scan data in tight areas, EMS took advantage of Creaform's highly accurate, HandySCAN handheld scanner. The HandySCAN allowed the EMS engineers to crawl into the cockpit to scan the floor, control pedals, gauges, as well as scan the landing gear, wheels and more.

After completing the scan of the CH-47, EMS next challenge was creating the 3D CAD model. Creating a 3D CAD model from such a large and complicated set of 3D scan data took about three weeks to complete. To work with large data sets for projects like this, EMS uses very powerful computers and employs modeling techniques based on years of experience 3D scanning large and complex objects. Once finished, the customer had a complete and detailed 3D CAD model to manufacture their trainer.



Using 3D technology, EMS created the digital CAD files the military contractor needed...



... in far less time than creating the files through traditional methods.

Conclusion

When it comes to 3D scanning large and complex models and creating 3D CAD files for reverse engineering and inspection needs, EMS combines 15 years of experience and expertise with advanced 3D technology to get jobs done quickly and accurately.

Founded in 2001, EMS, Inc. is a leading single source provider of 3D Scanning and 3D Printing solutions to customers across a range of industries including aerospace, automotive, military, consumer products, medical and art. With over 15,000 projects completed and hundreds of systems sold, EMS specializes in helping clients streamline product development, inspection and reverse engineering through advanced 3D technology. EMS is headquartered in Tampa with regional offices in Detroit and Atlanta.

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