



# Hangar One Avionics

<b>PART NAME</b>	Cockpit Console and Cupholders
<b>LOCATION</b>	California, USA
<b>MATERIAL</b>	Onyx FR, Carbon Fiber
<b>APPLICATION</b>	End-Use Parts
<b>INDUSTRY</b>	Aviation
<b>PRINTERS</b>	X7



Hangar One Avionics is a San Diego-based avionics and maintenance company. The team specializes in completions of law enforcement and special mission aircraft for a number of global customers including global customers, on Airbus Helicopters, Bell, Cessna, and MD airframes. Many of Hangar One Avionics' customers require low production or one-off custom parts to increase cockpit safety and convenience. To create these parts, the team would often rely on conventional machining methods using raw materials — a time consuming, impractical process resulting in up to a 65% scrap rate.

The Hangar One Avionics team needed to make a center console — a part that sits between the pilot and copilot seats — for a fixed-wing Cessna. Instead of going with the slower and expensive machining process, the team used their Markforged X7 printer. As a result, they not only printed the console in record time, they also added further customizations including two cupholders, a niche for the pilot's keyboard, and disconnects for hand controllers and USB chargers. The console and its additional features were printed using Onyx FR — a certified UL 94 V-0 rated flame-retardant nylon filled with chopped carbon fiber. The team's decision to use 3D printing rather than conventional methods significantly freed up the machinist's time to focus on other important tasks.

Matthew Roth, Head of Machining at Hangar One, has kept a close watch on Markforged ever since the company began to focus on increasing aerospace industry support. Matthew Roth is very interested in the company's latest releases, such as a traceable version of Onyx FR and Carbon Fiber FR, as well as Markforged's current effort to receive National Center for Advanced Materials Performance (NCAMP) qualification for its additive manufacturing process and aerospace targeted materials. "Adding traceability and helping speed testing and approvals with NCAMP qualification gives us more ways to add value to our customers," says Matthew.

**“The less time I have to be hands on with these machines, the more profitable we are because I can use the free time to focus on additional design work and engineering.”**

**MATTHEW ROTH**  
HEAD OF MACHINING  
HANGAR ONE