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# SUSTAINING THE CP-140 FLEET USING 3D PRINT TECHNOLOGY

**Parts that were 3D printed at IMP Aerospace in Halifax, Nova Scotia, are now flying on the CP-140 Aurora fleet. IMP Aerospace is the first company to be delegated authority from the Royal Canadian Air Force to design, certify, and manufacture 3D printed thermoplastic parts for use on a military aircraft.**

CP-140 Asset Managers were reporting higher numbers of obsolescence issues with plastic structures on the Aurora fleet. Some vendors stopped supplying certain parts, which led to longer waits for parts and increased prices on the existing components. Creating new manufacturing lines for the limited quantities necessary for the fleet proved to be too costly to be practical, and 3D printing was identified as a possible solution.

IMP developed an internal design and manufacturing process to adapt the new 3D printing technology to meet DND's strict airworthiness requirements. Within a year, IMP had gone from receiving their first 3D printer to having the first 3D printed part certified for the RCAF.

While this was originally developed for the CP-140 Aurora fleet, IMP is now using 3D printing technology for other projects, including printing parts for electronic systems.

IMP also utilizes 3D scanning technology to streamline repair to damaged parts. The 3D scanner can make a model of a part in seconds, with exact measurements, to assess potential damage so they can find a solution to fix it quicker and less expensively.

IMP's innovative work on the CP-140 Aurora fleet has established the company as the center of excellence for Canada's long-range patrol aircraft, and is an example of IMP's wider multi-engine aircraft expertise.



**IMP AEROSPACE & DEFENCE**

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