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Collaboration drives success for Cessna SkyCourier and McCauley

The mission: a durable, dependable, high-wing aircraft with horsepower to perform in takeoff, climb and cruise while hauling tremendous loads.

What will be required to lift and drive that aircraft: a heavy-duty and reliable propeller designed to enhance the performance of the aircraft — the McCauley Propeller C779.

The Federal Aviation Administration (FAA) recently awarded the new C779 propeller certification, a feat that would not have been possible without collaboration between the hard-working teams of the Cessna SkyCourier certification program and McCauley Propeller group.

Behind the Design

McCauley specifically designed the C779 propeller for the SkyCourier's overarching mission: high utilization.

The SkyCourier team knew the parameters they wanted the new aircraft to meet, including engine power, RPM, maximum propeller diameter, maximum weight and required performance. The program needed a new propeller to meet its needs.



The McCauley C779 in test.

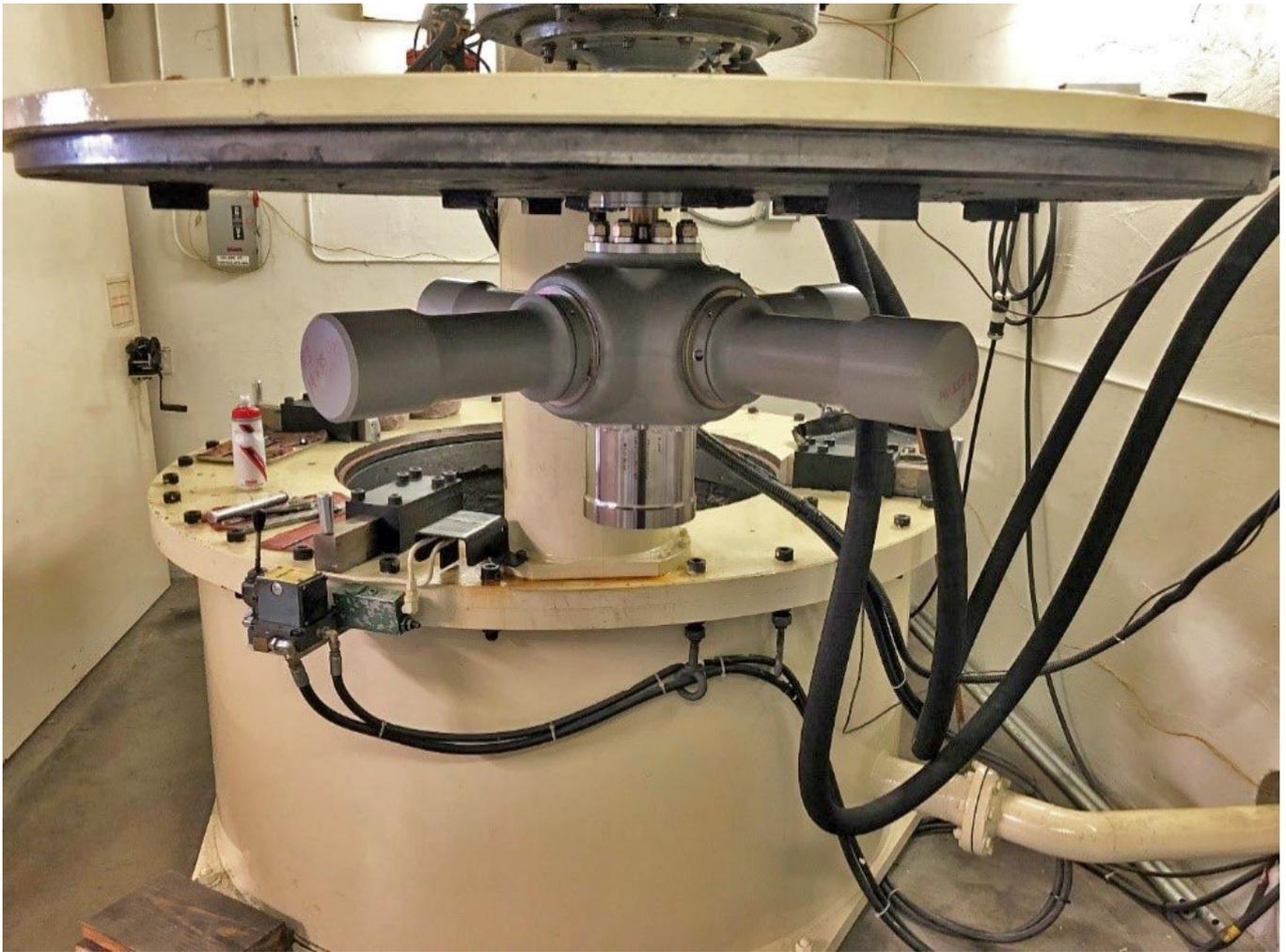
Designing an aircraft is complicated and takes collaboration between many engineers, designers and testers. Every element of the aircraft, including the propeller, must work within a specific set of parameters to reach the overall performance requirements of the aircraft.

For the C779, the McCauley design group met the required parameters, ensuring a smooth addition to the aircraft. “They got it right,” said Darrel Hornbaker, the SkyCourier’s lead project engineer. “McCauley did exceptional work and I’m grateful to work with such a team.”

Robust Testing

After designing the new propeller and signing off on the specs, McCauley proceeded to build certification articles and begin testing. Scott Randle, McCauley’s project engineer, said the whole process went smoothly, with only specific tests needing to be done, as the team completed the rest with analytics.

The 135 hours of testing consisted of endurance, functional testing and a blade retention system test at twice the maximum centrifugal load of the propeller during normal operation.



The centrifuge test spins the test article to twice the anticipated loads.

According to Hornbaker, the schedule was very tight, but that was no obstacle for the McCauley group.

“With such a great team, it is no surprise that the program went smoothly and certified on schedule, ahead of the SkyCourier’s requirements,” said Van Long, an engineering manager for McCauley.

Given the scale of the new Cessna SkyCourier, the C779 is now the largest 4-blade propeller McCauley manufactures.

A Passion for Teamwork

Team members were empowered to design and deliver this successful product by working together.

"Without the passion and dedication of our team members here at McCauley, we would not be celebrating our 82nd year as a leading aircraft propeller manufacturer."

— Emily Zintak, McCauley Value Stream Manager

During his 30 years with Textron Aviation, Long said he has been fortunate to have quality coworkers.

"I've always worked with great people," said Long. "There's no doubt."

"Without the passion and dedication of our team members here at McCauley, we would not be celebrating our 82nd year as a leading aircraft propeller manufacturer," said McCauley Value Stream Manager, Emily Zintak. "We are so excited to welcome a new set of end-customers to the McCauley family that we will serve now and in the future."



The McCauley team.

Future Success

Looking ahead, Zintak said that she looks forward to seeing the business prosper through similar partnerships, both in the new product development as well as aftermarket space.



Team members install McCauley propellers on the SkyCourier prototype.

The collaboration between these teams created success for certification, and Hornbaker expects to see achievements continue for the SkyCourier project. “We will be legendary because we have an outstanding team.” said Hornbaker.

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