

University of Dubuque Aviation Program's Approach to Transitioning their Students to an Aviation Career.

An inside look at how University of Dubuque approaches advanced systems training and Crew Resource Management to prepare their students for the transition to the airlines using Aerosim's CRJ FTD.

"We were missing the key step from the Piper Seminole to the jet training environment. The CRJ FTD has provided the platform to teach airline training concepts before our students are in training at an airline. We would be a disservice to our students by not having this technology available to prepare them for the transition to jet aircraft. Our goal for this program is to make our students' training events a mirror image of what they will encounter as they enter into various airline ground schools."

--- William Rigdon,
Instructor of Aviation and Assistant Flight Instructor

Background

University aviation programs traditionally have had advanced systems courses taught with static training tools, such as cockpit posters or "paper tigers" to prepare their students for their first ground school at an airline. Traditional programs were missing the tactile function and feel found when learning in a higher level training device. Some programs today are training on FTDs, but have older aircraft types with "steam gauges." The newer jet aircraft environment has moved to "glass cockpits" and Flight Management Systems (FMS). The aircraft have become more advanced, boosting the need for jet transition courses to prepare students flying piston aircraft for the transition to the jet aircraft environment. Regardless, these courses did not include opportunities to effectively learn Crew Resource Management

(CRM) because the program did not offer a dynamic training environment with real-time scenarios and the opportunity to operate a simulated aircraft.

University of Dubuque (UD) saw the need for students to be ready for their first airline or corporate flying job in next gen aircraft with "glass cockpits" and automated aircraft systems. They sought grants from the Department of

Education to purchase a FTD for their Aviation Program. After many failed attempts, they were selected to receive a grant to fund the purchase of a FTD. "Generous grant funding from the Department of Education made the acquisition of our new FTD possible," stated Steven Accinelli, Department Chair and Aviation Professor.



Aircraft: C-172 (15), PA-44 Seminole (2), TB-20 Trinidad (3), PA-31 Navajo (1)

Aviation Programs Offered: BS Flight Operations (Professional Aeronautics), BS Aviation Management

Aviation Students: 200 (160 flight, 40 management)

Certified Flight Instructors: 24

Equipment: Aerosim CRJ200 FTD

Need and Opportunity

University of Dubuque has around 160 flight students in their aviation program. Many of which will seek an aviation career flying for a Part 121 carrier. Students from their program have been hired at regional airlines flying advanced jet aircraft. They saw the need to help their students transition to the airline training and turbine aircraft environment. In order for their students to be successful during airline training they would need the skills and knowledge expected of a pilot with previous turbine experience. The University wanted to introduce a CRM course into their curriculum. They would need an industry representative jet aircraft simulator to base these courses on in order to teach aircraft systems and expose their students to the multi-crew environments. Their belief was that these courses would ensure the success of their students down the road. "A FTD allows the student to actually see malfunctions in real time (i.e. Engine indications during hot or hung start) and provide tactile learning. Not just theory – they will see and touch it," said William Rigdon. After being selected for the grant by the Department of Education, University of Dubuque began searching for a FTD representing a regional jet aircraft their students would potentially be flying in the future.



Solution

Because of the existing relationship using Aerosim JetPac™, high-fidelity simulation, and competitive pricing they selected Aerosim to build a full hardware replica FTD of the CRJ with a multi-channel wrap around visual system – a commonly flown aircraft by regional airlines. After being selected, Aerosim began building the CRJ FTD and UD began preparing the course curriculum and facility. The device was installed at Americas Hangar at the Dubuque Regional Airport in February of 2012.



"Aerosim gave us a robust product to help our students progress to a higher level of education," mentioned Rigdon.

It was immediately implemented into their aviation program. University of Dubuque developed a jet transition training course using related Flight Crew Operating Manuals (FCOM) and Quick Reference Handbook (QRH) with the goal of making the course imitate an airline training program.

The jet transition training solution consists of:

- ❑ Crew Resource Management (CRM) course:
 - ✓ Advanced systems knowledge: CRJ aircraft systems Computer Based Training (CBT)
 - ✓ (5) 2 hour Line Oriented Flight Training scenarios (LOFT)
 - ✓ (10) 2 hour training sessions in the CRJ FTD
 - ✓ Final exam including: aircraft systems written test, and FTD check with system malfunctions
- ❑ CRJ Full Hardware Replica Flight Training Device
 - ✓ High fidelity simulation
 - ✓ Digital control loading
 - ✓ 220° x 45° multi-channel wrap around visual
 - ✓ 100+ malfunctions
 - ✓ Aircraft specific flight deck
 - ✓ Form, fit, feel and function of the actual aircraft
 - ✓ Navigation database

Results

The CRJ FTD was first implemented into the CRM course in the Spring of 2012 for students going through University of Dubuque's Aviation Program. The CRM course is now a required course to graduate from the Flight Operations (Professional Aeronautics) major. It is anticipated by UD staff that the implementation of the FTD into the course will make the transition to airlines easier for their students and satisfy regional airline demand for competent pilots. Many regionals have reduced minimum hours required for those who have completed a jet transition course or require applicants to have completed such a course at an approved training facility in order to apply for a position as a First Officer at their airline.

"This state-of-the-art avionics and navigational equipment is a significant improvement for our aviation program and for the progress of our students," said Steven Accinelli. "The FTD will increase their competitiveness in the aviation marketplace."

Students and instructors have already embraced the new technology in their program. "We have taken the unknown out of transitioning to a jet aircraft. Our students now see first-hand what an airline or corporate flight department transition will look like once they complete our program and pursue their first flying job," continued Accinelli. Students that have completed the new course have yet to graduate. In time, it is expected their students will reap the benefits of being exposed to airline style training. The UD staff expect students will see increased success rates in their new hire classes in the future. Alumni have commented that they wish the program had this technology in the past.



Conclusion

Aerosim has embraced providing FTDs to the university market. University of Dubuque is a progressive program that has sought to follow industry standards in aviation and have introduced airline style training into their program. Aerosim is focused on providing the highest fidelity simulation products for aviation training organizations worldwide creating the most realistic training environment possible. "Our program is progressive, but it also supports current aircraft. We give our students exposure to 'glass cockpits' – it is industry driven to train students in this way," said Accinelli.

"We are thrilled to be able to bring to the University of Dubuque the same high fidelity family of tools that Aerosim has been providing to our numerous airline customers worldwide. The design, manufacture and installation of University of Dubuque's CRJ FTD is a clear demonstration of Aerosim's commitment and ability to provide these innovative, feature-rich training tools and technologies to the university market."

Phil Brown, Aerosim's Vice President of Operations