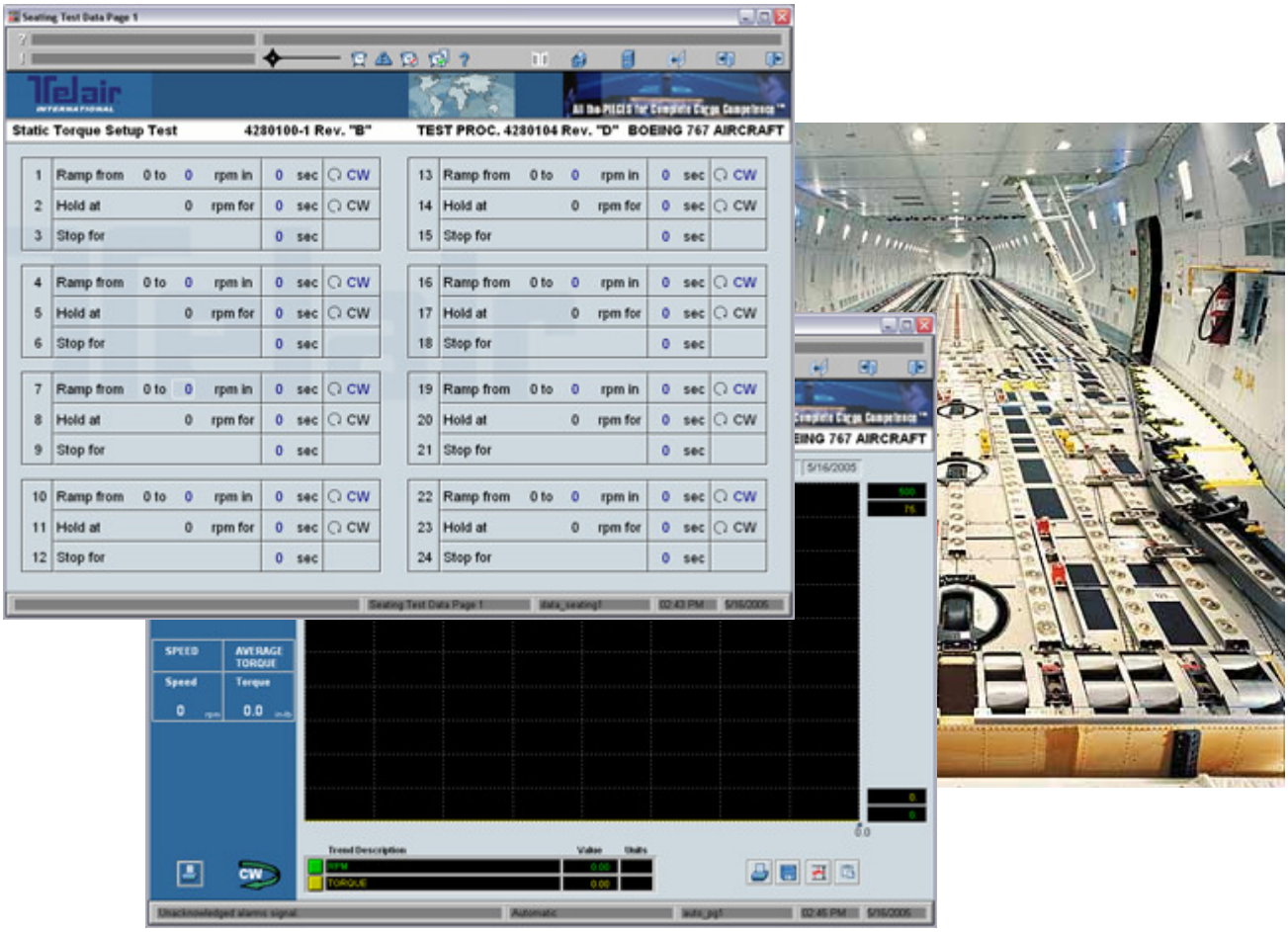
Telair International
Boeing Break Roller Test Stand
CitectSCADA / Think and Do / WinPLC

Overview

The goal of this project was to create an automated test stand for break rollers. These are the rollers that are present in the cargo hold of Boeing's 747, 737, and 767 aircraft. They allow cargo to easily roll into the aircraft, and have a clutch assembly so the cargo does not roll out of the aircraft. The break rollers were being tested manually using very old equipment. In order to make production demand, Telair had two people working two shifts. With the new system, production demand is typically met within half a shift.

Solution

This project utilized CitectSCADA for its excellent graphical capabilities, programming features, and reporting. The customer needed a large amount of trend and report history. CitectSCADA made it possible to publish HTML and text based reports. The HTML reports were used for production purposes, and the data stored in the text files was collected by Telair's Business systems for long term historization and internal reporting purposes.



Technology

An Automation Direct WinPLC was used for control purposes. This was programmed using Think and Do. CitectSCADA communicated to a Think and Do OPC server which communicated via Ethernet to the WinPLC. The system is controlled using an industrial touch screen. CitectSCADA was programmed to handle all data entry from the touch screen. This eliminated the need for any keyboard or mouse controls. A control panel was designed which made used of a VFD to control speed and torque applied to the clutch. Encoder feedback was used to close the speed loop. Enterprise Automation wrote special code to allow for rapid speed acceleration without overshoot seen with the use of only a standard PID loop. This unit was placed in service mid 2002 and is still in use today.