Application Story

Aircraft Maintenance

University students design a gantry using a PBC Linear solution

An aircraft maintenance facility in Michigan needed linear rails for a gantry that removes auxiliary power units (APUs) and transports them to a maintenance cart for repair. The problem was that the existing gantry did not provide easy traverse from the aircraft to the maintenance cart.

As part of their senior design project, facility managers asked local university engineering students to come up with a realistic and cost-effective solution. The students would need to create a more fluid linear motion system in the gantry without any quantifiable data provided.

The PBC Linear solution

The proposed solution was to utilize parallel rails using Redi-Rail® and FeatherShaft® products. Redi-Rail was an ideal solution due to its light weight, availability in long lengths, and roller-based technology. The rails were fastened in parallel to support framework, and the sliders were attached to a holding fixture. The APU could then be removed from the aft section of the aircraft, moved via the rails to the maintenance cart for work, and then back to the aircraft when completed. Redi-Rail rollers provided smooth, easy, linear motion under load and the ability to drive manually. Key advantages were the adjustable preload and the rolling element technology that facilitates manual movement of heavy loads.

Details

CRT Components:
Redi-Rail and Sliders

Problem:
Engineering students needed a smooth and dependable linear motion design for an aircraft maintenance gantry.

Solution:
Redi-Rail sliders and shafts provided manual operation and smooth, easy linear motion under heavy loads.