Aerial Fire Fighting

Application Challenge: Speed and force were needed for the Evergreen Supertanker, or "water bomber," a modified Boeing 747 cargo jet designed to hold, transport and dump 24,000 gallons of fluid on large ground fires. The cargo hold is fitted with 4 fluid tanks, which dump from the bottom of the plane via four 16" diameter butterfly valve openings. The supertanker does the work of 7 standard fire-fighting planes.

The Exlar GSX40 is deployed in two areas of the application. For safety and for dump control, each tank must maintain absolute pressure control (sloshing 24,000 gallons of water would be a "catastrophic event"). The GSX40 controls the pressure regulation valve between the air pressure tanks and the fluid holding tanks. Additionally, another GSX40 regulates the dump valve, which controls the fluid dump.

Exlar Products: GSX Series actuator. Shown below, the GSX Series linear actuator provides smooth and accurate motion in a compact and completely sealed package.

Exlar Solution: Exlar was chosen because the GSX40 provided both the speed and force needed for the application. Also, it eliminated the cumbersome, complicated setup utilizing hydraulic power supplies, fluids and control mechanisms. The GSX40 could meet both application needs, providing an ease of purchase platform while minimizing logistical difficulties related to multiple systems.

The Exlar Advantage
- Exceptionally fast responses to command signal changes
- Roller screws offer up to 15 times longer life than ball screw actuator
- Less energy consumption with electric actuation
- Accurate and repeatable positioning
- Wide variety of mounting styles
- High cycle rates
- Multiple stroke lengths
- Available in standard sizes offering peak forces from 100 to 40,000 pounds
- Operation with nearly any servo amplifier
- Higher stiffness due to integrated design

Optimize your application with Exlar actuators. Visit www.exlar.com for complete product information or call us at 952-500-6200. You may also email us at info@exlar.com.