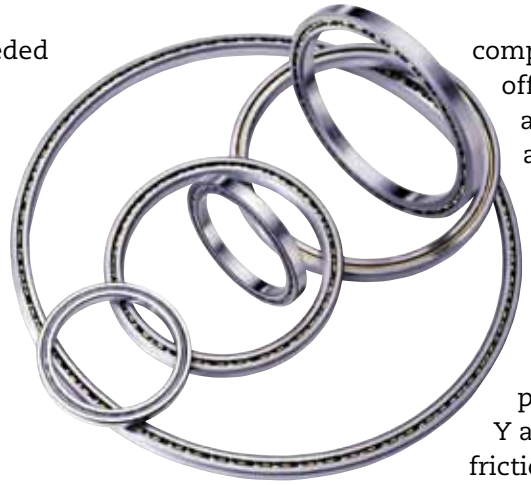
# AIRBORNE ANSWERS

## How a bearings supplier helped an antenna manufacturer select the right bearing for a mission-critical airplane application

An antenna manufacturer needed to design a directional antenna pedestal to support an airplane-mounted antenna for relaying critical data. The manufacturer contacted its local distributor, who in turn approached the Silverthin Bearing Group, an IDC Preferred Supplier that manufactures large diameter thin section ball bearings for the aerospace, industrial, robotics and distributor markets.



Since the antenna would be airborne, the pedestal required a bearing configuration that's lightweight, has low torque and is corrosion resistant. The antenna had to maintain a high level of pointing accuracy, which also required that the bearings have a high level of stiffness. The antenna manufacturer needed something that would be cost-competitive and available with a lead time of one month or less.

In most applications where the finished product is exposed to the elements, the solution would be to incorporate stainless steel bearings for their corrosion resistance. But stainless steel bearings typically take 10 to 13 weeks to be delivered because most manufacturers don't keep large quantities in stock.

The antenna maker chose Silverthin over the competition because Silverthin offered a solution that met all of the requirements – in a timely and cost-efficient fashion.

For example, to address the issue of stiffness, Silverthin specified angular contact matched pair bearings for the X, Y and Z axis. To minimize friction and keep torque as low as possible, Silverthin applied a very light and precise amount of low-torque grease in the bearings. And, to address the issue of corrosion resistance, Silverthin's thin dense chrome (TDC) plating served two important purposes – it offered corrosion resistance on par with stainless steel, and the plating could be applied to standard stock rings. Applying the plating to standard rings meant that both the cost and lead time were lower than for an all-stainless steel bearing.

- Directional Antenna Pedestal is a lightweight communication antenna pedestal
- Application required a very small, lightweight yet robust bearing
- Pedestal must withstand rough airborne environment, including corrosion protection
- Quick delivery required