



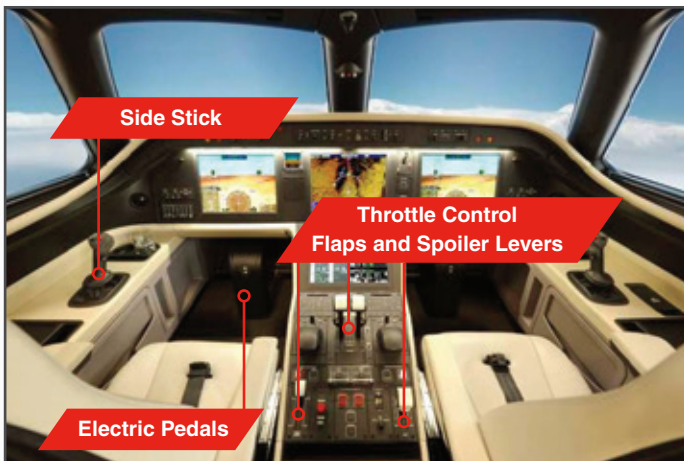
LORD Flight Control Equipment

LORD provides customers innovative offerings globally with best-in-class cockpit controls



- Inceptors to convert pilot inputs into flight control system commands
- Force feedback optimized for pilot effectiveness
- Electromechanical actuators for deployment of doors, landing gear, vents and control surfaces
- Worldwide distribution, repair and overhaul network with AOG stock, servicing OEMs and end users

Flight Controls for Business and Commercial Aircraft



Typical Applications:

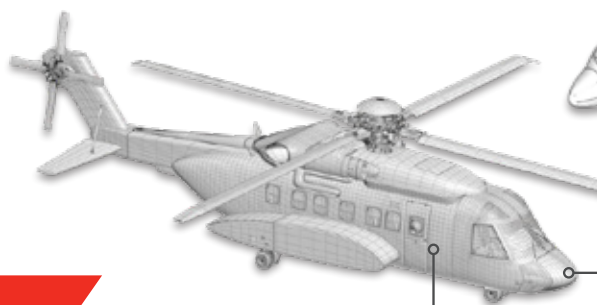
- Cockpit Controls/ Inceptors
- Actuators
- Sensors
- Dampers

Benefits:

- Enable safer flights
- Reduce pilot workload
- Reduce aircraft weight
- Optimize drag of wings
- Enhance pilot comfort

Actuator Systems for Aircraft and Helicopters

- Door Systems
- Flight Control Systems
- Force Feel Systems
- Locking Systems



Our extensive experience in commercial fixed wing flight control systems and our innovative active vibration control systems in helicopters combine to make us a great partner for providing advanced flight control interfaces for aerospace applications.

Cockpit Control Solutions

LORD inceptors provide functional and ergonomic interfaces between pilots and various aircraft systems. Our Cockpit Control solutions are compact and lightweight and can be seamlessly integrated into cockpit designs. LORD flight control inceptors can be tailored to sidestick or yoke based cockpit layouts.

Pilot Interface with:

- Flight Control Systems
- Engine Control Systems
- Landing Gear Systems

Modular Inceptor Components:

- Force Feel Dampers
- RVDVT Transducer Units
- Force Transducer Units

Integrated Inceptors:

- Auto Throttle Control Unit
- Speed Brake Control Unit
- Flap and Slat Control Unit
- Nose Wheel Steering Hand Wheel
- Side Stick (or Yoke)
- Rudder and Brake Pedals



Electromechanical Actuators

Current aircraft primarily use hydraulic actuators to move surfaces and manage the landing gear operations. This mature technology requires multiple hydraulic pumps, a network of hydraulic pipes and valves, with weight impact and high maintenance cost. Fluid contamination could lead to a common failure mode at the aircraft level, and oil leakage above a hot brake might create a fire.

The current industry trend is toward more electrical systems on aircraft. New power sources allow some surfaces to be driven by Electromechanical Actuators (EMA).

The EMA is powered by an electrical network. One or two electric motors drive a linear screw that is capable of moving the surface and holding the required position. Several concepts have been evaluated to meet various aircraft applications, new aircraft system architectures and certification requirements.

Features:

- Roller or ball screw driven
- Magnetic torque limiter
- Power electric brake
- Embedded software or driven by customer electronics
- Patented contamination ingress solution
- Patented end of stroke locking
- Health monitoring and maintenance functions



Collaborate with LORD: A Trusted Supplier for the Aerospace & Defense Industry

Our Engineers Can Save You Time and Money While Helping You Achieve Your Project Goals

- Decades of design expertise, covering dozens of aircraft, enable LORD to quickly design the optimal solution for your program
- Our expertise goes beyond elastomerics – our greatest value to you comes when we can help design a complete system, including structures and attachments
- A full complement of engineering tools, including a fully-accredited dynamic test lab, plus all major design and analysis software packages ensure compatibility with our customers

A Long History of Supporting Aerospace and Defense Companies with Innovative Solutions

- Founded in 1924 with a focus on vibration control for the transportation industries; began isolating aircraft engines and avionics in the 1930s
- Aerospace applications include: bearings, active vibration control systems, and flight control equipment
- Our markets served include fixed wing aircraft, helicopters, submarines, space vehicles, strategic and tactical missiles and military ground vehicles
- Certified repair centers for cockpit control equipment in France and the USA



LORD provides valuable expertise in adhesives and coatings, vibration and motion control, and magnetically responsive technologies. Our people work in collaboration with our customers to help them increase the value of their products. Innovative and responsive in an ever-changing marketplace, we are focused on providing solutions for our customers worldwide.

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