Delivering game-changing vertical lift technology

Rolls-Royce LiftSystem®

We put the vertical lift in the F-35B Lightning II.
Our unique LiftSystem® is the only vertical lift technology for fighter jets in production in the world.

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Overview

Rolls-Royce continues to extend its STOVL capability with the Rolls-Royce LiftSystem® which enables unsurpassed capabilities for the Lockheed Martin F-35B Lightning II.

The latest technology incorporated into the Rolls-Royce LiftSystem provides an extremely robust, reliable and easily maintained STOVL solution that minimises through life operational costs.

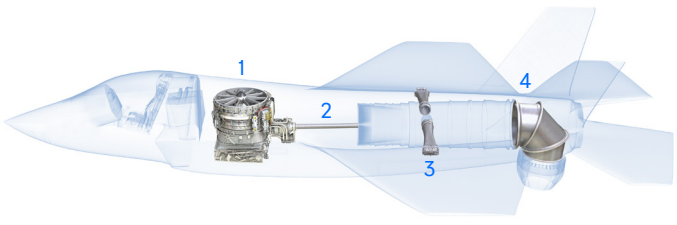
The Rolls-Royce LiftSystem comprises the Rolls-Royce LiftFan®, Driveshaft, 3 Bearing Swivel Module (3BSM) and Roll Posts. The LiftFan is a 50-inch, two-stage counter-rotating fan capable of generating more than 20,000 lbf of thrust, is driven from a conventional gas turbine and produces the forward vertical lift. The 3BSM is a swivelling jet pipe capable of redirecting the main engine thrust downward to provide the rear vertical lift. It can rotate through 95 degrees in 2.5 seconds and passes 18,000 lbf of thrust. Aircraft roll control is achieved using the Roll Posts mounted in the wings of the aircraft, which provide a further 1,950 lbf of thrust each.

1. **Rolls-Royce LiftFan**
   - Capable of delivering 20,000 lbf cold thrust.
   - Has a 50 inch diameter 2-stage counter-rotating fan with world leading hollow bladed disk technology.
   - Features a thrust vectoring variable area vane box nozzle.

2. **The Driveshaft & Clutch delivers:**
   - Up to 29,000 shaft horsepower from the main engine to the LiftFan.
   - This provides the conversion needed to take fighter jets from conventional flight to STOVL capabilities.

3. **Roll Posts**
   - Direct 1,950 lbf of bypass thrust from main engine.
   - Hydraulically actuated nozzles during STOVL operations.
   - Provide excellent aircraft roll control and stability.

4. **3BSM**
   - Directs 18,000 lbf thrust from main engine.
   - Rotates 95 degrees in 2.5 seconds.
   - Reheat capable during conventional flight.



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