

**Ejection seat:** In 2015, the program discovered that pilots who weigh less than 136 pounds could possibly suffer neck injuries during ejection. Officials stated that the risk of injury is due to the overrotation of the ejection seat in combination with the thrust from the parachute deployment during ejection. The program has explored a number of solutions to ensure pilot safety including installing a switch for lightweight pilots that would slow the parachute deployment, installing a head support panel that would reduce head movement, and reducing the weight of the helmet. The final design completed qualification testing in 2016 and entered production in June 2017.

**Tire service life:** The average service life of tires on the F-35B is below 10 landings, so Lockheed Martin has been directed to develop a tire that can withstand greater than 25 conventional full-stop landings. The program reports that Lockheed Martin has selected a new tire and expects to test these tires by late 2018. Figure 11 shows an F-35B during a landing.

**Life-support system (LSS):** From May to August 2017, six events occurred where pilots reported physiological symptoms of oxygen deprivation, though no common cause was identified. However, three issues with components related to the LSS are being examined:

1. A breathing regulator on the pilot's seat is failing at a high rate, contributing to one oxygen deprivation event. Slow progress on a root-cause corrective action has led the program to consider alternative suppliers for this component.
2. An antisuffocation valve that opens when the breathing regulator fails is itself failing to consistently open, creating a risk that unconscious pilots ejecting over water may drown. The valve's manufacturer is investigating potential improvements, and F-35 units are inspecting and cleaning the valves.
3. The rate at which the cockpit's internal pressure changes can potentially cause significant debilitating ear pain or injury to the sinus. In addition to potential pain experienced by the pilot, loss of situational awareness during complex maneuvers could cause the aircraft to crash.