

Bellanca, 1730A, Failed Nose Landing Gear, ATA 3230

During touchdown on runway 36L, the submitter states, "the nose landing gear failed and partially collapsed upon contact with the runway. It appears from our investigation, the nose gear linkage bearing rod-end (P/N 198001-2) to the gear extension assembly experienced a fatigue failure. Based on the fracture signature, the failure appears to be a mild-to-high stress concentration, from a one-way bending load. The rod-end failed at a point where the threads and nut meet, shearing even with the nut face (AN316-4R). These threads were stretched and bent at a fifteen degree angle with about one-half inch of thread showing. The rod-end bearing movement was satisfactory.

When the NLG tire contacted the runway, the over-center extension assembly to the forward and aft drag struts failed at the rod-end. This allowed both struts to travel beyond their proper horizontal positions, allowing the nose wheel to move aft at touchdown. This forced the aft drag strut to pin the forward strut against the wheel cylinder, preventing the nose wheel steering with the rudder pedals. The wheel went slightly to the left at contact with the runway and jammed.

The aircraft veered sharply left and moved off the runway, across the grass, on to and across the left taxi-way and its grass, and into a ravine where it came to rest." (The extension assembly/component number is P/N 194317.)



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Part Total Time: 2,751 Hours