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The following information was provided by Donald Kramer, Acting Chief, NTSB Materials Laboratory (RE-30).

The seized bearing is at the forward end of the right MLG retraction rod. In one of the attached images you can see this rod. It is painted light green. This rod is plastically buckled in the middle. The two rod ends are at 90-degree rotations to one-another. The seized bearing is at the right end of the rod as it is laid out in the image. The buckle in the rod and the seizure of the bearing are consistent with a compressive overload failure of this rod.

The left and right NLG retraction rods show a different separation pattern. These rods are capped by a spherical bearing at one end and a long solid rod end at the other. The rod ends are inserted into the ends of their respective rods and are held in place by shear pins. A spherical bearing caps each rod end. The rod ends had pulled out of their respective rods. The left rod end was submitted with the rods while the right rod end was not. Pieces of shear pin were observed still inside the NLG rods and a piece of pin was inside the pin hole of the left rod end. The fracture surfaces on the rod end were smeared from pulling out of the rod. The right rod end was not submitted. The fracture surfaces of the pin fragments lodged within the rods were not examined. The spherical bearings on the NLG rods all rotated freely.



