

PROF. IGOR PAUL
Rm. 3-451, M.I.T.
CAMBRIDGE, MA 02139

Memo

LETTER

(617)253-4466

Date 1/24/86

To Mr. Lad J. Roth
Hahn and Swadey
1404 E. Ninth St
Cleveland, Oh 44114

Subject Oldfield v
Greenlee
8504

Dear Mr. Roth:

I am extremely sorry for the inexcusable delays in getting this report to you. I hope my tardiness has not prejudiced your case,

Based upon my review of the materials you forwarded to me including the circumstances of the accident, the metallurgist's report and photos and based upon my examination of the actual wire cutter and fractured shoulder screw, the following summarizes my professional opinion on the design of this wire cutter and its involvement in the above accident.

In my professional opinion, the design of the Greenlee 708 wire cutter was improper, inadequate and defective in failing to properly secure the bushing support pivot which transmits the extremely high shear forces from the movable hand lever to the pivot base. The 5/16" -18 screw thread used on the shoulder screw to anchor the pivot is completely inadequate to repeatedly transmit the normal and foreseeable cutting forces produced by the user of this device after some looseness develops in the screwed connection. The nut on the other side cannot keep the shoulder screw completely tight during repeated use. As soon as some looseness develops, the forces which are transmitted as almost pure shear at the base of the thread/shoulder interface while the shoulder screw is completely tight, now also produce bending and torsional stresses which combine to exceed the strength of the threaded portion of the pivot. These additional stresses were further aggravated because the slotted hole in the hand lever was machined unevenly during original manufacture (a manufacturing defect) and thus allowed the bushing to cock. This failure mode is clearly demonstrated by the physical evidence of the deformed threads on the screw and on the threaded hole, the fracture surfaces, and the wear markings on the uneven slotted hole surfaces and on the bushing flange and screw shoulder.

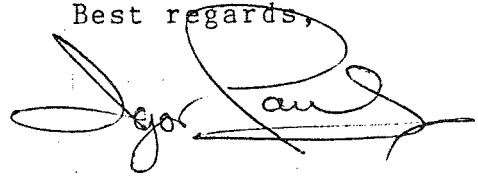
In my professional opinion the fracture of the screw, separation of the tool and the resulting injuries to your

☐ Please reply ☐ No reply necessary

SIGNED

client were caused directly by the inadequate design of the tool, Please let me know if you need additional details. You will need to get the parts drawings, specifications and materials and component test results from the manufacturer if the case continues to trial so that I can use their own drawings to demonstrate the non-compliance with prudent engineering design practice in the pivot design and in the machining of the elongated slot.

Best regards,

A handwritten signature in black ink, appearing to read "J. G. [unclear]", written over a horizontal line.