

Cust Comp Harlow

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The fired unseparated case was cross sectioned and polished to reveal the grain structure (Fig 1).

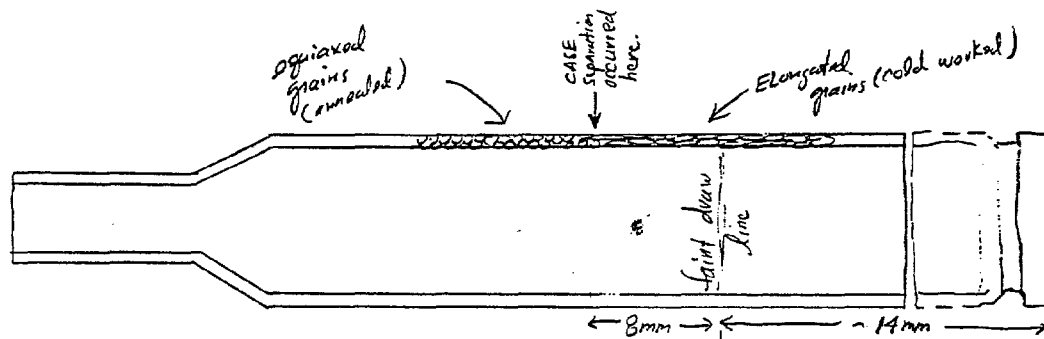


Fig 1. Cross section of the cartridge

A faint draw line was observed on the inside of the case as indicated in fig 1 (~ 14mm up from the base). The draw line did not produce any reduction in side wall thickness. About 8mm up from the draw line (towards the mouth) the grain structure changed from elongated cold drawn grains to an annealed equiaxed grain structure. The case separation on the returned cartridge occurred exactly where the grain structure converts from elongated to equiaxed. I don't feel the shell was defective, only it failed in the most probable spot after several reloadings.