the resistance increased slightly. (The same behavior was noted in shocked copper (Leslie, 1973).) Rearrangement or dispersal of imperfections could cause this. Annealing at 200°C does remove two-thirds of the shock-induced resistivity. A 50°C anneal should remove all point defects created by plastic deformation (Dawson, 1965a). Evidently any point defects generated by shock compression were able to annihilate or migrate out after relief to one atmosphere in the impact experiment.

TABLE IV. Results of post-shock anneal.

Anneal Temperature (°C)	Time Duration (min)	$\frac{R_{4.2}}{R_{298}}$
Preanneal	....	0.0222
55- 58	17	0.0232
94- 97	10	0.0229
199-207	7	0.0064

So the annealing study indicates that the lattice imperfections in the recovered foil are mostly line imperfections, i.e., dislocations. A dislocation density of $6 \times 10^{10}/cm^2$ was therefore computed from the resistance change due to the 200°C anneal. In comparison, Rose and Berger (1968) found a dislocation density of $1.5 \times 10^{10}/cm^2$ by inspection of electron micrographs of aluminum shocked to 150 kbar.

Examination of recovered foils under an optical microscope at magnifications of 30 to 100 showed sets of lines locally parallel which were not present in unshocked foil.

These same lines were observed by scanning electron microscopy (Fig. 17). Similar lines have been observed in shocked nickel by Dieter (1961). Dieter identifies the lines as slip bands (clusters of closely spaced slip lines). In the present work as in the nickel work the slip bands are fragmented due to cross-slip. In both cases there is no evidence of deformation twins.

Average slip-band spacing in the nickel work was 2.7 ± 0.3 μm for all shock strengths (100 to 520 kbar). For the present work 1.4 ± 0.5 μm was a typical mean value for the observed spacing of primary slip bands. Some evidence of slip on secondary planes was observed with a spacing of about 8 μm (Fig. 17 (d)). Nickel shocked to 100 kbar showed no secondary slip, but at 460 kbar secondary slip was seen.

Dieter notes that the slip-band spacing in recovered nickel may be representative only of the residual strain following shock compression and relief. The slip-band spacing observed corresponds roughly to that expected from slow deformation to the residual strain value. Therefore, we conclude that the observed slip-band spacing in silver is probably typical of the final, relieved state and not of the compressed state.

For reasons not understood, recovered pieces from shots 73-010 and 73-044 showed only faint evidence of slip bands whereas the bands were prominent in the other two shots. Recall that 73-009 and 73-010 were both MRC foil shocked to 87 kbar.