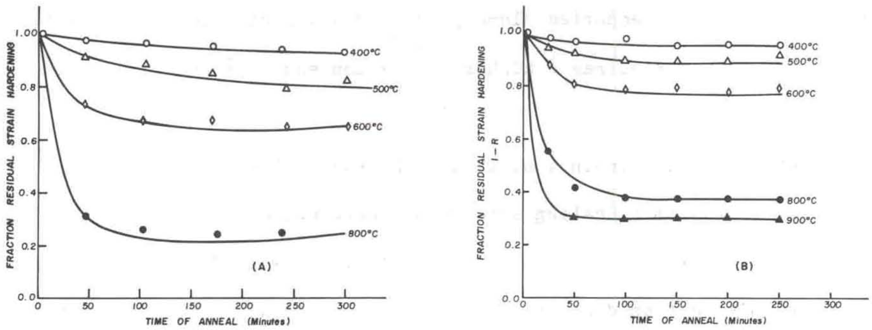

Figure 1 Isothermal recovery curves for shock deformed Fe-Mn, (a) 90 kb (b) 300 kb,

TABLE I

Resistivity Changes and Estimated Point Defect Concentrations

P (kb)	ΔρIII(μΩ-cm)	ΔρIV(μΩ-cm)	ΔρV(μΩ-cm)
90	$0.78x10^{-2}$	$0.85x10^{-2}$	$1.62x10^{-2}$
150	$0.85x10^{-2}$	$0.91x10^{-2}$	$2.50x10^{-2}$
300	$0.97x10^{-2}$	$0.92x10^{-2}$	$2.90x10^{-2}$
500	$1.15x10^{-2}$	$1.05x10^{-2}$	$2.98x10^{-2}$

P	Ci(Interstitials)	Cv(Vacancy)	C_d (Dislocations)
90	$.78x10^{-5}$	$2.91x10^{-5}$	$1.54x10^{10}$
150	$.85x10^{-5}$	$3.13x10^{-5}$	$2.40x10^{10}$
300	$.97x10^{-5}$	$3.30x10^{-5}$	$2.78x10^{10}$
500	$1.15x10^{-5}$	$3.78x10^{-5}$	$2.88x10^{10}$

Two features of the experimental results should be emphasized: (a) There are approximately seven times more vacancies than interstitials. (b) Both vacancy and dislocation density appear to reach saturation with increasing strain. The resistivity data agrees with the recovery kinetics since it was shown that vacancies alone play a predominant role in the earliest stages of recovery. Stage V recovery requires a higher activation energy since dislocation climb is important.

Based on the experimental findings of this work, the following conclusions have been reached:

(a) The initial stages of annealing after shock deformation are associated with migration of vacancies, while the last stages of recovery are associated with dislocation climb.

(b) Vacancy and dislocation density appear to reach saturation with increasing strain. This saturation can be explained by examining the dominant point defect generation processes.

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