| Shot No. | Explosive Thickness in Mm(D) | Mean Thickness of "Twinned" Zone in Mm(L) | L/D of Twin Zone Boundary | Pressure* at Twin Boundary in Kb | Depth of 130 Kb Point | L/D of 130 Ki Point |
|-------------|------------------------------------|---|---------------------------------|---|-----------------------------|---------------------------|
| 1593 | 12.78 | 7.0 ± 0.2 | 0.55 ± 0.02 | 150 | 11.3 | 0.88 |
| 1594 | 12.70 | 7.0 ± 0.2 | 0.55 ± 0.02 | 150 | 13.2 | 1.04 |
| 1664 | 24.0 | 15.0 ± 0.2 | 0.62 ± 0.01 | 145 | 25 | 1.04 |
| 2113 | 25.4 | 13.0 ± 0.2 | 0.51 ± 0.01 | 155 | - | - |
| 2614 | 25.4 | 12.5 ± 0.2 | 0.49 ± 0.01 | 155 | - | - |
| 2141 | 25.4 | 13.5 ± 0.2 | 0.53 ± 0.01 | 152 | 26 | 1.02 |

turns to normal the γ iron crystals will transform back to α -iron by means of a second martensite transformation into 24 possible orientations which are related to the γ iron orientations. Some of the newly formed α grains may have transformed from γ iron, by the same shearing movements which produced γ iron from α iron, thereby returning to their initial orientation. In general, however, the new grains will have a different orientation than they had initially. According to the Bowles mechanism all of the α grains with the same orientation will exhibit twin relationships with each other.

The reason that the boundary between the heavily and the lightly banded regions occurs at a pressure greater than the transition pressure of 130 kbars may be due to the nonisothermal nature of the transformation. In such a case the material may not all

transform at once but would go through a system of mixed phases.² This means that there would be no volume change without increase of pressure, and the volume corresponding to the beginning of the heavily banded region would be at a pressure somewhat higher than 130 kbars, where the transition begins.

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