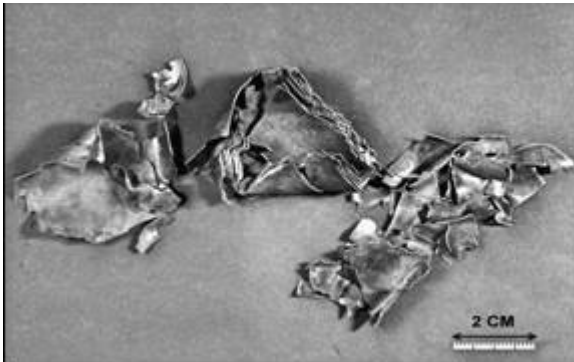


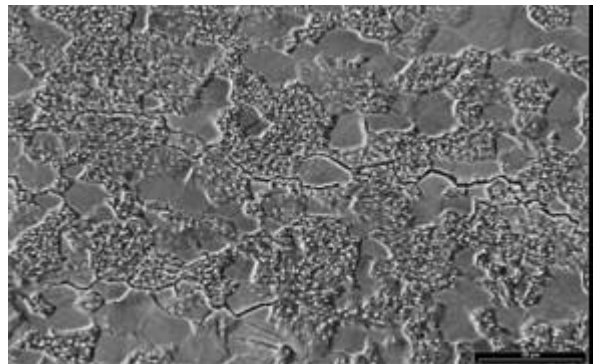
METALLURGICAL LABORATORY FAILURE ANALYSIS CASE STUDY

Description	Catastrophic failure of marine AC generator core
Problem	Co-base alloy generator core failed after overheat event
Analysis	Cobalt alloy core became highly brittle after slow cooling from overheat condition. Brittleness was due to ordering transformation.
Resolution & Recommendations	Use temperature sensors to ensure thermal excursions stay below the order-disorder transition temperature

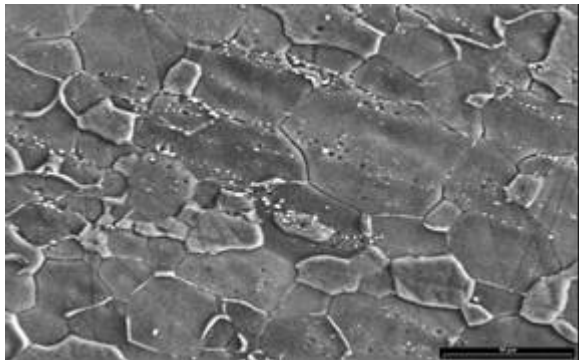
Failure Overview



Cracking in the Matrix



Matrix Microstructure



Brittle Fracure

