

MD-80 series Main Landing Gear oleo strut

# G-DEVR Accident - Time history of relevant recorded parameters

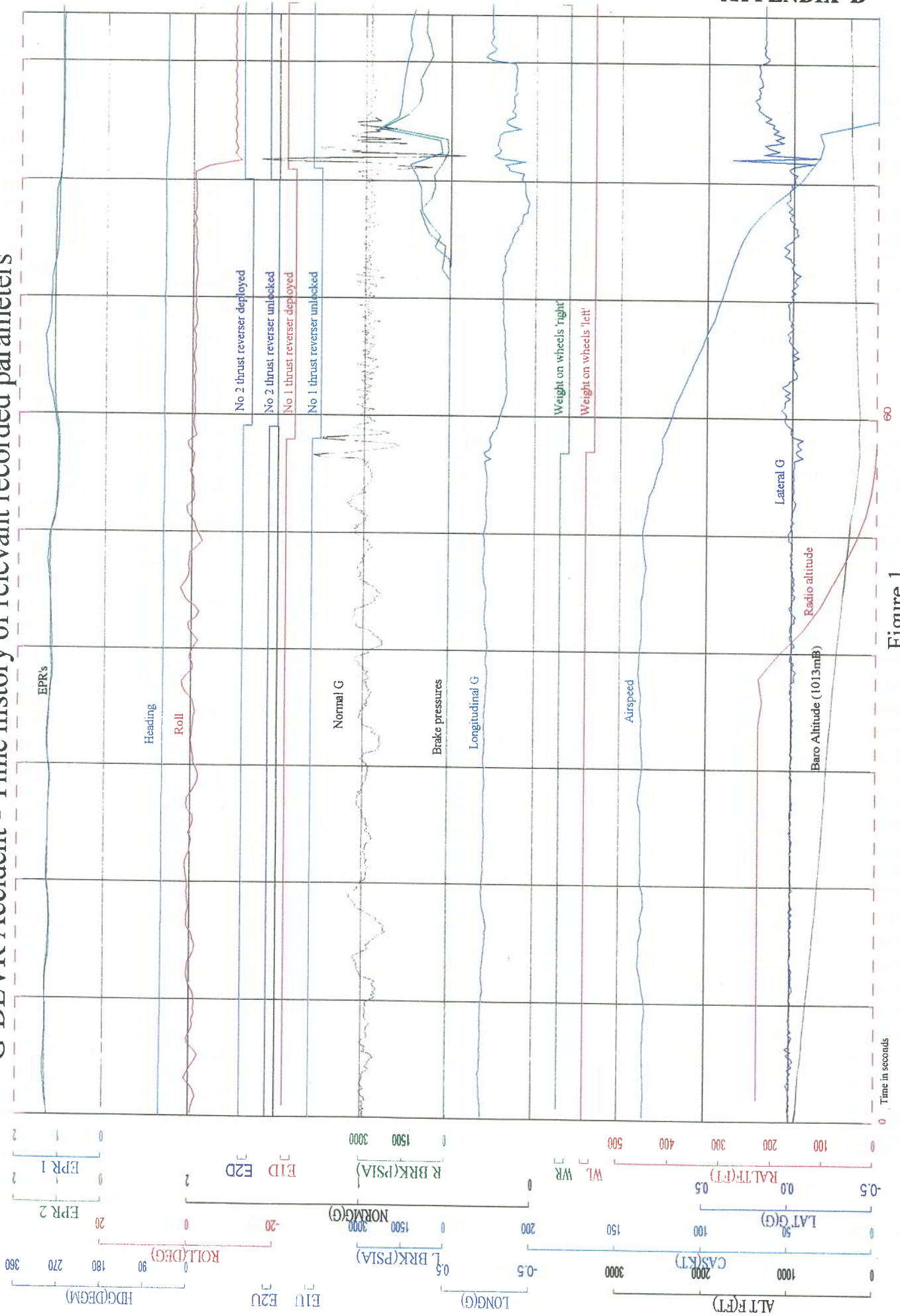


Figure 1

# G-DEVR expanded time history from touchdown until gear collapse

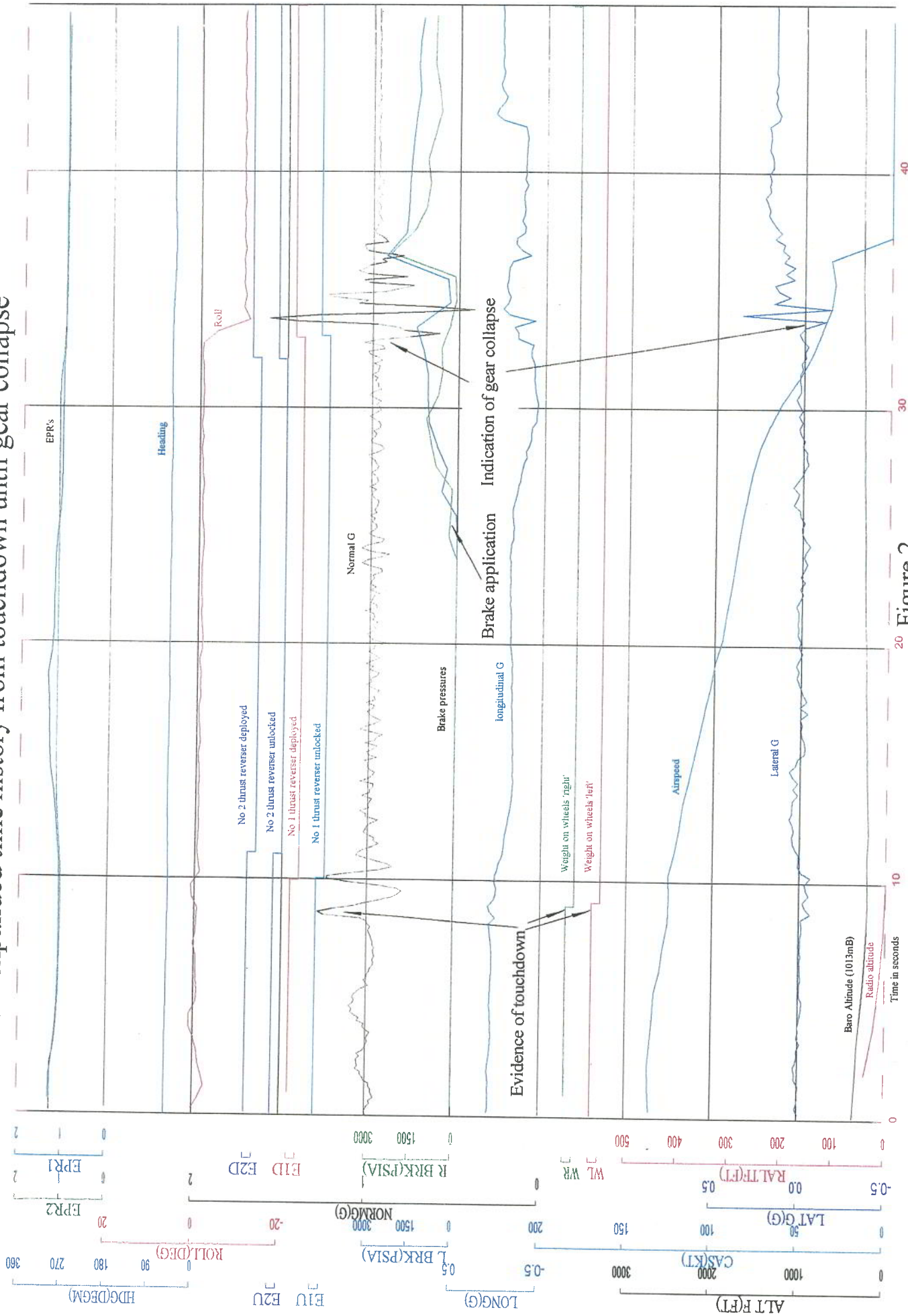
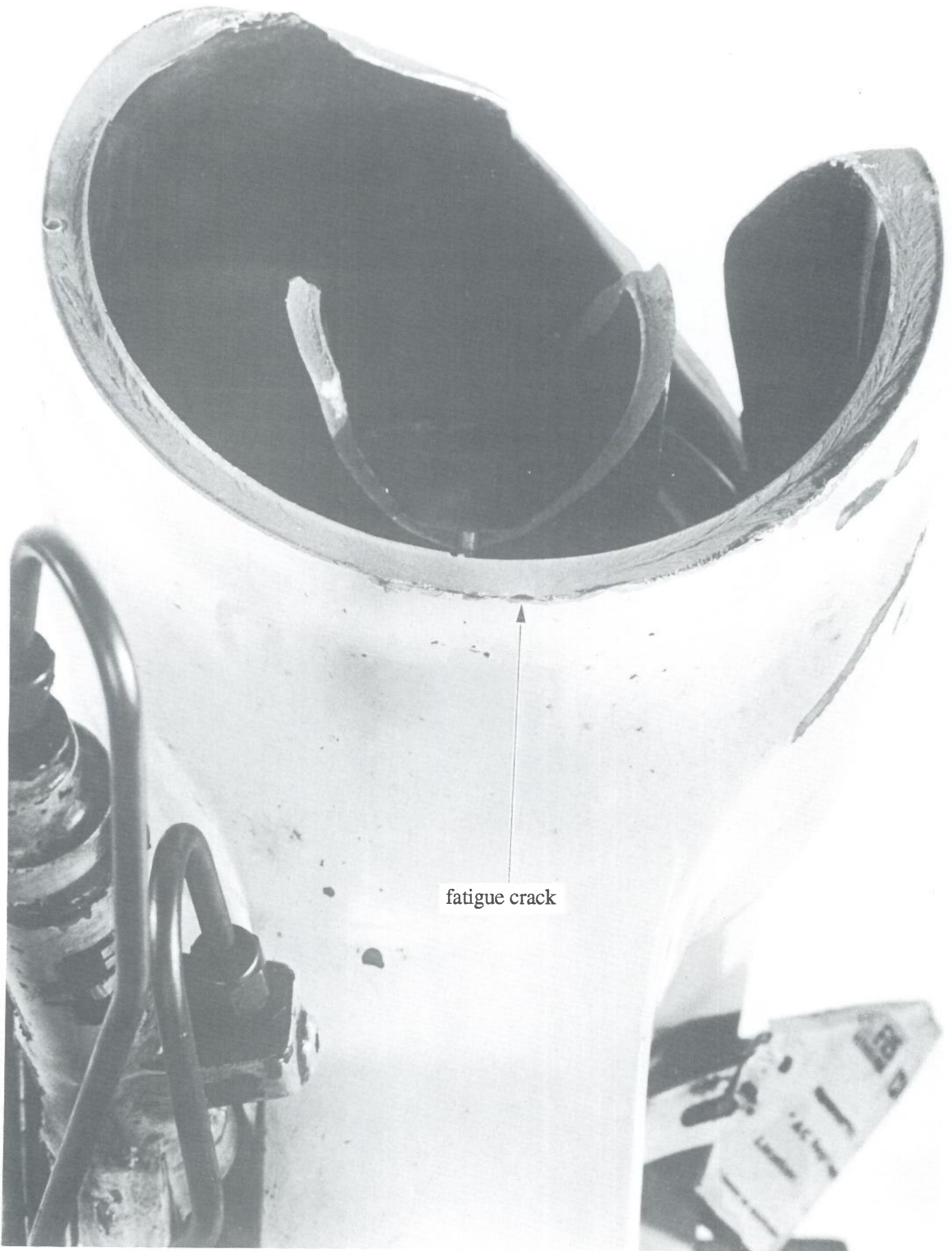


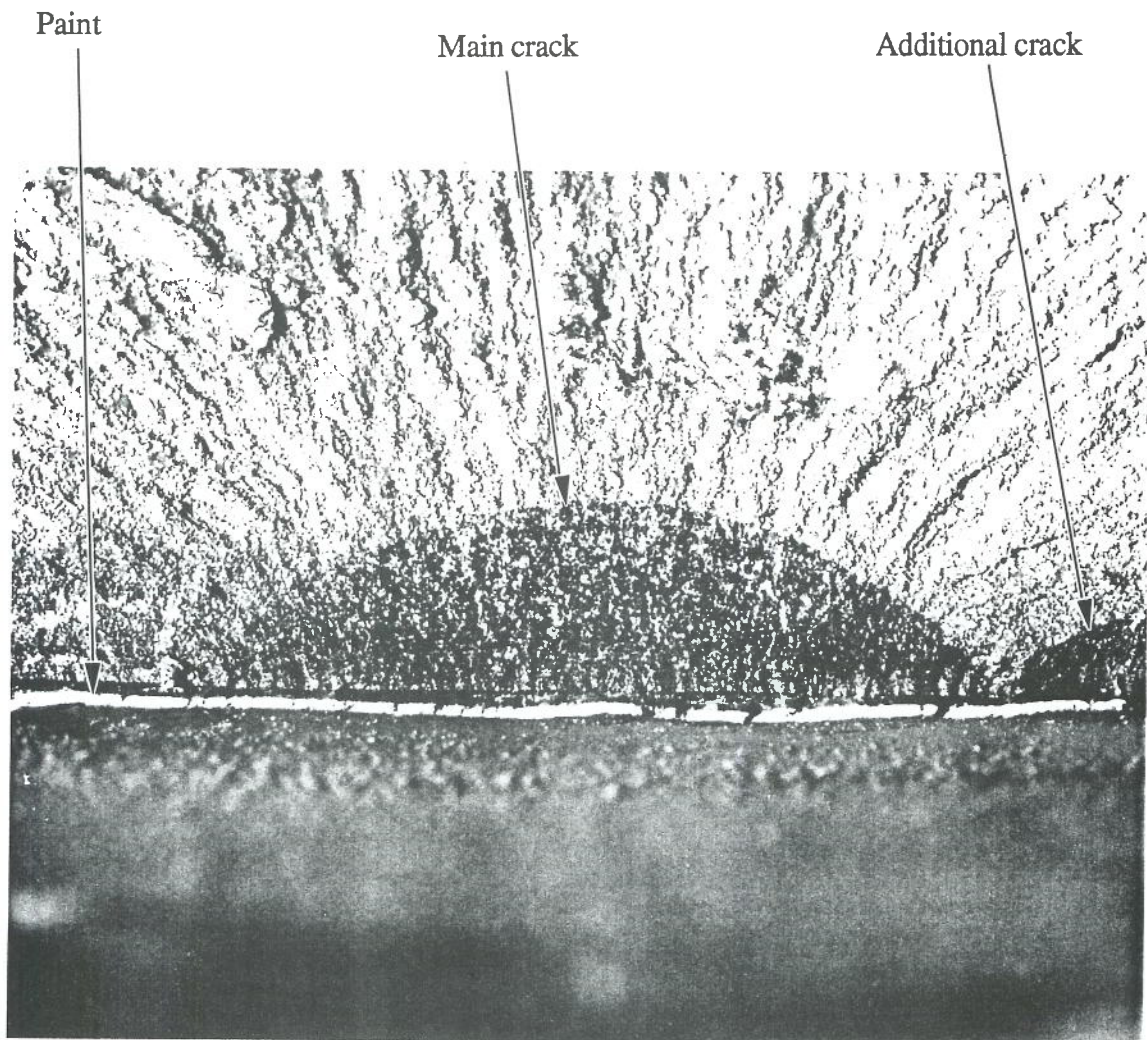
Figure 2



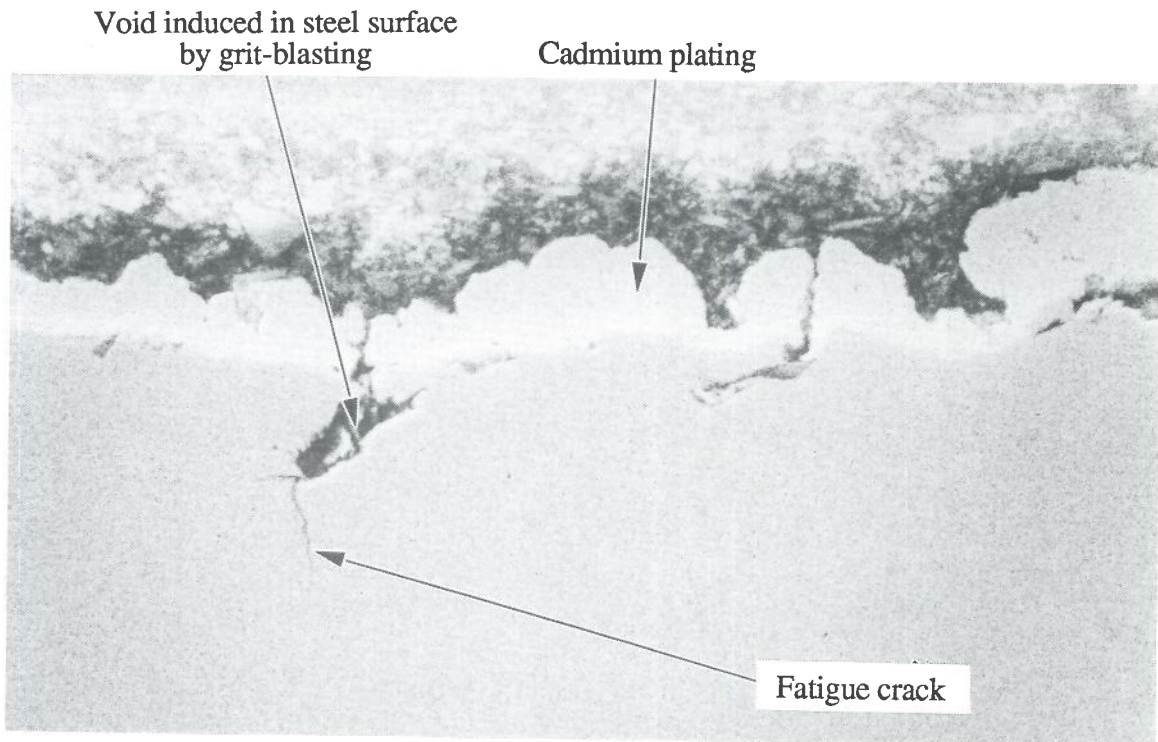
G-DEVR on jacks post-accident. View of left MLG from aft looking forward showing damage to trailing edge flaps



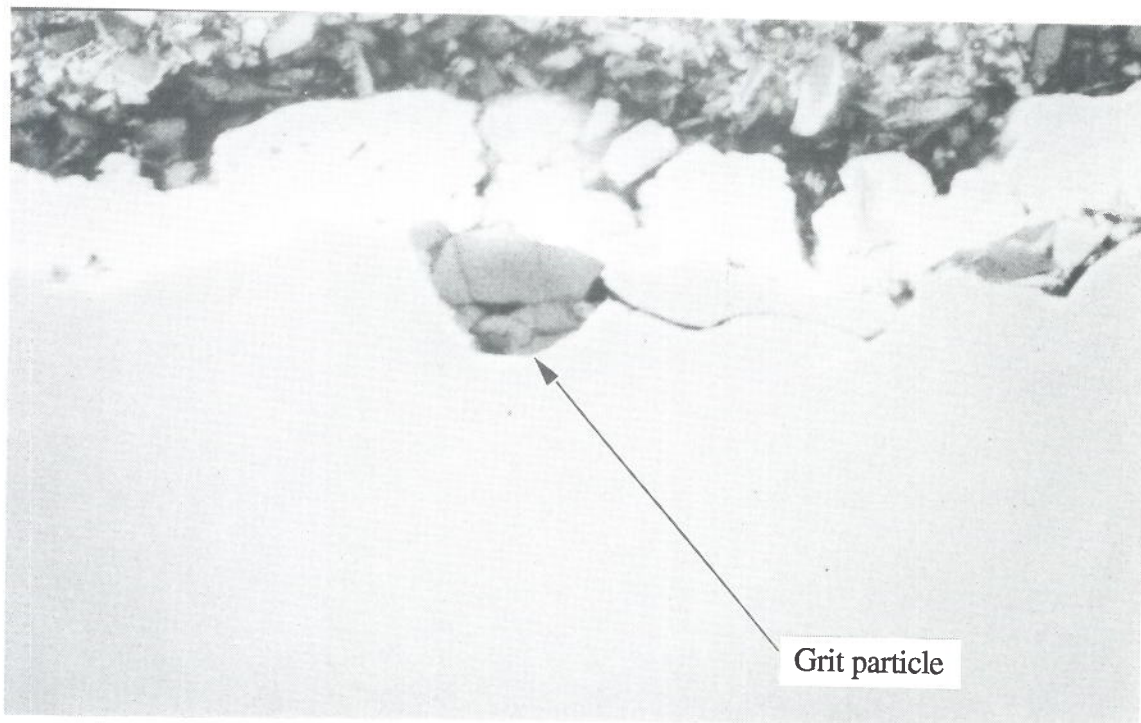
View of lower half of failed MLG cylinder fracture face showing location of pre-existing fatigue crack (arrowed)



Optical microscope view of major fatigue crack (magnification approx x20)



Scanning Electron Microscope view of fatigued area showing irregular surface finish and 'lumpy' appearance of Cadmium plating. Note embryonic fatigue crack growing from larger fold (magnification x1000)



Scanning Electron Microscope view of surface showing particle of alumina grit trapped beneath Cadmium plating (magnification x1900)

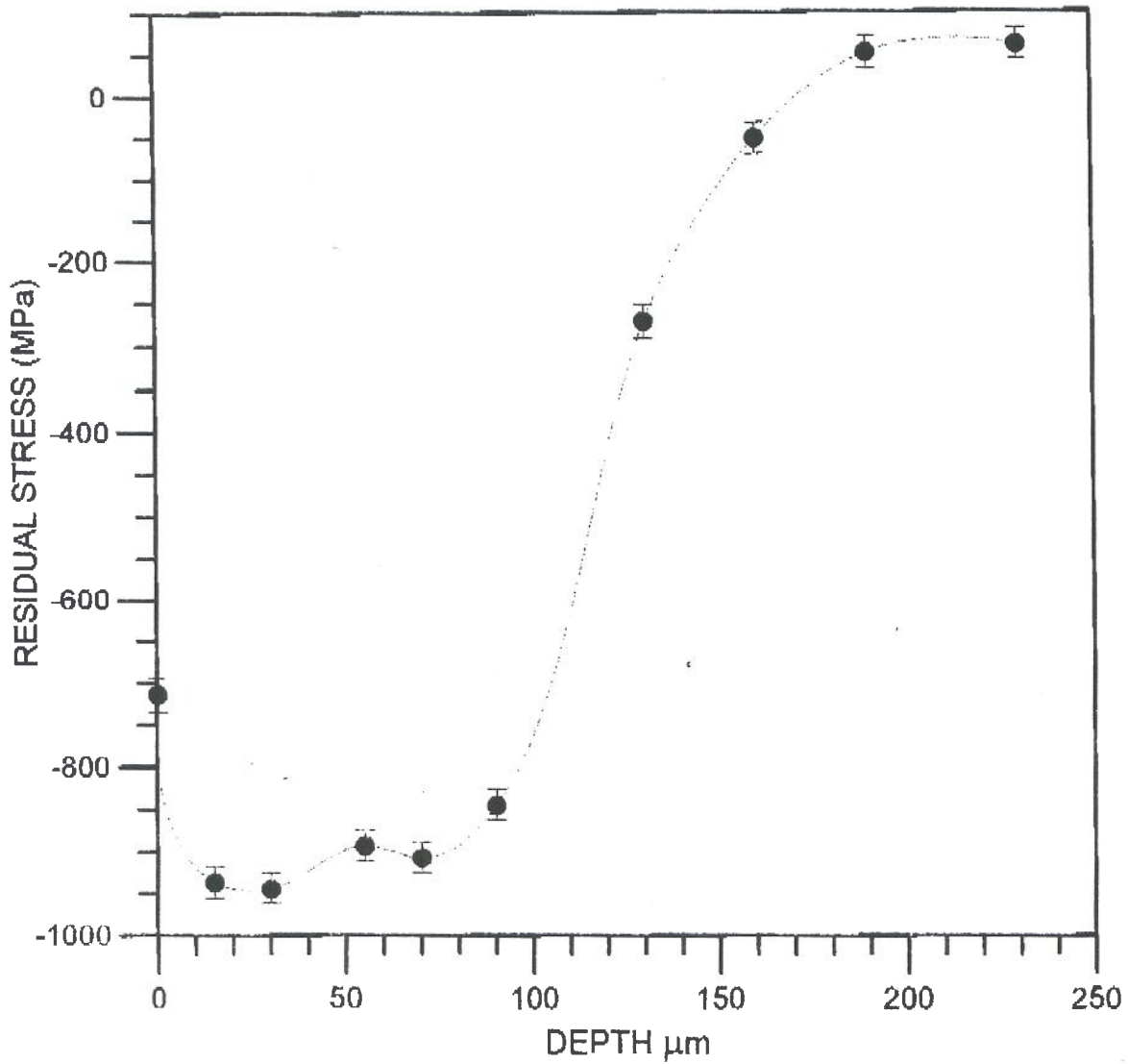
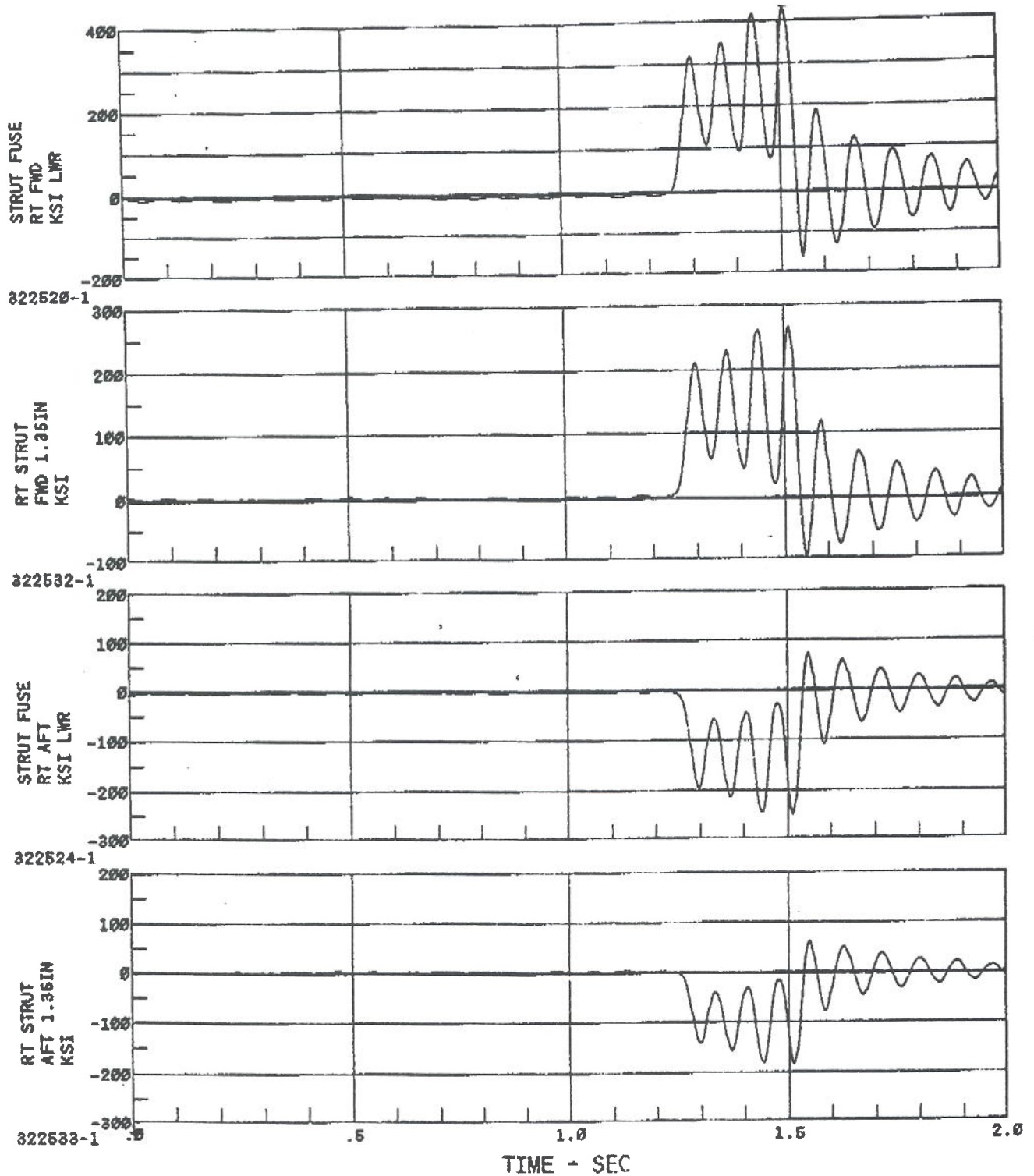


Chart showing results of X-ray diffraction test to measure residual stress in the surface of the cylinder induced by shot peening.





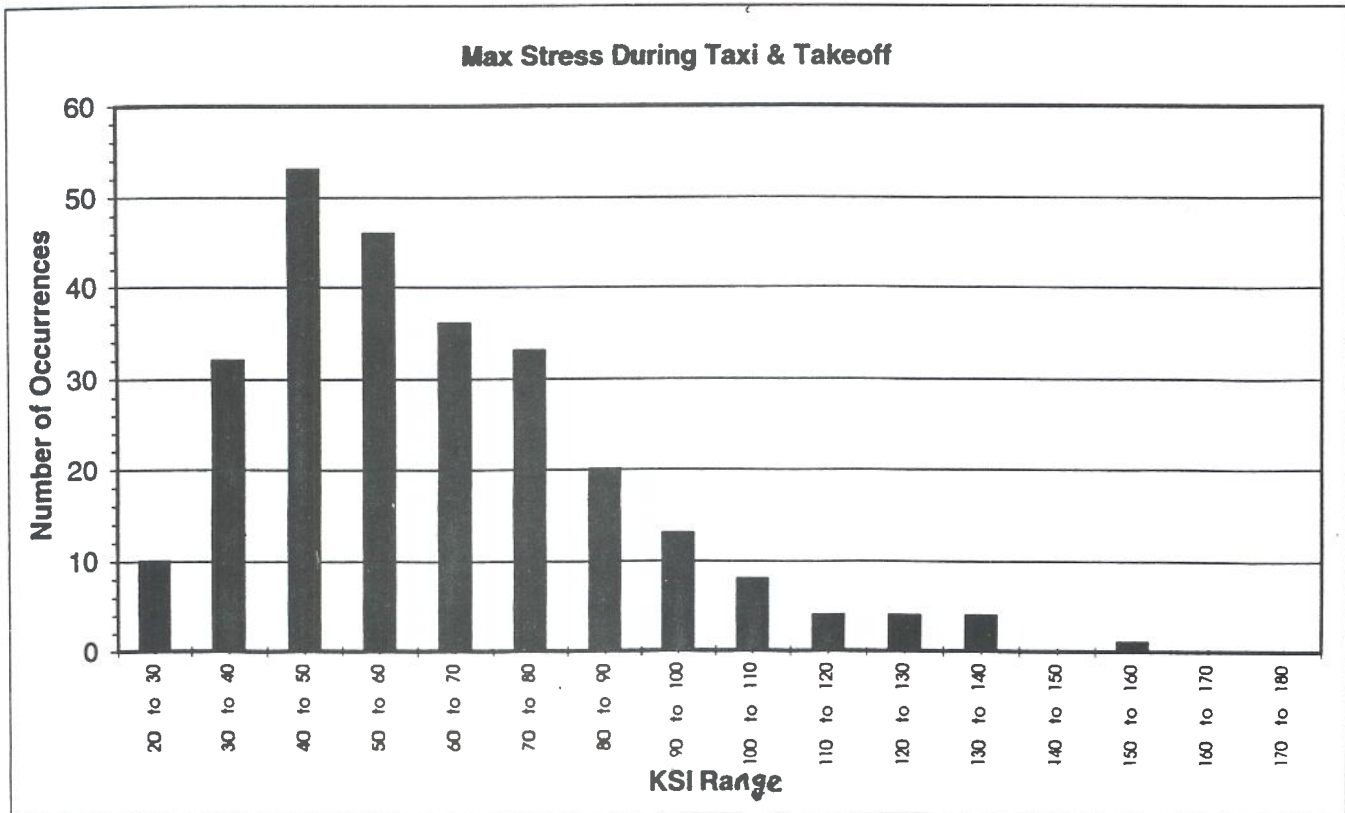
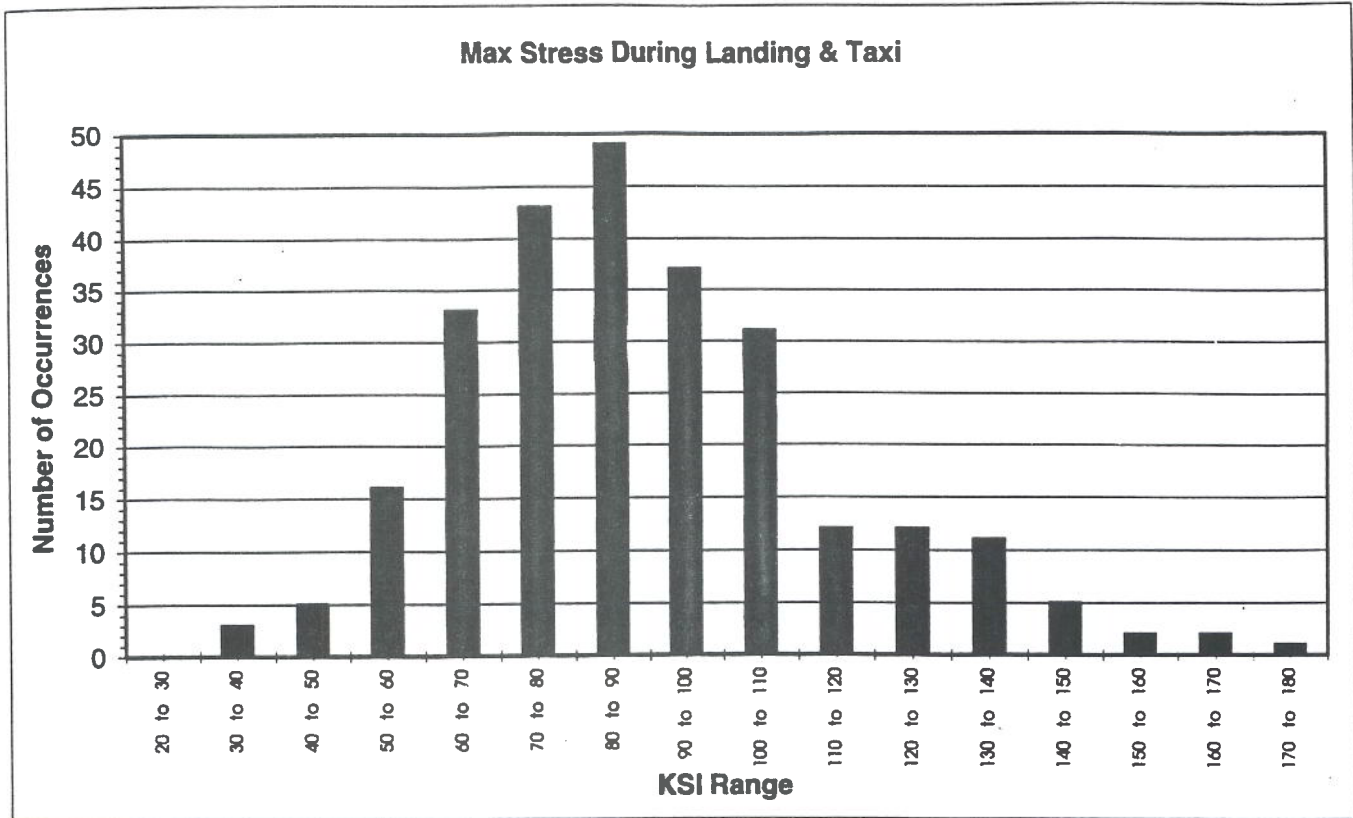
Strain gauge charts showing stresses measured during DAC tests which deliberately induced 'gear walking' on the right main landing gear of a Company MD-87 aircraft.

Notes:

The first two charts record stress (in KSI) against time (secs) for gauges on the front of the leg both on the critical area and slightly displaced from it.

The second two charts record the same information measured on the rear of the leg

(Data Through 10-February-96)



Results of in-service landing gear stress measured by strain gauges fitted to left MLG of G-DEVR after repair