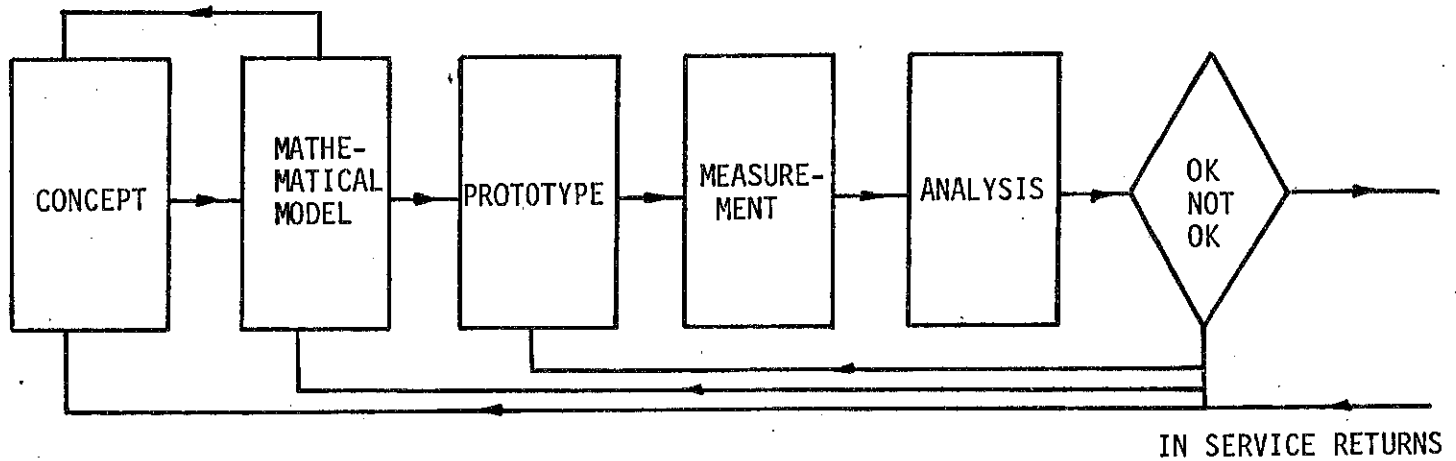


TECHNICAL DEMONSTRATION - MEASUREMENT AND ANALYSIS OF VEHICLE STRUCTURES

This demonstration showed the way in which the Auckland Industrial Development Division's Product Development Group applies the elements of measurement, analysis and computer modelling to the product development cycle (see below) highlighting the use of such techniques in the heavy transport industry.



The use of electronic transducers and measuring equipment (conditioning amplifiers etc.) to gather data concerning the mechanical behaviour of a structure was on display. Here the development of the load securing and the drawbar codes were used as examples. Strain gauged links to measure chain tension and a strain-gauged drawbar were on display along with recording and display equipment.

Analysis techniques used to process this data into a useful form were also shown. These included a range beginning with simple time domain plots (from chart recorders) to complex computer packages such as the "datamyte" fatigue analysis package and a finite element programme.

Finally the use of computer modelling was shown using our finite element package as an example. Stress and displacement plots of a new design of bus frame gave an insight into the power of such techniques to describe the behaviour of complex mechanical structures before they are actually built.