


# Image Cover Sheet

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**TITLE**  
A SUMMARY OF EXPERIMENTAL STRAIN MEASUREMENTS ON CANADIAN PATROL FRIGATES

**System Number:**  
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# **A Summary of Experimental Strain Measurements on Canadian Patrol Frigates**

by

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## **ABSTRACT**

In ongoing efforts by Defence Research Establishment Atlantic to assess the suitability of current fatigue crack initiation and propagation methodologies to naval platforms, a number of experimental trials have been conducted on highly stressed regions on several Canadian Patrol Frigates (CPF). In collaboration with the Naval Engineering Testing Establishment, these experimental investigations have focused on quantifying dockside residential strain states via the recently developed miniature x-ray diffractometer (MXRD) and the applied cyclic strain states due to various ship operations, in the regions of interest. The results of these trials have been employed in advanced fatigue assessments (employing the current Canadian DND fatigue design guidelines (SSCP23), local strain analysis methods and linear elastic fracture mechanics methods) to make predictions of fatigue crack initiation and propagation lives for the weldments of interest. This presentation is intended to review the progress to date and to outline future testing requirements.

