ME541 Fatigue of Materials

Project 1

Using a published (need not be open literature) analysis of a fatigue-related failure, determine the following:

1) Summarize the contents of the report providing synopses of the application, the loading scenario, any inspections, final “failure,” and subsequent forensic engineering.

2) Based on the available information, apply accepted methodologies to the scenario to provide a post fatigue failure analysis of the event. One aspect of this post analysis is to provide insight into design decisions and material behavior. Another aspect is to provide the opportunity verify fatigue analysis methodologies.

3) Write a brief memo report (approximately two pages) that contains the results from 1) and 2). Format of the report should be abstract/executive summary, introduction, results/discussion, conclusions. When possible use graphics to illustrate/reinforce points/arguments made in the main body. Please attach detailed appendices with supporting calculations, etc to which you refer liberally in the main body of the report. Be sure to provide sufficient detail in any reference to allow the user to easily retrieve the necessary information.