

Unconfirmed Minutes - Fatigue Design & Evaluation Committee  
Organizational Meeting  
Honeywell Aircraft Landing Systems, South Bend, IN  
October 24, 2002

The meeting was called to order at 9:10 am by chairman John Hakala.

John briefly went over some administrative items and discussed the agenda for the day.

The first order of business the group wanted to discuss was why the regular October SAE FD&E meeting was cancelled. Many in the group were very upset that the meeting was cancelled. John stated that as of late August, reservations at the hotel Fargo were very limited (9) and some of the division chairs could not get speakers for their division meetings. Is there a lack of interest and why?

A lack of resources does not mean a lack of interest.

Comments included: the structure of the FD&E meetings has become more like a conference than a working group, wrong projects? Should we restructure - eliminate divisions, and work together as one group (including the surface enhancement group.)

The question was asked, what do people want from FD&E? .... Long silence....Are you willing to work on FD&E projects one day a month? We should have focused technical sessions on fatigue design methodology with hands-on-projects.

Al Conle mentioned a material data base / files however, there must be Company buy in (legal reasons). Gary Mauritzson recalled that SAE FD&E managed a material properties database (J1099) 15 yrs. ago. Tom Oakwood (AISI) discussed an ongoing AISI/industry project that is determining fatigue properties for steel alloys. Companies pool funds for fatigue testing and have exclusive rights to the data for two years. AISI is managing the project.

John Hakala stated that he would like to continue and even expand the use of e-mail and the web for FD&E communications. He said it worked well in communicating comments and opinions for this meeting.

Dan Lingenfelser and Mary Wickham (via conference call) discussed the importance of continuing the FD&E short course. They also suggested the virtual prototyping project should continue.

John Hakala presented a proposal from SAE for support of FD&E which included minimum support for \$100 /meeting and extended support for \$250 /meeting (see attached SAE proposal). The group did not show support for the proposal. There was discussion on what support is needed for FD&E. The major support was for publishing standards and papers. The rest of the administration could be handled within the committee.

John Hakala mentioned a communication from Mike Mitichell that suggested FD&E join ASTM E08. However, many comments were made from the group that

ASTM meets in high-cost (hotels) locations and how Company management would view meetings in these locations as a "boondoggle". John also mentioned the possibility of e-mail and web meetings.

Many in the group wanted to focus on projects so much of the agenda was by-passed.

Suggestions for projects included:

- welds - crackgrowth
- castings - porosity, scatter in data, aluminum engine materials - elevated temperatures, cast iron
- FEA confirmation
- what is not being addressed elsewhere.
- advanced design methods
- shorter test -- acceleration, less tests to prove analysis
- lightweight material substitution
- fracture analysis

Mohammad El-Zein voiced interest in weld fatigue and volunteered data for analysis and comparison purposes. Some of the group had concerns about sharing test results due to proprietary issues. Mohammad suggested sanitizing the data.

Ford suggested welded aluminum joints, rivets, weld-bonded joints.

After extended discussions by several member of the group, Gary Mauritzson

presented a short list of projects:

- shorter tests - analysis / accelerated tests, plate w/ hole for verification
- welds - crack growth / verification
- castings - fatigue properties, elevated temp., porosity
- virtual prototyping - shoot it, book it, conference
- short course - high interest, 2-day, take it on the road

Peter Kurath read a letter from Darrall Socie discussing his view of the FD&E committee (see attached letter). The ATV program generated interest but not wide participation. There were no clear customers. What is the next "ground breaking technology" in Fatigue that the companies need, will fund, and we can work on?

The group went back to discussing a main project. The majority of the group supported a joint/weld fatigue modeling project that includes analytical / testing and verification. Hotspot strain analysis - correlate measured strain in region. Mohammad has data on tubular samples he could share. John and Peter suggested a call for papers on the state of technology for weld analysis. It was suggested that the Edison Welding Institute be contacted.

The next meeting will be held in Peoria, IL on April 15 & 16, 2003 hosted by Caterpillar. Joint/weld project will be developed further at this meeting. State of the joint/weld technology will be presented. Possible contributors: Mohamad El-Zein, Michelle Wegscheid, Josh Horn, Al Conle Hari Agrawal, Sherri Shepherd, Dan Lingenfelser, and Mary Wickham. A

wrap-up of the ATV/virtual prototype project by Ric Mousseau. Planning of accelerated testing and analysis of castings will be continued. The second day will include an extended planning session.

Two Fuchs awards will be presented at the April, 2003 meeting.

The agenda for the April 2003 meeting needs to be completed by end of January, 2003.

Respectfully submitted,

Russell Chernenkoff & John Hakala