

SEM round robin:

- We would all like to proceed with a round robin of testing in the US.
- The goals of the round robin are not well defined at the moment.
- an induced stress sample with a known state of stress is preferred for the initial tests. the HYTEC ring and plug is the most likely candidate at the moment.
- all agreed that verifying the initial zero state of stress before assembling the R&P's is necessary. Measuring in these relieved parts by all participants would also be a useful part of the round robin.
- later tests might involve samples where the stress has been generated by some actual industrial process
- Yuri's company will be doing testing of the stress in a peened part; this might work into the round robin at a later point.
- We have settled on a sample to use for the measurements. The sample is an interference fit ring and plug, developed by HYTEC (Mike Prime and Mike Steinzig).
- Wayne and Richard thought they could get the necessary machining done, and HYTEC volunteered to do the strain gaging and assembly
- Richard has access to a diamond turning tool for the aluminum samples.
- A CMM would be useful to measure the dimensions of the finished parts, as a second corroboration on the induced stress.

Additional Ideas:

It would be nice to have one website, where we could store documents, etc, and all have access to them. I will look into doing this from the SEM website. I will set this up so any participant in the round robin can have a link to their website at this location, provided they add a reciprocating link at their website. If anyone has web experience, and wants to help out, let me know.

Assigned Tasks: Complete by July 31, 03

All:

- think about overall goals of this round robin, and write up list for compilation into master document in August.
- try to recruit one other person to help with the organizing of the round robin. This can be someone you will work with directly to achieve tasks assigned to you, or someone else that we can use as a primary resource.
- suggest potential volunteers to help organize a testing group. Currently, we plan to have XRD and hole drilling groups, but would like to include as many others as possible.
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Mike Steinzig: Sample development

- start work on drawing development for steel ring and plugs
- Prepare a package for sending to Richard or Wayne that contains the machining drawings for the aluminum ring and plug.

Wayne Kroenke:

- mail to Mike other round robin results. (done) Check into scanning these two documents for future inclusion on the SEM website.
- Generate a list of hole drilling labs (strain gage and optical, up to 5 each) that would be interested in participating in the measurement phase of the test. Also ask if they would be interested in other kinds of support (financial, etc). Send this info to Yuri for inclusion in his master list.

Richard Rhorer: Non-destructive methods

- Head up organizing non-destructive methods
- recruit organizers for neutron, ultrasonic, barkhausen, etc.
- ask metallurgists about full stress relief in aluminum and steel (best material, procedure for relieving).

James Pineault

- organize XRD labs that would like to participate in round robin
- check to see if others are interested in providing help (financial, organizational, etc) for the round robin.
- present the ring and plug sample to participants for comment
- deliver list of contact names, organizations to Yuri for inclusion in master list

Yuri Kudryavtsev:

- compile a spreadsheet (Excel?) master list of people that had expressed interest in participating in the round robin, including email address, company name, contribution (development of samples, hole drilling measurement lab, XRD measurement lab, general interest, financial support, etc.)
- Generate a list of ultrasonic, barkhausen, neutron diffraction labs (up to 5 of each) that would be interested in participating in the measurement phase of the test. Also ask if they would be interested in other kinds of support (financial, etc). Include in master list.
- Compile one document that includes the various measurement techniques we received information on last year (Mike Hill, slitting, PROTO-XRD, HYTEC-ESPI hole drilling, Bettis/Bechtel-strain gage hole drilling. Contact each of these people and ask if they are still interested in participating, and see if the ring and plug sample is applicable for their measurement technique.

Tasks for August: (Preliminary)

- generate master document that has at least first draft of goals, schedule, procedure for producing samples, participants, etc for the SEM round robin.
- round up other round robin results (NPL in UK, SEM, Gibmeir/ECRS and make available from the new SEM/RS website, if it has come to pass.

- identify machining locations for samples, obtain materials, stress relieve materials, initial round of measurements on stress relieved materials.

Task for September and October: (Preliminary)

- machine samples, and send to HYTEC for assembly
- assemble samples