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January 6, 2006

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## Sequence VIII November 2005 Surveillance Panel Agenda San Antonio, TX Southwest Research Institute November 10, 2005

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### Call to Order

At the request of its members the SP meeting was called to order by the Chairman, Fred Gerhart of SwRI, earlier than originally planed. The Agenda was presented; a copy is shown in Attachment #1

No membership changes were noted and the attendance list is shown in Attachment #2.

The secretary (Charlie Leverett of Intertek) asked for the approval of previous minutes and there were no objections. All minutes are posted on the TMC web site.

Bill Buscher of SwRI volunteered to record Action Items and motions. These may be found in Attachment #3.

### **TMC Report – Rich Grundza**

An abbreviated report was given by Rich, detailed reports for all tests types can be found on the TMC web site.

### **TEI/CPD Report – Zack Bishop**

TEI gave a presentation (shown in Attachment #4) covering:

- Current inventory of 11-93 rod bearings (approx. 1558 sets)

- Review of Storage Oil Replacement

- Storage oil Lead Analysis

- Outcome of possible rebroaching of 11-93 bearings

- Summary of production of a new batch of H-24 bearings

- Details of funding for the new batch

- Discarding the 11-93 batch

- Informed the SP of the Annual Parts Order for 2006

Following the discussion the following motion and action items were made:

***Motion** – Proceed with a production run of a new batch of connecting rod bearings as per TEI's CPD report.*

*Dwight Bowden / Charlie Leverett / 10 For 1 Against 2 Waive*

***Action Item** – Surveillance Panel to develop a plan for bringing new connecting rod bearing batch into the system. To be completed by May 2006 surveillance Panel meeting.*

### **New Business**

The following action items were assigned:

Action Item – Surveillance Panel to request the industry for GF-4 and GF-5 quality reference oils for the VIII test.

Action Item – Surveillance Panel to continue to look at improved bearing storage methods.

Action Item – TEI to issue an estimated timeline for the production run of the new batch of connecting rod bearings.

## Review Scope and Objectives

Fred presented these and they were reviewed and revised as shown below:

### **SEQUENCE VIII SURVEILLANCE PANEL SCOPE AND OBJECTIVES**

#### SCOPE

The Sequence VIII Surveillance Panel is responsible for the surveillance of the Sequence VIII test procedure (ASTM D 6709-01). This panel works in conjunction with Test Engineering Inc. (TEI) who supplies the test hardware. Improvements in the test operation, test monitoring, and test validation will be accomplished through continual communications with the test hardware supplier, the ASTM Test Monitoring Center, the Technical Guidance Committee, and the ACC Monitoring Agency. The panel will maintain an up-to-date evaluation of the precision of the VIII reference oils and will report this precision and test severity levels to D02.BO.01 Oil Classification Panel and section.

These combined efforts will help to assure that the Sequence VIII test method will continue to provide the industry with a precise method for evaluating a lubricant's ability to protect against copper-lead bearing weight loss and to evaluate the viscosity stability of multi-viscosity-grade oils.

#### OBJECTIVES

Continue monitoring of lead leaching rate in storage oil	Ongoing
New bearing batch decision	Done
Plan for bringing new bearing batch into the system	May 2006
Request GF-4 and GF-5 reference oils	May 2006
Continue to look at improved bearing storage methods	Ongoing

**Next Meeting**

At the call of the Chairman

**Adjournment**

Meeting adjourned at 11:30

**Sequence VIII November 2005 Surveillance Panel Agenda**  
**San Antonio, Tx**  
**Southwest Research Institute**  
**November 10, 2005**  
**9AM -12PM**

1. Call to Order - Fred Gerhart
  - a. Motion and Action Items Recorder
  - b. Membership Changes
  - c. Attendance Sign-in
  
2. TMC – Rich Grundza
  - a. Review industry TBWL action severity alarm
  - b. Lead in storage oil versus completion date
  
3. CPD Report
  - a. Any parts shortages?
  - b. Test bearing inventory by lot.
  - c. Any price increases on existing test bearings or other parts?
  - d. Any differences in lead leaching rate between combined laboratory storage methods versus TEI during recent bearing returns?
  - e. New bearing production report
    - i. Cost estimate
      1. Bearings
      2. H24 strip stock
    - ii. Move forward with production?
    - iii. Storage method
  - f. Next annual order?
  
4. New Business
  
5. Review Scope and Objectives
  
6. Next Meeting
  
7. Adjournment

**ASTM L-38 / SEQUENCE VIII SURVEILLANCE PANEL  
MEMBERSHIP LIST**

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## **Motions and Action Items**


### **As Recorded at the Meeting by Bill Buscher**

1. Motion – Proceed with a production run of a new batch of connecting rod bearings as per TEI's CPD report.  
**Dwight Bowden / Charlie Leverett / 10 For 1 Against 2 Waive**
2. Action Item – Surveillance Panel to develop a plan for bringing new connecting rod bearing batch into the system. To be completed by May 2006 surveillance Panel meeting.
3. Action Item – Surveillance Panel to request the industry for GF-4 and GF-5 quality reference oils for the VIII test.
4. Action Item – Surveillance Panel to continue to look at improved bearing storage methods.
5. Action Item – TEI to issue an estimated timeline for the production run of the new batch of connecting rod bearings.




### CPD Report to Sequence VIII Surveillance Panel November 10, 2005

- 11-93 Rod Bearing Batch
  - Lot Codes 11, 12, 13, 14 and 15 are all in Argon storage
  - Currently issuing Lot Code 11
  - Inventory (as of 11/10/2005)
    - Lot 11 = 97 sets
    - Lot 12 = 427 sets
    - Lot 13 = 448 sets
    - Lot 14 = 416 sets
    - Lot 15 = 170 sets
- Total in storage at TEI = 1558 sets (10 to 15 year supply)



### CPD Report to Sequence VIII Surveillance Panel November 10, 2005


- 11-93 Batch Rod Bearing Storage Oil Replacement
  - Old EF-411 oil drained from bearings and saved in bulk storage containers by lot code.
  - Lot Codes 11, 12, 13, & 14 placed in new containers and submersed in Synfluid PAO 8 cSt oil (July 15, 2005).
  - Lot Code 15 placed in new containers and submersed in new EF-411 oil (July 18, 2005).
  - All bearings then placed in Argon storage at TEI.
  - Analysis of the new bearing storage oil was performed on October 28, 2005.
  - Analysis of the drained storage oil was also performed.
  - Periodic analysis of the oil from the newly containerized bearings will be conducted and data will be presented to the Surveillance Panel.



### CPD Report to Sequence VIII Surveillance Panel November 10, 2005

#### Analysis of Rod Bearing Storage Oil


Lead (ppm)		
	Original EF-411 (Lot Codes 11, 12, 13, 14 & 15)	New PAO (Lot Codes 11, 12, 13, & 14) New EF-411 (Lot Code 15) Storage Oils Changed in July 2005
	Set "A"	Set "A"
	9/2/2004	10/28/2005
Lot 11	354	3
Lot 12	699	3
Lot 13	768	4
Lot 14	368	4
Lot 15	147	1




### CPD Report to Sequence VIII Surveillance Panel November 10, 2005

#### Analysis of Rod Bearing Storage Oil


Lead (ppm)		
	Original EF-411 (Lot Codes 11, 12, 13, 14 & 15) Drained in July 2005	Original EF-411 Lot Code 11 Drained in July 2005
Lot Codes	All Drain Oil Combined in One Container 11/7/2005	All Drain Oil from Test Lab 11/7/2005
Lot 11	235	234
Lot 12	269	N/A
Lot 13	301	N/A
Lot 14	278	N/A
Lot 15	178	N/A



### CPD Report to Sequence VIII Surveillance Panel November 10, 2005




New EF-411    vs.    Aged EF-411    vs.    New PAO



### CPD Report to Sequence VIII Surveillance Panel November 10, 2005

- Federal Mogul response relating to the rebroaching of 11-93 bearings:
  - Would be difficult but not impossible.
  - Increased clearances between the bearing and crankshaft journal after the 2<sup>nd</sup> broaching would require new journal dimensions and would need to be calculated after broaching.
  - Would recommend going with a new bearing batch rather than rebroaching.



**CPD Report to  
Sequence VIII Surveillance Panel  
November 10, 2005**

• **Federal Mogul response relating to "drop dead" date for making a new batch of Lead containing bearings:**

-New management is now in place and has a different view on implementing phase out of Lead.

-Facility in Mexico will be able to process Lead containing bearings for a number of years – long term plan will be to eventually phase out Lead.



**CPD Report to  
Sequence VIII Surveillance Panel  
November 10, 2005**

• **Federal Mogul response relating to making a spool of H-24 bearing material for storage at TEI:**

-Not a problem to make a "coil" of H-24 flat strip.

-Dimensions of a coil are approximately 12" in width by 48" in diameter.

-Coil could be stored in Argon at TEI. Another storage cabinet would need to be ordered for this purpose.



**CPD Report to  
Sequence VIII Surveillance Panel  
November 10, 2005**

• **New Batch of H-24 Bearings:**

-Cost to have 2500 bearing sets manufactured, inspected, placed in containers with preservative oil and stored in Argon is estimated to be approximately \$300,000.

-TEI would offer to pay 1/3 of this cost and ask that the industry pay the other 2/3. Since this would be an upfront cost, TEI proposes that industry costs be paid in the form of a surcharge on the next annual order after the connecting rod bearings have been manufactured. The cost of each bearing set would include the bearing cost + surcharge. The surcharge will be determined based on the quantity of bearings ordered (\$150,000.00 / quantity of bearings ordered = Surcharge per bearing). Subsequent annual orders would not require a rod bearing surcharge.



**CPD Report to  
Sequence VIII Surveillance Panel  
November 10, 2005**

• **Discarding Old Batch of H-24 Bearings (11-93):**

-Cost to industry to discard the 11-93 bearing supply will be approximately \$200,000.

-TEI has not made any industry reimbursement plans since a decision has not been made yet to make a new batch of H-24 bearings.



**CPD Report to  
Sequence VIII Surveillance Panel  
November 10, 2005**

• **Annual Parts Order**

-A letter will soon be mailed to labs soliciting Sequence VIII parts requirements for calendar year 2006. The letter will include a list of parts currently in TEI inventory which are frequently ordered. This process worked smoothly for 2005 parts requirements and TEI was able to procure all items required to meet Sequence VIII testing needs for calendar year 2005.

-TEI will continue its efforts to procure vendors to manufacture required parts to meet the industry GF-5 needs for the Sequence VIII test.

