



100 Barr Harbor Drive ■ PO Box C700 ■ West Conshohocken, PA 19428-2959  
Telephone: 610-832-9500 ■ Fax: 610-832-9555 ■ e-mail: service@astm.org ■ Website: www.astm.org

### **Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS**

*Chairman:* W. JAMES BOVER, ExxonMobil Biomedical Sciences Inc, 1545 Route 22 East, PO Box 971, Annandale, NJ 08801-0971, (908) 730-1048, FAX: 908-730-1197, EMail: wjbover@erenj.com  
*First Vice Chairman:* KENNETH O. HENDERSON, Cannon Instrument Co, PO Box 16, State College, PA 16804, (814) 353-8000, Ext: 0265, FAX: 814-353-8007, EMail: kenohenderson@worldnet.att.net  
*Second Vice Chairman:* SALVATORE J. RAND, 221 Flamingo Drive, Fort Myers, FL 33908, (941) 481-4729, FAX: 941-481-4729  
*Secretary:* MICHAEL A. COLLIER, Petroleum Analyzer Co LP, PO Box 206, Wilmington, IL 60481, (815) 458-0216, FAX: 815-458-0217, EMail: macvarlen@aol.com  
*Assistant Secretary:* JANET L. LANE, ExxonMobil Research and Engineering, 600 Billingsport Rd, PO Box 480, Paulsboro, NJ 08066-0480, (856) 224-3302, FAX: 856-224-3616, EMail: janet.l.lane@email.mobil.com  
*Staff Manager:* DAVID R. BRADLEY, (610) 832-9681, EMail: dbradley@astm.org

November 28, 2001

Reply to: Richard Grundza  
ASTM Test Monitoring Center  
6555 Penn Avenue  
Pittsburgh, PA 15206  
Phone: 412-365-1031  
Fax: 412-365-1047  
Email: reg@tmc.astm.cmri.cmu.edu

### **Unapproved Minutes of the November 14, 2001 Sequence IVA Surveillance Panel Meeting Held in San Antonio, Texas**

This document is not an ASTM standard; it is under consideration within an ASTM technical committee but has not received all approvals required to become an ASTM standard. It shall not be reproduced or circulated or quoted, in whole or in part, outside of ASTM committee activities except with the approval of the chairman of the committee having jurisdiction and the president of the society. Copyright ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

The meeting was called to order at 8:00 am by Chairman Larry Bendele. A membership list was circulated for members and guests to sign in. It's shown in Attachment 1.

#### **Membership Changes**

Bill Buscher Jr. will no longer be representing Texaco. He will retain his membership representing Buscher Consulting Services.

#### **Agenda Review**

Ben Weber is the new Action and Motion recorder.

Richard Grundza is the new Secretary.

The Agenda was accepted as attached (Attachment 2).

### **Meeting Minutes Status**

May 24, 2001 Approved. Motion to approve, Dwight Bowden, second by Carl Stephens.

### **TMC Reference Oil Report**

TMC report can be found on the TMC ftp site.  
<ftp://tmc.astm.cmri.cmu.edu/docs/gas/sequenceiva/semiannualreports/>

Mike Kasimirsky of the TMC presented the Semiannual Report for the test period of April 1, 2001 through October 1, 2001 (Attachment 3). Mike indicated that the industry began the period in severity action alarm, sounded a warning alarm and then remained in control for the period. Precision was in control for the period.

Dave Glaenzer expressed concerns about the recent measurement changes that will be implemented through an information letter. His lab had experienced a situation where the "no form" method could not be performed as described. After some discussion, an action items was assigned to the Surveillance Panel Chair to work with the lab to resolve the measuring discrepancy and suggest any clarifications to the information letter.

Gordon Farnsworth initiated a discussion on test severity. He stated that it appeared to him that at least two labs were significantly mild of target. Gordon asked if any labs had severity adjustments. Mke commented that he wasn't sure but he thought a couple of labs may have severity adjustments. Two labs did acknowledge that they had severity adjustments in effect.

Mike presented the most recent data on reference oil 1007. There are presently 11 results on this oil. The targets will be recalculated at 20 and 30 tests.

Introduction of reference oil 1006-2 was discussed. The panel agreed to introduce this as soon as possible. Labs would conduct a donated test on a calibrated stand at their earliest possible convenience. The calibration period would be extended by one test to compensate for the donated test.

Discussion on the introduction of the category reference oil was initiated by Gordon Farnsworth. The supplier result for this oil was 22.31 $\mu$ m. The panel agreed to obtain 100 gallons of the category reference oil for possible usage rate of 10% of the reference oil tests. This oil will be introduced after the reblend of 1006 is introduced.

Mike Kasimirsky presented the results of a survey he had done which documented the RAC coolant flow rates at various labs and stands (Attachment 4). After considerable discussion, the panel agreed to investigate the differences between RAC coolant flow and work to ensure similar flows between labs. Each lab is to forward a schematic of their system, detailing fittings, linesize, pump flow and coolant pressure, to the Surveillance panel chair, to attempt to make a common system. Mike Kasimirsky made a motion that a conference call be made to address a common RAC coolant system, once the Surveillance Panel Chair has received all the laboratory schematics. The acceptance of the TMC report was moved by Mike Kasimirsky and seconded by William Buscher III. The report was approved by voice vote with no negatives.

### **RSI Report**

Rick Oliver from RSI presented the candidate severity and precision data for the report period April 1, 2001 through September 30, 2001 (Attachment 5) Candidate precision is performing at historical levels.

Rick Oliver moved acceptance of his report, which was seconded by Dwight Bowden. The report was approved by voice vote with no negatives.

### **Fuel Suppliers Report**

Bob Rumford updated the panel on the status of the fuel for the Sequence IVA test. A new blend was shipped to labs last month. This blend was reviewed and approved by the TMC. There has been no aging or degradation of the fuel in storage (Attachment 6). There is approximately an eight month supply on hand. Fuel data will be placed on the TMC website. Bob Rumford moved acceptance of his report, which was seconded by Carl Stephens. Acceptance of the report was approved unanimously by voice vote.

### **Test Engines and Kit Hardware**

A representative from Nissan was unable to attend the meeting. Larry Bendele contacted Nissan regarding availability of hardware for the future. This engine will be available until 2008. Larry also explained that Nissan will no longer accept returns of parts, as they no longer have a use for the parts unacceptable for testing. A copy of Nissan's response to Larry is included as Attachment 7. After some discussion, the panel agreed to contact Nissan to see if preliminary tests may be run on 5 to 10 cams to attempt to determine severity of the 2001 kits before release by Nissan. This is response to several labs commenting that they have as many as 50 cams which may be unusable due to severity problems. Bill Buscher III noted that all of the 2000 heads he had received to date were shipped bare. These were to be complete head assemblies. Nissan did do a part return on these items. Labs are to review their 2000 heads that were received to verify that the heads are complete.

### **Exhaust Backpressure**

At least one lab expressed concerns about being able to control exhaust backpressure during step 8 of the break in procedure. After some discussion, Dave Glaenzer moved that the control point for exhaust backpressure for steps 7 and 8 of the break in procedure be moved from 103.5 kPa (abs.) to 105.5 kPa (abs.). Bill Buscher III seconded. This change will be effective November 11, 2001. This change was approved unanimously by voice vote.

### **Sequence IVA Standard**

Hap Thompson, facilitator for the Sequence IVA test method provided copies of Draft 5 to the panel for review and comment. (Note: Due to the size, this document was not included in the minutes). Hap commented that a couple of Annexes have not been included, specifically the Nissan engine Manual, which requires permission from Nissan to include in the method. Hap hopes to begin balloting the method through subcommittee D02.B0.01 in January, 2002. A motion was made by Mike Kasimirsky and seconded by Bill Buscher III to have members review and comment on the method by December 10, 2001. Once comments are incorporated, an information letter will be issued to update the procedure currently being used. This was approved unanimously by voice vote.

### **Old Business**

There was no old business

### **Preparations for GF-4**

Larry solicited the group for potential improvements for the Sequence IVA test to be implemented for the introduction of GF-4. Gordon Farnsworth commented that GF-4 is to be implemented for the 2004 model year, and that the final draft will be published late in 2002, so that there is a very finite amount of time to refine the procedure and gather the data to support it. Mike Kasimirsky commented one potential

Sequence IVA Surveillance Panel Meeting  
November 14, 2001 San Antonio, TX

improvement mentioned some time ago was flame hardened cams. Gordon reiterated that any changes must be in place in early 2002. Gordon also commented that the panel may need to obtain a low phosphorus oil, as the GF-4 limit for phosphorus may be a maximum of 0.05 %. Larry commented that one of the IIIG demonstration oils may be made available for this purpose. Bill Buscher Jr. offered to act as a liaison at the December ILSAC meeting to report back timelines for implementation of GF-4. Larry informed the panel that it may be possible to measure wear area under a baseline. Information regarding this measurement is included as attachment 8. After additional discussions, it was decided to form a task force to study and recommend procedure enhancements for GF-4. This task force will be headed by Bill Buscher III.

#### **New Business**

There was no new business.

#### **Scope and Objectives**

Scope and Objectives were reviewed and modified by the panel as necessary. A marked up copy of the revised scope and objectives is included (Attachment 9). A list of motion and action items is also included (Attachment 10).

#### **Next Meeting**

Next meeting is at the call of the chairman.

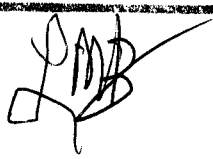


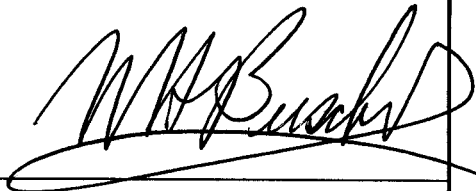


#### **Adjourn**

The meeting was adjourned at 10:12 am.

**MEMBERSHIP  
ASTM IVA SURVEILLANCE PANEL**

Attachment	1
Page	1 of 7
Reference	IVA-11-01

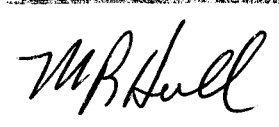
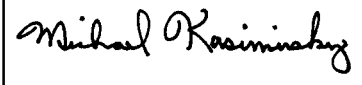




November 13, 2001

NAME	COMPANY-ADDRESS-PHONE-FAX-EMAIL	SIGNATURE
Bendele, Larry	SOUTHWEST RESEARCH INSTITUTE 6220 Culebra Road San Antonio, TX 78238-5166 Phone No.: 210-522-2824 Fax No.: 210-684-7530 Email: lbendele@swri.org	
Bowden, Dwight	OH TECHNOLOGIES, INC. 9300 Progress Parkway P.O. Box 5039 Mentor, OH 44061-5039 Phone No.: 440-354-7007 Fax No.: 440-354-7080 Email: dhwbowden@ohtech.com	
Buck, Ron	TEST ENGINEERING, INC. 12718 Cimarron Path San Antonio, TX 78249 Phone No.: 210-690-1958 Fax No.: 210-690-1959 Email: rbuck@testeng.com	
Buscher III, Bill	SOUTHWEST RESEARCH INSTITUTE 6220 Culebra Road San Antonio, TX 78238-5166 Phone No.: 210-522-6802 Fax No.: 210-684-7523 Email: wbuscher@swri.edu	
Buscher, Jr., Bill	<del>TEXACO GLOBAL PRODUCTS</del> P.O. Box 112 Hopewell Jct, NY 12533 Phone No.: 914-897-8069 Fax No.: 914-897-8069 Email: buschwa@aol.com <i>Buscher Consulting Services</i>	
Clark, Gil	HALTERMANN CONSULTANCY 117 E. Church Street Lake Orion, MI 48362 Phone No.: 248-693-6434 Fax No.: 248-852-4957 Email: sdclark63@juno.com	<i>Please REMOVE</i>
Farnsworth, Gordon	INFINEUM 1900 E. Linden Avenue P.O. Box 735 Linden, NJ 07036 Phone No.: 908-474-3351 Fax No.: 908-474-3637 Email: gordon.farnsworth@infineum.com	
Glaenger, David	ETHYL CORPORATION 500 Spring St. P.O. Box 2158 Richmond, VA 23217-2158 Phone No.: 804-788-5214 Fax No.: 804-788-6358 Email: dave glaenger@ethyl.com	

**MEMBERSHIP  
ASTM IVA SURVEILLANCE PANEL**

Attachment	1
Page	2 of 7
Reference	IVA-11-01


November 13, 2001

NAME	COMPANY-ADDRESS-PHONE-FAX-EMAIL	SIGNATURE
Hull, Mark	LUBRIZOL CORPORATION 29400 Lakeland Blvd. Wickliffe, OH 44092 Phone No.: 440-347-2748 / 440-943-1200 Fax No.: 440-943-9013 Email: mrh@lubrizol.com	
Kasimirsky, Michael	ASTM TEST MONITORING CENTER 6555 Penn Avenue Pittsburgh, PA 15206 Phone No.: 412-365-1033 Fax No.: 412-365-1047 Email: mtk@tmc.astm.cmri.cmu.edu	
Montez, Alfredo	CHEVRON ORONITE COMPANY LLC 4502 Centerview Drive, Suite 210 San Antonio, TX 78228 Phone No.: 210-731-5604 Fax No.: 210-731-5699 Email: ammn@chevron.com	
Mosher, Mark	EXXONMOBIL RESEARCH & ENGINEERING Paulsboro Technical Center P.O. Box 480, 600 Billingsport Road Paulsboro, NJ 08066-0480 Phone No.: 856-224-2132 Fax No.: 856-224-3628 Email: mark.r.mosher@exxonmobil.com	
Riley, Mike	FORD MOTOR COMPANY 21500 Oakwood Blvd. EEE Bldg., MD#44 (Cube DN159) Dearborn, MI 48121-2053 Phone No.: 313-390-3059 Fax No.: 313-845-3169 Email: mriley2@ford.com	
Sagawa, Takumaru	NISSAN MOTOR COMPANY, LTD. 6-1, Daikoku-cho, Tsurumi-ku Yokohama, Japan (230) Phone No.: 011-81-45-505-8481 Fax No.: 011-81-45-505-8543 Email:	
Stephens, Carl	ASHLAND VALVOLINE 22nd and Front Streets Ashland, KY 41101 Phone No.: 606-329-5198 Fax No.: 606-329-3009 Email: cstephens@ashland.com	
Worcester, Dan	PERKINELMER FLUIDS SCIENCES AUTOMOTIVE RESEARCH 5404 Bandera Road San Antonio, TX 78238-1993 Phone No.: 210-523-4659 or 684-2310 Fax No.: 210-523-4607 Email: Dan.worcester@perkinelmer.com	

**NON-MEMBER MAILING LIST  
ASTM IVA SURVEILLANCE PANEL**


Attachment	1
Page	3 of 7
Reference	IVA-11-01

November 13, 2001

NAME	COMPANY-ADDRESS-PHONE-FAX-EMAIL	SIGNATURE
Bishop, Zack	CHEVRON ORONITE COMPANY LLC 4502 Centerview Drive, Suite 210 San Antonio, TX 78228 Phone No.: 210-731-5605 Fax No.: 210-731-5699 Email: zrbi@chevron.com	
Bond, Stacy	PERKINELMER FLUIDS SCIENCES AUTOMOTIVE RESEARCH 5404 Bandera Road San Antonio, TX 78238 Phone No.: 210-684-2310 / 210-647-9457 Fax No.: 210-523-4607 Email:	
Bowden, Jason	OH TECHNOLOGIES, INC. P.O. Box 5039 9300 Progress Pkwy. Mentor, OH 44061-5039 Phone No.: 440-354-7007 Fax No.: 440-354-7080 Email: jhbowden@ohtech.com	
Bryant, Don	LUBRIZOL CORPORATION 29400 Lakeland Blvd. Wickliffe, OH 44092 Phone No.: 216-943-1200 Fax No.: 440-943-9013 Email:	
Carlson, Jon	LUBRIZOL CORPORATION 14602 Huebner, Suite 116 PNB-198 San Antonio, TX 78230 Phone No.: 210-391-8838 (01/02/01) Fax No.: 210-522-0391 Email:	
Clark, Sidney L.	GM POWERTRAIN 30500 Mound Road 480-106-160 Box 9055 Warren, MI 48090-9055 Phone No.: 810-986-1929 Fax No.: 810-986-2094 Email: sidney.l.clark@gm.com	
Farber, Frank	ASTM TEST MONITORING CENTER 6555 Penn Avenue Pittsburgh, PA 15206 Phone No.: 412-365-1030 Fax No.: 412-365-1047 Email: fmf@tmc.astm.cmri.cmu.edu	
Fernandez, Frank	CHEVRON ORONITE COMPANY LLC 4502 Centerview Dr., Suite 210 San Antonio, TX 78228 Phone No.: 210-731-4381 / 210-731-5603 Fax No.: 210-731-5699 Email: ffer@chevron.com	

**NON-MEMBER MAILING LIST  
ASTM IVA SURVEILLANCE PANEL**

Attachment	1
Page	4 of 7
Reference	IVA-11-01 November 16, 2001



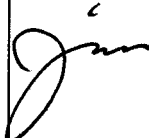

NAME	COMPANY-ADDRESS-PHONE-FAX-EMAIL	SIGNATURE
Ferner, Mark	PENNZOIL PRODUCTS COMPANY 1520 Lake Front Circle The Woodlands, TX 77380 Phone No.: 281-363-8053 Fax No.: 281-363-8002 Email:	
Galbraith, Robert	IMPERIAL OIL 453 Christina St. South P.O. Box 3002 Sarnia, Ontar, Canada N7T8C8 Phone No.: Fax No.: Email: rob.galbraith@iol.sprint.com	
Hsu, Jeffery	PENNZOIL-QUAKER STATE COMPANY 1520 Lake Front Circle (77380) P.O. Box 7569 The Woodlands, TX 77387 Phone No.: 281-363-8177 (1/10/01) Fax No.: 281-363-8002 (1/10/01) Email: JefferyHsu@PZLQS.com	
Ishikawa, Masa	INFINEUM USA L.P. 1900 East Linden Avenue Linden, NJ 07036 Phone No.: 908-474-2384 Fax No.: 908-474-3637 Email: masa.ishikawa@infineum.com	
Kelly, Jack	LUBRIZOL CORPORATION 29400 Lakeland Blvd. Wickliffe, OH 44092 Phone No.: 216-943-1200 Fax No.: Email: jack@lubrizol.com	
Moffa, John	CASTROL INTERNATIONAL Whitchurch Hill Pangbourne, Reading Berkshire RG8 7QR, England Phone No.: 011-44-1-189-765-263 Fax No.: 011-44-1-189-844-088 Email:	
Nakamura, K.	NISSAN MOTOR COMPANY, LTD. 6-1, Daikoku-cho, Tsurumi-ku Yokohama, Japan (230) Phone No.: 011-81-45-505-8481 Fax No.: 011-81-45-505-8543 Email:	
Oliver, Rick	REGISTRATION SYSTEMS INC. 2805 Beverly Drive Flower Mound, TX 75022 Phone No.: 972-724-2136 (Main Office: 210-341-2680) Fax No.: 210-341-4038 Email: crickoliver@home.com	



**NON-MEMBER MAILING LIST  
ASTM IVA SURVEILLANCE PANEL**




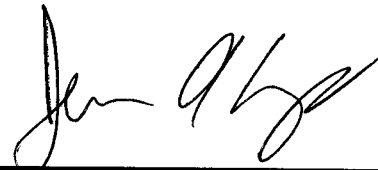
Attachment	1
Page	5 of 7
Reference	IVA-11-01

November 13, 2001

NAME	COMPANY-ADDRESS-PHONE-FAX-EMAIL	SIGNATURE
Olree, Bob	GM POWERTRAIN 30003 Van Dyke Warren, MI 48090-9060 Phone No.: 810-492-2268 Fax No.: 810-575-2732 Email:	
Pandosh, John	INFINEUM 4335 Piedras Dr. West Suite 101 San Antonio, TX 78228 Phone No.: 210-732-8123 Fax No.: 210-732-8480 Email: john.pandosh@infineum.com	
Roby, Stephen	CHEVRON GLOBAL PRODUCTS 100 Chevron Way, #71-7348 P.O. Box 1627 Richmond, CA 94802-0627 Phone No.: 510-242-1273 Fax No.: 510-242-3758 Email: hrby@chevron.com	
Rumford, Robert	HALTERMANN PRODUCTS P.O. Box 429 1201 S. Sheldon Road Channelview, TX 77530 Phone No.: 281-457-2768 Fax No.: 281-457-1469 Email: rhrumford@specified.com dow.com	
Rutherford, Jim	CHEVRON ORONITE COMPANY LLC 100 Chevron Way, #60-1211 Richmond, CA 94802 Phone No.: 510-242-3410 Fax No.: 510-242-1930 Email: jaru@chevron.com	
Sciacchitano, Fran	INFINEUM 1900 East Linden Avenue P.O. Box 735 Linden, NJ 07036 Phone No.: 908-474-2573 Fax No.: 908-474-3363 Email: f.sciacchitano@infineum.com	
Scinto, Phil	LUBRIZOL CORPORATION 29400 Lakeland Blvd. Mail Drop 152-A Wickliffe, OH 44092 Phone No.: 440-347-2161 Fax No.: 440-347-9031 Email: prs@lubrizol.com	
Simkins, Russel	CONOCO INC. 1000 South Pine, 6617RW P.O. Box 1267 Ponca City, OK 74602 Phone No.: 580-767-6758 Fax No.: 580-767-4534 Email: russell.e.simkins@usa.conoco.com	

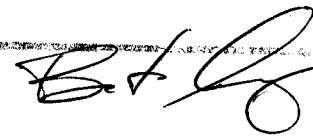
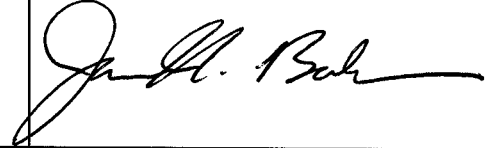
**NON-MEMBER MAILING LIST  
ASTM IVA SURVEILLANCE PANEL**

Attachment	1
Page	6 of 7
Reference	IVA-11-01 November 13, 2001

NAME	COMPANY-ADDRESS-PHONE-FAX-EMAIL	SIGNATURE
Venier, C.G.	PENNZOIL PRODUCTS COMPANY P.O. Box 7569 The Woodlands, TX 77387 Phone No.: 281-363-8060 Fax No.: 281-363-8002 Email:	
Weber, Ben	SOUTHWEST RESEARCH INSTITUTE 6220 Culebra Road P.O. Drawer 28510 San Antonio, TX 78228-0510 Phone No.: 210-522-5911 Fax No.: 210-684-7523 Email: bweber@swri.org	
Ying, Lisa	INFINEUM 1900 E. Linden Avenue Linden, NJ 07036 Phone No.: 908-474-3335 Fax No.: 908-474-2298 Email:	
Zalar, John	ASTM TEST MONITORING CENTER 6555 Penn Avenue Pittsburgh, PA 15206 Phone No.: 412-365-1005 Fax No.: 412-365-1047 Email: jlz@tmc.astm.cmri.cmu.edu	
Zaweski, Ed	BP AMOCO 150 W. Warrenville Road Mail Code C-6 Naperville, IL 60563 Phone No.: 630-420-5026 Fax No.: 630-420-4866 Email: ed f zaweski@amoco.com	
James E. Carter	Haltermann Products 3520 OKemos Rd, #6 OKemos, MI 48864-5943 Phone No.: 517-347-3021 Fax No.: 517-347-1024 Email: jecarter@dow.com	
BOSCHERT, TOM	Ethyl Corporation 2000 TOWN Center, Suite 1750 SOUTHFIELD, MI 48075 Phone No.: 248-350-0640 Fax No.: 248-350-0025 Email: Tom_Boschart@ethyl.com	
MARTINEZ, JO	CHEVRON OKONITE CO. LLC 180 CHEVRON WAY RICHMOND, CA 94802 Phone No.: (510) 2425563 Fax No.: (510) 2421930 Email: joqm@cherrontexaco.com	
BRYE, JEROME  * ADD TO MAILING LIST.	LUBRIZOL CORP 29400 LAKELAND BLVD WIRKLIFFE, OHIO 44092 Phone No.: 440 347-2631 Fax No.: 440 347-4096 Email: jabs@lubrizol.com	

NON-MEMBER MAILING LIST  
ASTM IVA SURVEILLANCE PANEL

Attachment	1
Page	7 of 7
Reference	IVA-01-01 November 13, 2001

BETO ARAIZA	TEI 12718 Cimarron Path S. A. TX. 78299 Phone No.: 1-210-690-1958 Fax No.: 1-210-690-1959 Email: BARAIZA@TESTENG.COM	
Jason Bowden	OH Technologies, Inc. P.O. Box 5039 mentor, OH 44061-5039 Phone No.: 440-354-7007 Fax No.: 440-354-7000 Email: jbbowden@ohtech.com	
E. A. HAPT Thompson	404 Twin Oaks Ln Jacksonville FL 32259 Phone No.: (904) 287-9596 Fax No.: Email: haptthom@aol.com	
Rich Grundra	ASTM TMC 6555 Penn Ave Pittsburgh PA 15206 Phone No.: 412-365-1031, 412-848-8840 Fax No.: 412-365-1047 Email: ceg@tmc.astm.com, cmo.edu	
	Phone No.: Fax No.: Email:	
	Phone No.: Fax No.: Email:	
	Phone No.: Fax No.: Email:	
	Phone No.: Fax No.: Email:	
	Phone No.: Fax No.: Email:	

# Sequence IVA Surveillance Panel

San Antonio, TX  
Embassy Suites Hotel  
November 14, 2001  
8:00 a.m. - noon

Attachment	2
Page	1 of 1
Reference	IVA-11-01

## A G E N D A

1. Membership Changes
2. Motion and Action recorder / Secretary
3. Approval of minutes for May 24, 2001 meeting (issued 9/12/01)
4. TMC Reference Oil Report – Mike Kasimirsky
  - Discuss update of reference oil targets
  - Status of Information Letters
  - Review reference test experience with measurement of RAC coolant flow
5. RSI Candidate Precision Report Status – Rick Oliver
6. Fuel Supplier Report - KA24E reference fuel
7. Test Engines and Kits
  - Future availability of Sequence IVA engines and test hardware
  - Laboratory feedback on current hardware
8. Proposed increase to Exhaust Pressure Spec - for Break-in @ step 8
9. Review of draft ASTM Standards Document - Sequence IVA
10. Old Business
11. Prepare Sequence IVA for GF-4
  - Slate of reference oils?
  - Interpretation of wear traces (e.g. wear area vs. max wear depth)?
  - Other?
12. New Business
13. Review objectives of Surveillance Panel
14. Next Meeting
15. Adjourn



**Test Monitoring Center**  
 6555 Penn Avenue  
 Pittsburgh, PA 15206-4489  
 (412) 365-1000

Attachment	3
Page	1 of 11
Reference	IVA 11-01

Memorandum: 01-131  
 Date: October 10, 2001  
 To: Larry M. Bendele, Chairman, Sequence IVA Surveillance Panel  
 From: Michael T. Kasimirsky  
 Subject: Sequence IVA Semiannual Report: April 1, 2001 through September 30, 2001

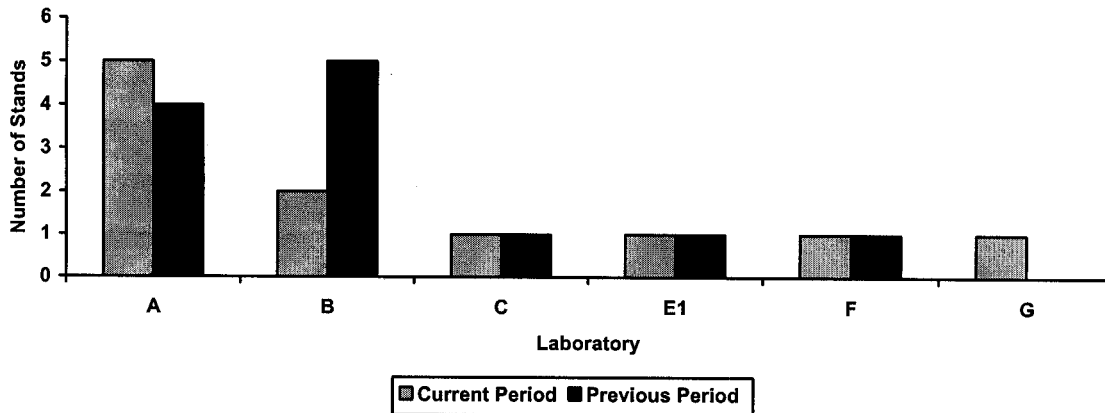
The following is a summary of Sequence IVA reference tests that were reported to the Test Monitoring Center during the period April 1, 2001 through September 30, 2001.

Lab/Stand Distribution

	Reporting Data	Calibrated as of September 30, 2001
Number of Laboratories:	6	4
Number of Test Stands:	11	10

The following chart shows the laboratory/stand distribution:

**Laboratory/Stand Distribution**



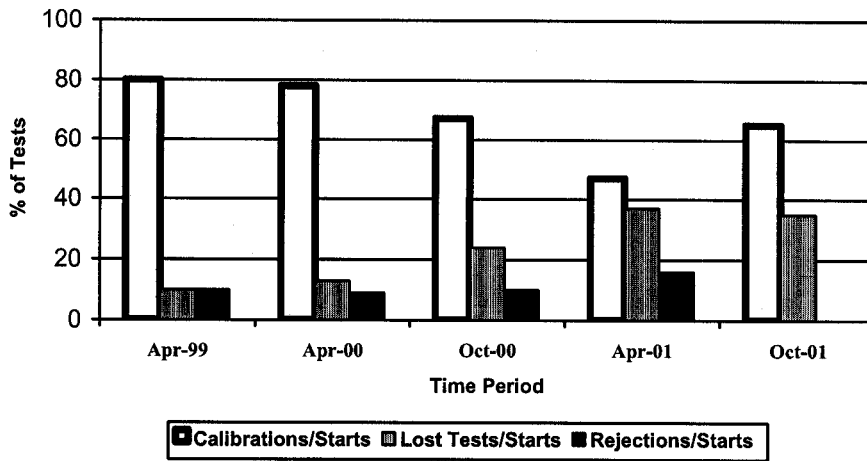
The following summarizes the status of the reference oil tests reported to the TMC:

Calibration Start Outcomes	TMC Validity Codes	No. of Tests
Operationally and Statistically Acceptable	AC	13
Failed Acceptance Criteria	OC	0
Stand Failed Reference Sequence – data pulled	MC	0
Operationally Invalid (Laboratory Judgment)	LC	7
Operationally Invalid (Lab & TMC Judgment)	RC	0
Aborted	XC	0
<b>Total</b>		<b>20</b>

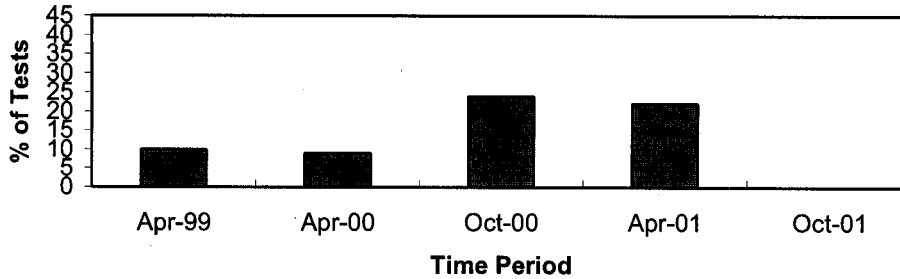
Donated & Industry Support Outcomes	TMC Validity Codes	No. of Tests
Acceptable Decoded Runs	AG	1
Unacceptable Decoded Runs	OG	1
Invalid Decoded Runs	LG	0
<b>Total</b>		<b>2</b>

Calibrations per start, lost tests per start and rejection rates are summarized below:

**Calibration Attempt Summary**



**Rejected Test Rate**



There were no failing tests for the period.

There were no LTMS Deviations written this period. There has been one deviation from the LTMS since its introduction in 1999.

There were no QI Deviations written this period.

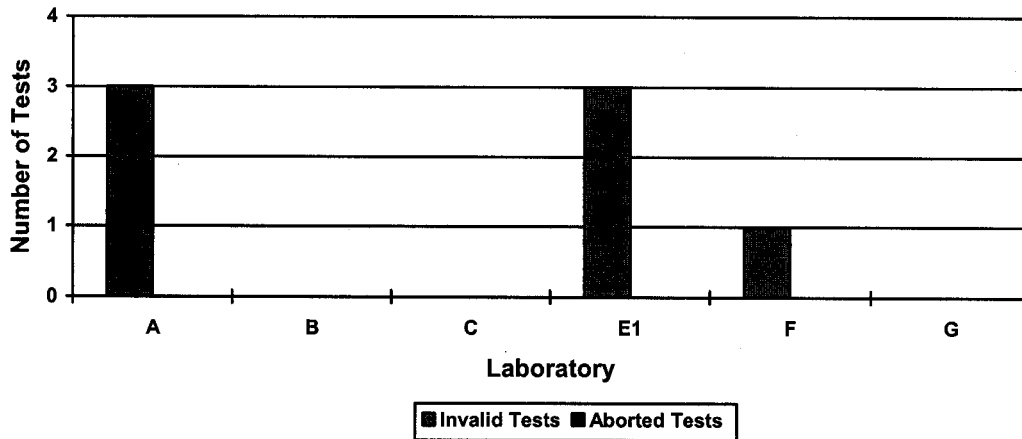
During the period, the TMC visited four laboratories. Any discrepancies noted during these visits were identified to the laboratory and corrective action is being taken.

Lost Test Summary

Seven tests were lost this period. The causes are summarized in the following chart:

Lab	Reason for Lost Test	Number of Tests	Breakdown of Tests (LC/RC/XC)
A	Speed QI & Coolant Heat Exchanger Plumbed Incorrectly	1	1/0/0
	Mild Cam Lot - Lot Removed From Testing.	1	1/0/0
	Data Acquisition Problems	1	1/0/0
E1	Incorrect Ignition Timing	1	1/0/0
	Camshaft Cleaning Performed Incorrectly	1	1/0/0
	Rocker Cover Air Flowmeter Failed	1	1/0/0
F	Low Oil Pressure & Engine Abandoned from Testing Due to Repeated Failures to Calibrate Successfully	1	1/0/0

### Lost Test Distribution



#### Information Letters

Sequence IVA Information Letter No. 01-1, Sequence No. 5, dated May 22, 2001, was issued during the period and contained a method for measuring and reporting Rocker Cover Coolant Flow as well as some modifications to the Rocker Cover Coolant System.

Sequence IVA Information Letter No. 01-2, Sequence No. 6, dated July 25, 2001, was issued during the period and contained revised cylinder head and test engine replacement requirements and also a revised test numbering definition.

#### Severity and Precision Analysis

Below is a summary of the average  $\Delta/s$ , pooled standard deviation, and average  $\Delta$  in reported units for the tests reported during this period. Also below is a summary of the average  $\Delta/s$  value, by parameter, for all laboratories reporting data during this period.

Industry Severity Summary			
Parameter	Average $\Delta/s$	Pooled standard deviation (degrees of freedom)	Average $\Delta$ , in micrometers
ACW	0.128	8.61 (df=11)	1.10

ACW Results, by Laboratory	
Laboratory	Average $\Delta/s$
A	0.359
B	0.405
C	-0.554
E1	-1.462
F	-0.145
G	-



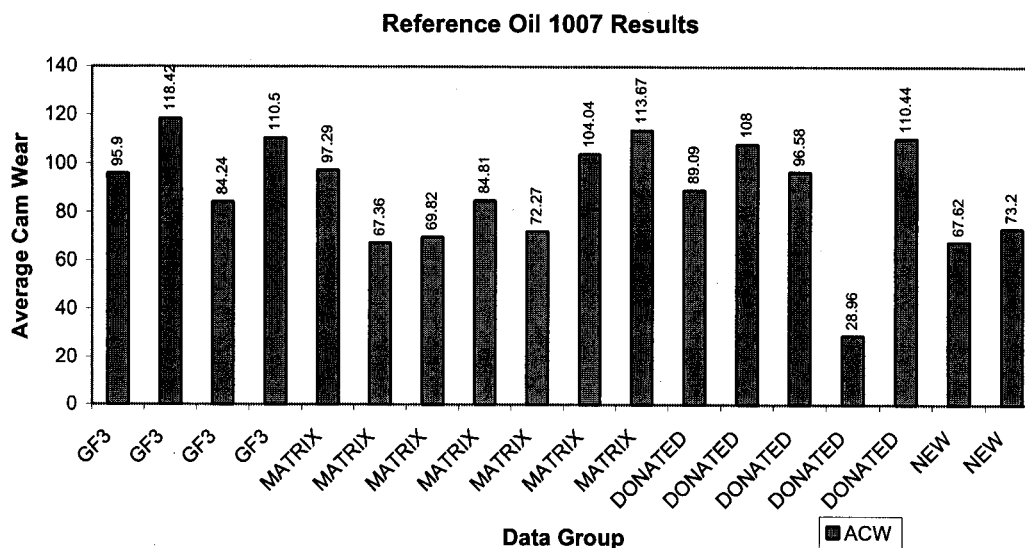
The industry began the period in a severity alarm. This alarm was originally triggered by a single test result that was severe of target. No cause for this severe result was found. The laboratory that ran this test ran a second test on the same reference oil and camshaft lot and returned a passing test result. After the alarm cleared, the industry returned to a warning alarm due to a single reference oil test that generated severe but passing results. The subsequent test cleared the alarm. Severity for the period is comparable to the results obtained last period and precision has improved compared to last period (see Figures 2 & 3).

At the May 2001 meeting of the Sequence IVA Surveillance Panel, the panel approved a motion to revise the test targets for reference oils 1006 and also approved a motion to reintroduce reference oil 1007 into the LTMS. The revised targets for reference oil 1006 and reference oil 1007 are shown in the following table:

Reference Oil	N	Mean	Standard Deviation
1006	77	121.76	12.50
1007	11	92.12	16.76

The targets for reference oil 1006 use a standard deviation pooled across laboratory to remove any laboratory biases from the targets. The reference oil 1007 targets were calculated at the meeting and as such utilize a conventional standard deviation. The reference oil 1007 targets are to be updated at 20 and 30 data points and these future updates will incorporate a standard deviation pooled across laboratory. The reference oil 1006 targets will not be updated without further Surveillance Panel action. The targets for reference oil 1006 are effective for all tests completed on or after May 25, 2001, and the reference oil 1007 targets are effective for all tests completed on or after May 24, 2001.

The panel also asked the TMC to review any new data on reference oil 1007 after it's reintroduction and compare it to the existing set of data on this reference oil. This comparison is shown in the following plot:



Both of the data points generated on reference oil 1007 (labeled *NEW* above) since it was reintroduced into the system have returned passing test results.

Hardware

No hardware changes were made this period.

Reference Oils

Oil	TMC Inventory, in gallons	TMC Inventory, in tests	Laboratory Inventory, in tests	Estimated life
1006	46	11	23	1 month or less <sup>1</sup>
1006-2 <sup>2</sup>	5,342	1,335	12	3+ years <sup>1</sup>
1007 <sup>3</sup>	550	137	17	3+ years <sup>1</sup>

<sup>1</sup> Multiple test area reference oil; total TMC inventory shown

<sup>2</sup> New Reference Oil; not yet introduced into LTMS

<sup>3</sup> Cannot be reblended

MTK/mtk

Attachments

- c: F. M. Farber, TMC  
Sequence IVA Surveillance Panel  
<ftp://tmc.astm.cmri.cmu.edu/docs/gas/sequenceiv/semiannualreports/IVA-10-2001.pdf>

Attachment	3
Page	7 of 11
Reference	IVA-11-01

List of Figures

- Figure 1 graphically presents the Industry control charts for ACW and also the CUSUM delta/s plot (by count in completion date order) of average camshaft wear for operationally valid tests.
- Figure 2 graphically presents a historic perspective for ACW mean delta/s by report period.
- Figure 3 graphically presents a historic perspective for ACW pooled standard deviations by report period.
- Figure 4 is the Sequence IVA Timeline, created to track changes in test hardware and operations.

SEQUENCE IVA INDUSTRY OPERATIONALLY INVALID DATA

AVERAGE CAM WEAR

FIGURE 1

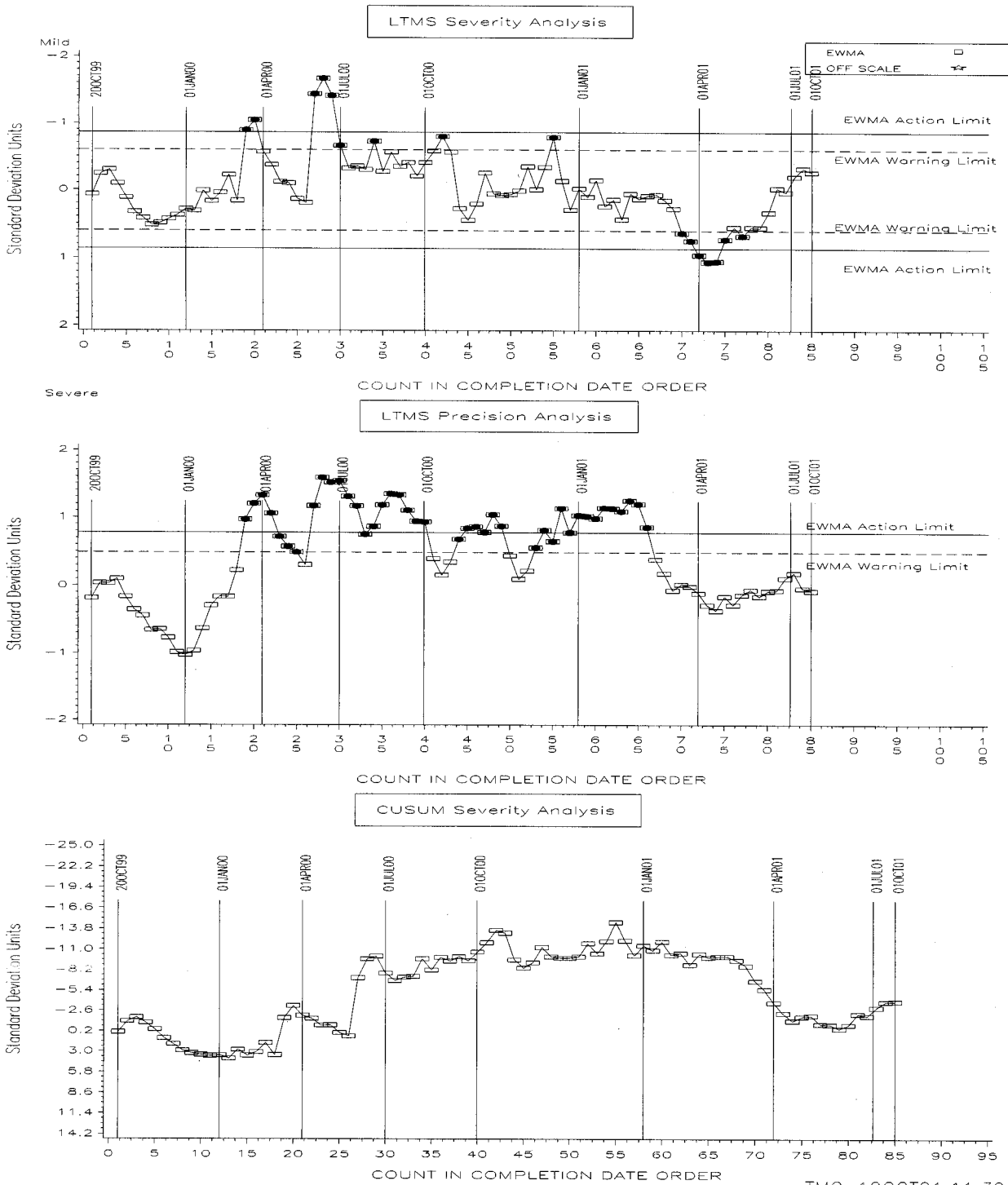
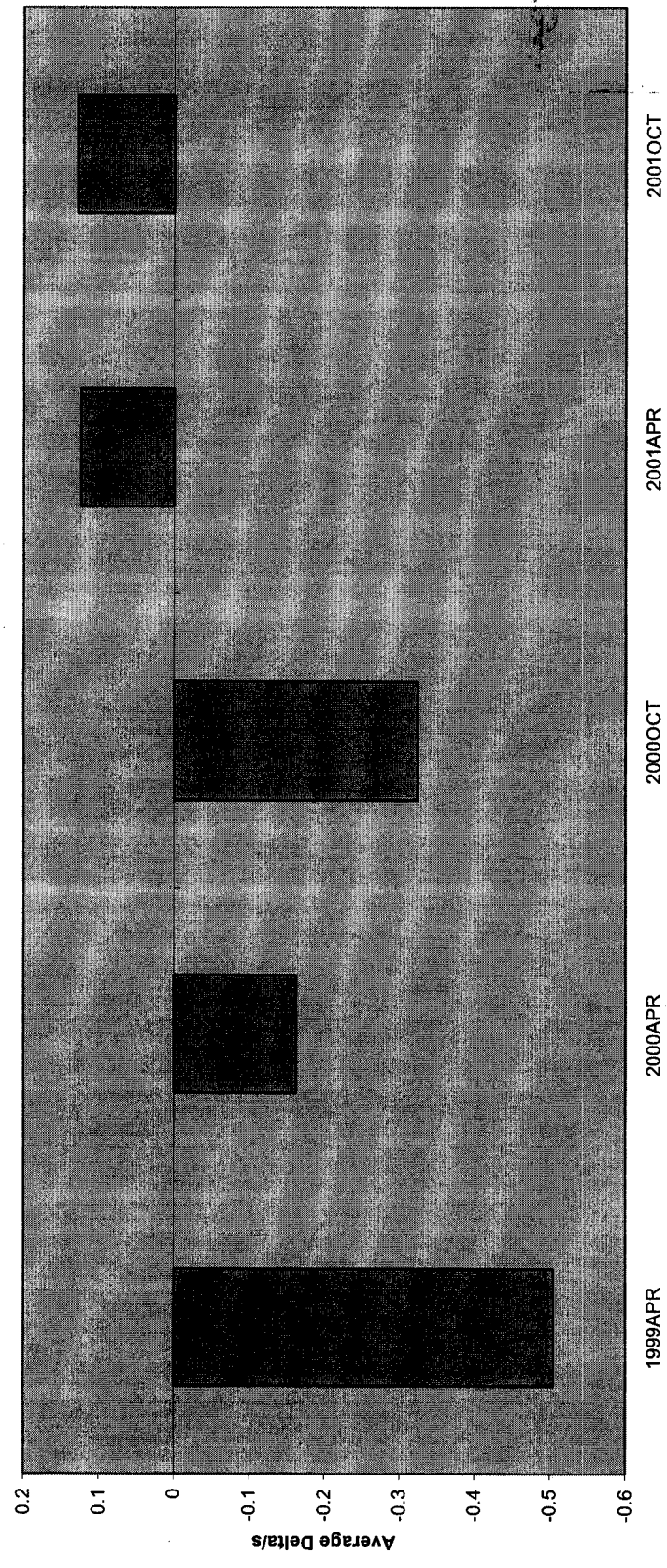
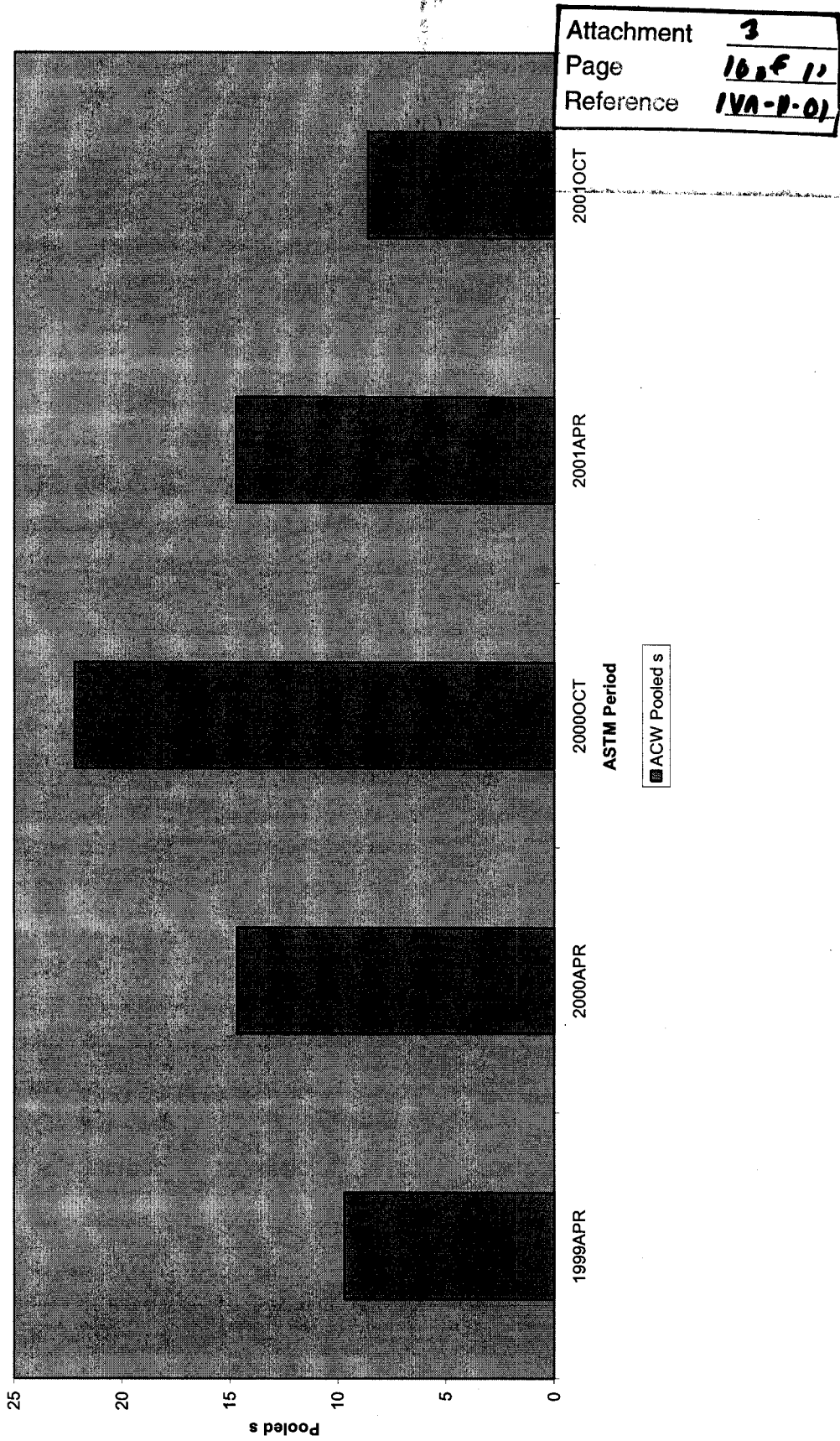


Figure 2 - Sequence IVA Reference Oil Data  
Average Camshaft Wear



ACW Average delta/s

Figure 3 - Sequence IVA Reference Oil Data  
Average Camshaft Wear



**Figure 4 - Sequence IVA Timeline**

Date	Topic	Information Letter
2/10/1999	SEQUENCE IVA TEST LTMS ESTABLISHED BY SURVEILLANCE PANEL	
11/17/1999	CALIBRATION STATUS RESUMED	
2/16/2000	DRAFT 4 OF TEST PROCEDURE ISSUED. INCORPORATED JACKETED ROCKER COVER, CONTROLLED FLOW OF FRESH AIR TO ROCKER COVER, AND OIL CYLINDER HEAD AS OIL TEMPERATURE CONTROL POINT.	00-1
8/1/2000	REVISED DATA DICTIONARY AND REPORT FORM SET (VERSION 20000126) GOES INTO EFFECT.	00-2
6/12/2000	REVISED DOUBLE-FLUSH COOLANT CONTROL REQUIREMENTS EFFECTIVE	00-3
6/12/2000	REVISED ENGINE STARTING PROCEDURE EFFECTIVE	00-3
6/12/2000	ELIMINATE THE REQUIREMENT FOR LINEAR RAMPING OF TRANSIENT PARAMETERS	00-3
6/12/2000	REVISED OIL SAMPLING PROCEDURE	00-3
6/12/2000	REVISED DOUBLE-FLUSH OIL DRAIN REQUIREMENT	00-3
6/12/2000	REVISED COMPRESSION TEST REQUIREMENTS	00-3
6/12/2000	NEW CAMSHAFT CLEANING REQUIREMENTS	00-3
1/24/2001	CAMSHAFT LOT RESTRICTIONS	00-4
7/22/2001	ROCKER COVER COOLANT FLOW MEASUREMENT & REPORTING	01-1
5/24/2001	REVISED CYLINDER HEAD AND TEST ENGINE REPLACEMENT REQUIREMENTS	01-2
5/25/2001	REVISED TEST NUMBERING REQUIREMENTS	01-2

# Rocker Cover Coolant Flow Data

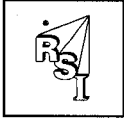
Lab	Stand	ARACFL01	ARACFL02
B	3A	1.23	1.21
B	1A	0.54	0.51
A	4	3.79	3.82
A	2	2.78	2.79
E1	1	2.8	2.8



**RSI Sequence IVA Semi-Annual Report  
Six-Month Period Ending September 30, 2001**

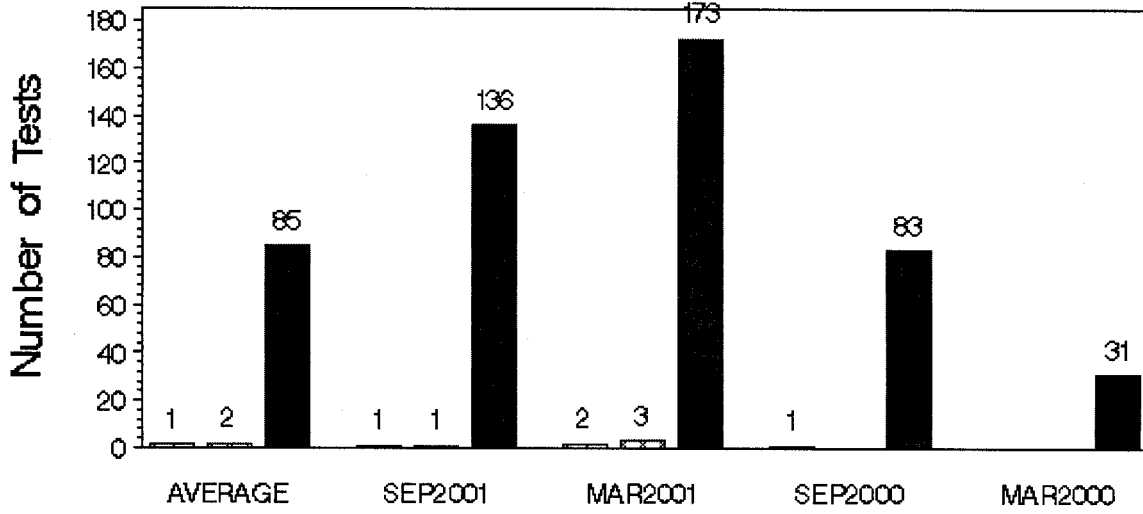
<b>STATUS OF REPORTED TESTS</b>		
<b>STATUS</b>	<b>N</b>	<b>PERCENT</b>
Operationally Non-Valid, Terminated	1	0.7%
Operationally Non-Valid, Completed	1	0.7%
Operationally Valid	136	98.6%
<b>Total Reported Tests</b>	<b>138</b>	<b>100.0%</b>
<b>CAUSES FOR LOST TESTS</b>		
	<b>N</b>	
Down Time	0	
Oil Consumption	0	
Control Problems	2	
Engine Mechanical Problems	0	
Support Equipment Problems	0	
Sponsor Request	0	
Miscellaneous	0	




<b>SEQUENCE IVA PRECISION</b>		
<b>COMPONENTS OF REPLICATED DATA BASE</b>		<b>N</b>
Number of Tests		15
Number of Oils		7
Number of Labs		5
Number of Stands		9
Number of Stand/Engine Combinations		10
Number of Severity Adjusted Avg. Cam Wear Tests		7
<b>VARIABLE</b>	<b>Pooled s</b>	<b>R</b>
Avg. Cam Wear, Adjusted	17.435	48.819
Avg. Cam Wear, Non-Adjusted	19.858	55.601

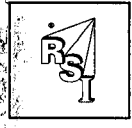


# Sequence IVA

Status of Reported Tests

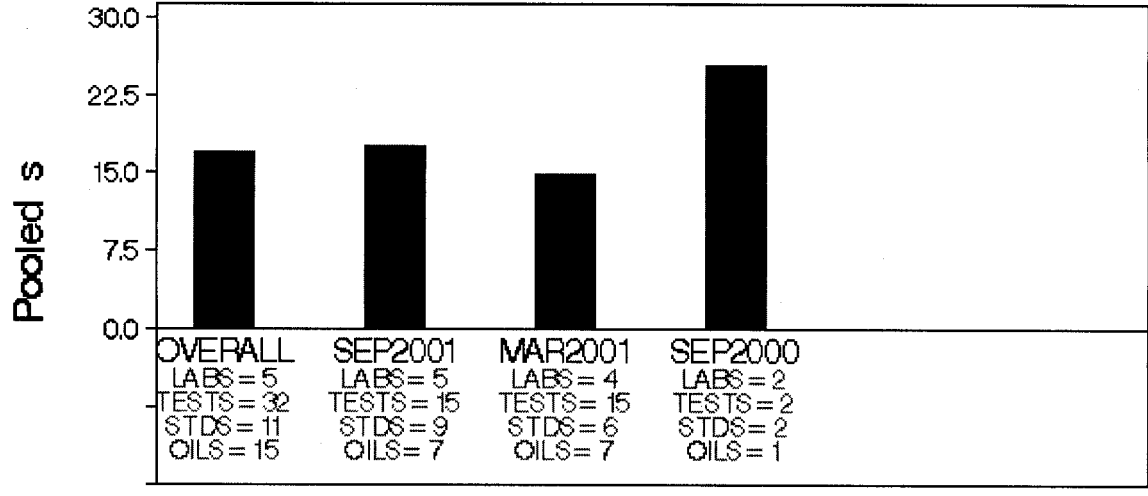


 Op. Non-Valid, Completed     
  Op. Non-Valid, Terminated  
 Operationally Valid



# Sequence IVA Candidate Precision

Operationally Valid, Adjusted Data



PARAMETER:  ACW

Attachment	<b>6</b>
Page	<b>1 of 1</b>
Reference	<b>14A-11-01</b>

**PRODUCT: KA24E TEST FUEL**

Batch No.: 0109688 0011769

TMO No.: 25830 25736

TMC No.: 0109688-21 0011769-21

Tank No.: 682 682

Analysis Date: 9/27/2001 11/20/2000

Shipment Date: 10/16/2001 10/2/2001

**PRODUCT CODE: HF008**

TEST	METHOD	UNITS	SPECIFICATIONS			RESULTS	RESULTS
			MIN	TARGET	MAX		
Distillation - IBP	ASTM D86	°F	75		95	86	87
5%		°F				114	113
10%		°F	120		135	127	127
20%		°F				149	150
30%		°F				177	180
40%		°F				208	212
50%		°F	200		230	224	227
60%		°F				233	234
70%		°F				242	243
80%		°F				260	261
90%		°F	300		325	320	319
95%		°F				344	343
Distillation - EP			°F	385		415	402
Recovery		vol %		Report		98.5	97.9
Residue		vol %		Report		1.0	1.0
Loss		vol %		Report		0.5	1.1
Gravity	ASTM D4052	°API	58.7		61.2	59.2	58.9
Density	ASTM D4052	kg/l	0.734		0.744	0.7420	0.7430
Reid Vapor Pressure	ASTM D323	psi	8.8		9.2	9.1	9.1
Carbon	ASTM E191	wt fraction	0.8580		0.8667	0.8633	0.8610
Carbon	ASTM D3343	wt fraction		Report		0.8657	0.8659
Sulfur	ASTM D4294	wt %	0.01		0.04	0.02	0.02
Lead	ASTM D3237	g/gal			0.05	<0.01	<0.01
Oxygen	ASTM D4815	wt %			0.05	<0.05	<0.05
Composition, aromatics	ASTM D1319	vol %			35.0	29.9	29.9
Composition, olefins	ASTM D1319	vol %	5.0		10.0	6.2	5.5
Composition, saturates	ASTM D1319	vol %		Report		63.9	64.6
Oxidation Stability	ASTM D525	minutes	1440			>1440	>1440
Copper Corrosion	ASTM D130				1	1	1
Gum content, washed	ASTM D381	mg/100ml			5	1	1
Research Octane Number	ASTM D2699		96.0		97.5	97.5	97.0
Motor Octane Number	ASTM D2700			Report		88.2	87.8
R+M/2	D2699/2700			Report		92.9	92.4
Sensitivity	D2699/2700		7.5			9.3	9.2
Net Heat of Combustion	ASTM D240	btu/lb		Report		18364	18388
Color	Visual			Green		Green	Green

Attachment	7
Page	1 of 1
Reference	NA-11-61

Dear Bendele-san

We will be able to supply KA24E until 2008.  
Parts sales department agreed to supply KA24 E until 2008.  
(We need new engine for evaluating valve train wear from 2009?).

Production volume of KA24 E continue to be decreased because new L4 engine was introduced at last year. As you know, parts for this test are inspected carefully. There are a lot of parts that do not meet our requirements for test parts and meet our requirements for vehicle use. So far, parts not meeting for tests could be used for vehicle. Now, these parts cannot be used for vehicle because of decreasing demands of KA24 E. Therefore, parts cost will be increases. Parts sales person will contact you to discuss the parts price and engine price.

If you have any questions, please contact me.

Best Regards,  
Kiyotaka Nakamura

Nissan Motor CO.,LTD.  
Materials Development Department  
Telephone 81-45-505-8481  
Facsimile 81-45-505-8543  
E-mail k-naka@mail.nissan.co.jp

## PDI Measurement of Wear Area under a Baseline

Under the Parameters File you can go to the Enabled area. For each available Profile, there are selections for Profile Measurements, i.e., Waviness Profile Measurements. You can add all these parameters to get an understanding what they are doing by clicking on Add All. Click the Measurement File and activate the Waviness. You now should have handles to the far left and right. These handles can be moved to the position you desire, left and right. The height is determined by the  $z(\bar{h})$ . You can move this up and down by raising or lowering either handle. The height value can be seen at the bottom of the screen to the far right. When you have set the handles to the proper locations left, right and height-wise, you should be able to determine the  $A(\text{air})$  and  $A(\text{mtl})$ . If the settings are correct, I believe you should have 0.00 for  $A(\text{mtl})$  and the  $A(\text{air})$  will be the area below the baseline that you are looking for.

## ASTM Sequence IVA Surveillance Panel

### Scope and Objectives

#### Scope

The Sequence IVA Surveillance Panel is responsible for the surveillance and continued improvement of the Sequence IVA test documented in the Research Report RR:D02.1218 as updated by the Information Letter system. Data on test precision and laboratory versus field correlation will be solicited and evaluated at least every six months. Improvements in wear measurement technique, test operation, test monitoring and test validation will be accomplished through continual communication with the Test Sponsor and Parts Distributor, ASTM Test Monitoring Center, ASTM Committee D02.B0.01 and the ASTM Passenger Car Engine Oil Classification Panel. Actions to improve the process will be recommended when deemed appropriate based on input from the proceeding. The Panel will review development and correlation of updated test procedures with previous test procedures. This process will provide a suitable test procedure for evaluating an automotive lubricant's effect on controlling cam lobe wear for overhead valvetrain equipped engines with sliding cam followers.

#### Objectives

#### Target Date

- |   |                 |
|---|-----------------|
| 1. Issue IVA procedure as ASTM standard                                       | Jan<br>Nov 2002 |
| 2. Conduct 2001 metrology workshop  | done-June 2001  |
| 3. Organize an Operations & Hardware Subpanel                                 |                 |
| 4. Institute 2 <sup>nd</sup> reference oil into LTMS                          | done-May 2001   |
| 5. Improve batch-to-batch variation of camshaft hardware                      |                 |
| 6. Metallurgical examination of cams & followers that yield differing results |                 |

3. Form Test Improvement Task Group Mar 2002

Larry M. Bendele, Chairman  
Sequence IVA Surveillance Panel

Updated: Nov 2001

4. Consider introduction of GF3 oil-Timing - Nov 2002

5- Continue to Improve Camshaft Quality

Motions & Action Items  
VIA Surveillance Panel  
November 14, 2001  
As Recorded at the Meeting by Ben Weber

Attachment	10
Page	1 of 1
Reference	IVA-01-01

1. Minutes were accepted as written
2. The Surveillance Panel chair will contact Ethyl regarding differences in base circle leveling. A teleconference might be called to discuss this further, and the recent Information Letter might be amended if necessary.
3. The TMC will recalculate the limits of 1007 when 20 & 30 test results are available. Currently there are 11 1007 data points at this time.
4. The TMC will coordinate a 1006-2 run very soon at each of the labs. The run will be made in a referenced test stand and the reference period will be extended by one run. The 1006-2 limits will be calculated from this data.
5. The TMC will request 100 gallons of the new GF-3 category reference oil for a 5-year supply. The oil will be used at a 10% level in the reference. Introduction of this oil can be done at a later time, especially following the introduction of 1006-2.
6. The IVA surveillance panel will investigate the differences in rocker cover coolant flow and work to make this equal amongst all labs. One area that was discussed was possible differences in plumbing fixtures since this isn't fully specified. Each lab should draw a schematic of their system including pipe sizes, line lengths and fitting sizes. These should be provided to the SP chair for looking to make a common system. A conference call will be called by the chair for further discussion. Pressure isn't currently being measured at it was suggested that this might also help with the investigation.
7. The TMC, RSI and fuel supplier report was accepted as presented.
8. The SP will ask Nissan if they will provide 5 to 10 camshafts of a new batch for testing prior to releasing the entire batch for sale to the Industry. This is being done because Nissan will not accept camshafts for return. Some labs have as many as 50 camshafts that produce mild results from particular camshaft batches.
9. The labs should check their 2000 order of heads because SwRI received these as bare heads with no valves or springs. Nissan did accept these for return and exchange.
10. Motion made by Dave Glaenzer and seconded Bill Buscher III by to increase the exhaust pressure from 103.5 to 105.5 kPa for steps 7 & 8 of the engine break-in. This is effective today.
11. Motion made by Mike K and seconded by Bill Buscher III that the surveillance panel is requested to review the current version of the test method (Draft No. 5 - November 2001) and provide your requested changes to the SP chair by December 10, 2001. An information of this test method will be issued in early January 2002. Passed unanimously.
12. In preparation for GF-4, the labs are encouraged to be thinking about areas where the test could be improved. The following ideas were discussed:
  - SwRI is looking at the area of wear (versus just a depth of wear) using the PDI software.
  - SwRI is also looking at ways to improve the flushing effectiveness. One area for possible improvement could be in the operating conditions such as time and temperature.
13. The formation of the O&H group will be replaced with a formation of a Task Force for test improvement headed by Bill Buscher III.
14. The GF-3 category oil will be included into the IVA Scope & Objectives.