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August 9, 2009

TO: Mack HTCT (D5579) S. P. Membership and Mailing List

SUBJECT: Mack HTCT SP Meeting Minutes, February 11, 2009, Warrendale, PA

THIS DOCUMENT IS IN THE PROCESS OF DEVELOPMENT AND IS FOR ASTM COMMITTEE USE ONLY. 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. ALL RIGHTS RESERVED.*

**Call to order:**

Brian Koehler, the chairman of the Mack High Temperature Cyclic Test ASTM Surveillance Panel called the meeting to order at 8:30a.m. on February 11, 2009 at the PRI headquarters in Warrendale, PA.

**Chairman's Comments:**

The chairman handed out copies of a proposed agenda. See attachment 1.

**Review/ Revise Membership:**

The chairman passed around a Membership/Visitor sign up list, see attachment 2. China's RIPP and CNPC representatives will be added per their request.

**Motion/ Action Item Recorder:**

Galen Greene of Lubrizol volunteered to take notes during the meeting. (Thank you Galen).

**Approval of minutes from the last meeting:**

There have been no comments concerning the meeting minutes posted to the TMC web site for September 6, 2006. The minutes are considered approved as posted as of this document's writing.

**Review TGC Initiatives:**

See attachment 3. Critical parts are to be identified and redistribution rules are to be established. Koehler and Smith discussed the critical parts for our test. Clutch plates are critical but a build out batch was produced. All part number changes are incorporated into the standard as they occur. The procedure does list some parts as being required/ critical. All felt that this test meets the TGC's goals as-is. No further action is planned for this subject.

TGC also requests that labs volunteer a report to the S.P. when parts are redistributed. This was discussed. Gropp stated that nothing prevents a lab from redistributing their hardware now. This was acceptable to those present. It was felt by most that the driving force behind the TGC's request does not relate to the Mack HTCD test type. Gropp will discuss this in the future from his section's point of view.

**Industry Severity Review:**

Lab E is having difficulty referencing their test stand. The lab is too severe. Don Lind stated that the oils and their assignment's do not appear to be the problem. See attachment 4. A kit of build parts from lab A was sent to lab E and a test was attempted to see if it was a hardware problem. The test was operationally invalid and had a broken clutch plate.

Gropp asked if the industry was running severe. Lind: Slightly severe but this does not appear to be an industry problem.

Intertek (lab E) made a presentation on their reference runs. See attachment 5. Last fail was due to a motor shaft breaking at 51000 cycles. Lab E was to hot clean their transmission. Lind asked if this was a concern. Koehler stated no since normal cleaning and flushing procedure would still be followed after hot cleaning.

Panel discussed how many runs would be needed to get the stand referenced after a fix is in place. TMC stated that only one was required once the fix was in place. The following motion was eventually made and passed 7 for, 0 no, 0 abstained: TMC has permission to issue lab E TMC oil 155 for a shakedown run. Lab E must run a shakedown test and results must be acceptable (valid and within the reference acceptance bands) in order to be issued an oil for a calibration run. Made by Gropp, seconded by Smith.

**Old Business:**

There was no old business to be discussed.

**New Business:**

There was no new business to be discussed.

**Next Meeting:**

The next meeting will be at the call of the chairman.

**Adjournment:**

Meeting was completed at 10:00am. Motion for adjournment was made by Marougy and seconded by Smith.

Submitted by:



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Brian Koehler  
Mack HTCT Surveillance Panel Chairman  
Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

clm  
Attachments

## Mack CD Surveillance Panel

February 11, 2009  
8:30 a.m. – 10:00 a.m.  
PRI Apollo Room – Warrendale, PA

### **Agenda**

- 1) Call to order
- 2) Review Membership and Agenda
- 3) Action item/ Motion recorder
- 4) Approve Minutes, Sept. 2006 meeting
- 5) Review TGC Initiatives
  - Critical parts identification, batch introduction, hold back of parts
  - Voluntary reporting of critical resource sale to non- ASTM labs
- 6) Review Industry Stand Severity, TMC
- 7) Lab Comments on Stand Severity
- 8) Adjournment

# CYCLIC DURABILITY SURVEILLANCE PANEL

Meeting Date: 2/11/09

Initials	Name	Voting Status	Company Name & Address	Telephone	Fax	Email
	Bartlett, Don	Non-Voting	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	440-347-2388	440-347-2878	<a href="mailto:dtb@lubrizol.com">dtb@lubrizol.com</a>
	Bell, Don	Non-Voting	Afton Chemical Corporation 500 Spring Street Richmond, VA 23218	804-788-6332	804-788-6243	<a href="mailto:don.bell@aftonchemical.com">don.bell@aftonchemical.com</a>
	Bryson, Tom	Voting	Mack Trucks, Inc. 13302 Pennsylvania Avenue Hagerstown, MD 21740	301-790-5454	301-790-6744	
	<del>Buitrago, Juan</del> <i>replaced by Mike Haire</i>	<del>Voting</del>	<del>Chevron Oronite Company 100 Chevron Way Richmond, CA 94802</del>	<del>510-242-1161</del>	<del>510-242-3392</del>	<del><a href="mailto:jabu@chevrontexaco.com">jabu@chevrontexaco.com</a></del>
	Comfort, Allen	Non-Voting	USArmy TACOM 6501 E. II Mile Warren, MI 48307	586-574-4225	586-574-4244	<a href="mailto:allen.s.comfort@us.army.mil">allen.s.comfort@us.army.mil</a>
	Dharte, John	Non-Voting	AAM 2965 Technology Dr. Rochester Hills, MI 48309	248-299-6478	248-293-6945	<a href="mailto:DharteJ@aam.com">DharteJ@aam.com</a>
	Goyal, Arjun	Non-Voting	ExxonMobil Research & Engineering 600 Billingsport Road Paulsboro, NJ 08066			
	Gropp, Jerry	Voting	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	440-347-1223	440-347-1555	<a href="mailto:jlg@lubrizol.com">jlg@lubrizol.com</a>
	Huron, John	Non-Voting	Chevron Oronite Company 4502 Centerview Drive, Suite 210 San Antonio, TX 78228	210-731-5609	210-731-5699	<a href="mailto:huro@chevrontexaco.com">huro@chevrontexaco.com</a>
	Koehler, Brian	Voting	Southwest Research Institute 6220 Culebra Road San Antonio, TX 78238-5166	210-522-3588	210-680-1777	<a href="mailto:bkoehler@swri.org">bkoehler@swri.org</a>
	Koglin, Cory	Voting	Afton Chemical Corporation 500 Spring Street Richmond, VA 23218	804-788-5303	804-788-6358	<a href="mailto:Cory.koglin@aftonchemical.com">Cory.koglin@aftonchemical.com</a>
	Layton, Kevin	Non-Voting	Afton Chemical Corporation 500 Spring Street Richmond, VA 23218	804-788-5363	804-788-6358	
	Lind, Don	Voting	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206	412-365-1034	412-365-1047	<a href="mailto:dml@astmtmc.cmu.edu">dml@astmtmc.cmu.edu</a>
	Marougy, Thelma	Voting	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48037	248-354-6985	248-354-2739	<a href="mailto:thelma.marougy@eaton.com">thelma.marougy@eaton.com</a>
	McGlone, Bruce	Voting	ArvinMeritor 2135 West Maple Troy, MI 48084	248-435-9929	248-435-1411	<a href="mailto:mzglonbf@meritorauto.com">mzglonbf@meritorauto.com</a>

# CYCLIC DURABILITY SURVEILLANCE PANEL

Meeting Date: \_\_\_\_\_

Initials	Name	Voting Status	Company Name & Address	Telephone	Fax	Email
	Messmann, Grant	Voting	Spicer Off-Highway Dana Corporation P.O. Box 2424 Fort Wayne, IN 46801			
	Prengaman, Chris	Non-Voting	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	440-347-4225	440-347-2878	crpr@lubrizol.com
	Schenkenberger, Chris	Non-Voting	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	440-347-2927	440-347-2878	csc@lubrizol.com
<i>DS</i>	Smith, Dale	Voting	PARC Technical Services, Inc. 100 William Pitt Way Pittsburgh, PA 15238	<del>412-926-5664</del> <i>412-926-1120</i> <i>5444</i>	412-826-5443 <i>5444</i>	<del>dsmith@parctech.com</del> <i>clak.smith@intertek.com</i>
	Vettel, Paula	Voting	D.A. Stuart Company 4580 Weaver Parkway Warrenville, IL 60555	630-393-8859	630-393-8577	pvettel@dastuart.net
	Whitton, Claire	Non-Voting	Afton Chemical Corporation 500 Spring Street P.O. Box 2158 Richmond, VA 23218-2159	804-788-5052	804-788-6243	claire.whitton@aftonchemical.com

*Steve Eliot, Steve N-V Exxon MOBIL 703-669-703-669- Stephen.W.Eliot.com*  
*18486 LANIER ISLAND SQ. 9916 9917*  
*LEESBURG, VA 2476*

*Wm Greeke, Galen N-V LUBRIZOL 440-347-2394 ggre@lubrizol.com*  
*OPR GRAZIANO, Ricc N-V LUBRIZOL 440-347-2058 rps@lubrizol.com*

*Mike Haire, Mike Voting Chevron Global Lubricants 510 242-2740 mhaire@chevron.com*  
*Add all*

**From:** William Buscher [william.buscher@swri.org]  
**Sent:** Wednesday, January 28, 2009 1:56 PM  
**To:** Becky Grinfield; Brian P Koehler; 'Charlie Leverett'; 'Dave Glaenzer'; 'Frank Gotto'; Fred W Gerhart; 'G. E. Callis'; 'Gil Reinhard'; James F McCord; 'Jim Moritz'; 'Leonard Orzech'; 'Mark Devlin'; 'Robert Stockwell'; Ryan D Johnson; 'Stefan Von Lukawiecki'; 'Susan Milczewski'; X-Andrew Ritchie; X-Chris Schenkenberger; X-Cory Koglin; X-Dale Smith; X-Don Bartlett; X-Don Bell; X-Jim Gutzwiller; X-Mark Cooper  
**Cc:** Benjamin O. Weber; 'Dan Worcester'; patrick.lang@swri.org; 'Guy H. Stubbs'; 'Eric Liu'; X-Gordon Farnsworth; 'Castanien, Chris'; X-John L. Zalar; X-Frank F. Farber  
**Subject:** TGC Assignment # 3 (Part 2 of 2)

3) Examine the need for establishing rules regarding redistribution of critical test parts and fuel to non-participants in the ASTM Test Monitoring System.

The TGC is requesting that the surveillance panel chairs ask their members to volunteer a report whenever they are going to redistribute critical resources (test hardware, fuel and/or reference oils) to non-participants in the ASTM Test Monitoring System.

William A. Buscher III  
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## Brian Koehler

---

**From:** William Buscher [william.buscher@swri.org]  
**Sent:** Wednesday, January 28, 2009 2:27 PM  
**To:** Becky Grinfield; Brian P Koehler; 'Charlie Leverett'; 'Dave Glaenzer'; 'Frank Gotto'; Fred W Gerhart; 'G. E. Callis'; 'Gil Reinhard'; James F McCord; 'Jim Moritz'; 'Leonard Orzech'; 'Mark Devlin'; 'Robert Stockwell'; Ryan D Johnson; 'Stefan Von Lukawiecki'; 'Susan Milczewski'; X-Andrew Ritchie; X-Chris Schenkenberger; X-Cory Koglin; X-Dale Smith; X-Don Bartlett; X-Don Bell; X-Jim Gutzwiller; X-Mark Cooper  
**Cc:** Benjamin O. Weber; 'Dan Worcester'; patrick.lang@swri.org; 'Guy H. Stubbs'; 'Eric Liu'; Scott M Richards; X-Gordon Farnsworth; 'Castanien, Chris'; X-John L. Zalar; X-Frank F. Farber  
**Subject:** TGC Assignment # 4  
**Attachments:** Test Hardware Control.pdf

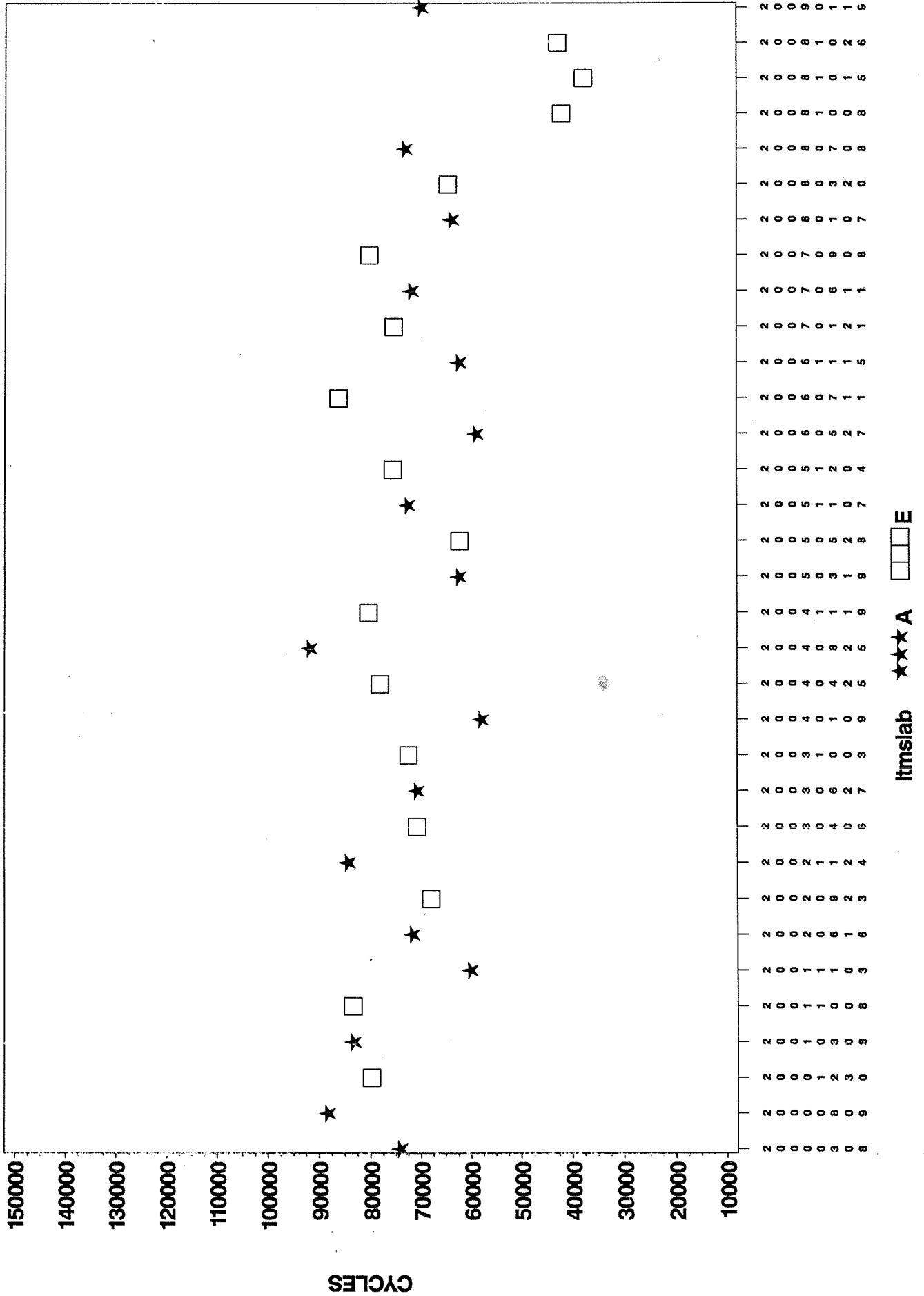
4) Ask each SP to review critical parts identification and methods/practices for introducing new batches of critical parts.

The TGC is requesting that each surveillance panel reviews their test's identified critical resources and determine what action, if any, is required for new batch introduction. Each surveillance panel should review the Subcommittee D02.B Standard Guide for Test Hardware Control in ASTM D02.B Test Methods and Practices (see attached). Each surveillance panel should also consider implementing plans to hold back small quantities of critical resources from the initial and/or each batch for future comparison testing, if needed.

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# HTCT

Configuration 2 Hardware Reference Oil 151-1 and 155  
CYCLES COMPARISON BY LAB





TESTKEY	LAB	STAND	STRUN	DTCOMP	VAL	IND	CYC	CYCyI
39402	E	1	94	20001230	AC	151-3	79876	-0.0358
40740	E	1	102	20011008	AC	151-3	83541	0.2781
45802	E	1	110	20020923	AC	151-3	68029	-1.0505
45991	E	1	118	20030406	AC	151-3	70821	-0.8114
48208	E	1	126	20031003	AC	151-3	72485	-0.6689
48209	E	1	135	20040425	AC	151-3	78182	-0.1809
49697	E	1	143	20041119	AC	151-3	80486	0.0164
49698	E	1	155	20050528	AC	151-3	62394	-1.5332
51802	E	1	162	20051204	AC	151-3	75638	-0.3988
58886	E	1	172	20060711	AC	155	86287	0.5133
54281	E	1	177	20070121	AC	151-3	75482	0.1028
58135	E	1	182	20070908	AC	151-3	80337	0.6053
58887	E	1	188	20080320	AC	155	64827	-1
64414	E	1	194	20081008	OC	155	42269	-3.3347
66804	E	1	195	20081015	OC	155	37984	-3.7782
66805	E	1	196	20081026	OC	155	43043	-3.2546
36029	A	3	92	20000308	AC	151-3	74170	-0.5245
37365	A	3	95	20000809	AC	151-3	88334	0.6887
37366	A	3	103	20010308	AC	151-3	83383	0.2646
42672	A	3	106	20011103	AC	151-3	60255	-1.7164
42676	A	3	114	20020616	AC	151-3	71762	-0.7308
44681	A	3	125	20021124	AC	151-3	84456	0.3565
46841	A	3	137	20030627	AC	151-3	70833	-0.8104
46842	A	3	143	20040109	AC	151-3	58053	-1.905
48210	A	3	150	20040825	AC	151-3	91896	0.9937
52679	A	3	158	20050319	AC	151-3	62520	-1.5224
52680	A	3	167	20051107	AC	151-3	72670	-0.653
58884	A	3	177	20060527	AC	155	59140	-1.8119
52681	A	3	189	20061115	AC	151-3	62578	-1.2328
57497	A	3	195	20070611	AC	151-3	71991	-0.2585
57498	A	3	204	20080107	AC	151-3	64089	-1.0764
58885	A	3	215	20080708	AC	155	73284	-0.1247
64416	A	3	226	20090119	AC	155	70159	-0.4481

**Intertek**

# HTCD Reference Runs

Last Passing Reference

Test #CD-188

TMC-155 CMIR 58887

Break Torque 125lbf-in

Turn Torque 75lbf-in

Preload Measurements Shaft 1) 0.002 2) 0.003 3) 0.003

Adjusted shaft #1 preload

Grease Shafts

No changes to rig

E.O.T. 64,827 shifts 3/20/08

**Intertek**

# HTCD Reference Runs

**Pass Reference Oil**

**Test #CD-194**

**TMC-155 CMIR 64414**

Break Torque 150lbf-in

Turn Torque 100bf-in

Preload Measurements Shaft 1) 0.004 2) 0.002 3) 0.003

Replaced Clutch Housings

Replace Air Shift Valve (found leaking external)

Replace rear seal reposition away from wear groove in yoke.

Grease Shafts

**E.O.T. 42,269 shifts 10/8/08**

**Intertek**

**HTCD Reference Runs**

**Pass Reference Oil**

**Test #CD-195**

**TMC-155 CMIR 66804**

Break Torque 150lbf-in

Turn Torque 125bf-in

Preload Measurements Shaft 1) 0.003 2) 0.003 3) 0.003

Replaced Range Shift Cylinder Piston (possibly sticking)

Grease Shafts

**E.O.T. 37,984 shifts 10/15/08**

**Intertek**

# HTCD Reference Runs

**Pass Reference Oil**

**Test #CD-196**

**TMC-155 CMIR 66805**

Break Torque 150lbf-in

Turn Torque 100bf-in

Preload Measurements Shaft 1) 0.003 2) 0.003 3) 0.003

Replaced output yoke and seal (ordered yoke due to prior leak)

Grease Shafts

Computer error @4148.5 shifts (reboot and restart)

**E.O.T. 43,043 shifts 10/26/08**

**Intertek**

# HTCD Reference Runs

## Pass Reference Oil

### Test #CD-197

**TMC-151-2&3** (Composite of multiple reference oils)

Break Torque 150lbf-in

Turn Torque 125lbf-in

Preload Measurements Shaft 1) 0.002 2) 0.002 3) 0.003

Adjusted Preload shafts 2 and 3

Replaced shift solenoid

Grease Shafts

Trans sump over temp shutdown @418 shifts (stuck relay)

Operator Shutdown Oil Leak (leak rear countershaft cover) @2060 shifts

Replace studs and o-rings rear case countershaft cover mounts

Replace air regulator (pressures drifting up during shutdown)

**Intertek**

# HTCD Reference Runs

**Pass Reference Oil**

**Test #CD-197**

**Reassemble using same composite oil continue**

Break Torque 150lbf-in

Turn Torque 125bf-in

Preload Measurements Shaft 1) 0.002 2) 0.003 3) 0.003

Adjusted All Preload due to new studs and o-rings in case

False unsynchronized shutdown

Repair vibration sensor wiring and adjust sound value (restart on test)

Adjusted main air pressure from 90.2psig. for low shift to 91.8 did not effect lock up time moved back to mean of specification

**E.O.T. 25,380 shifts 12/11/08**

# **Intertek** HTCD Reference Runs

Pass Reference Oil

Test #CD-Z97 Additional Experiments

Reassemble using same composite oil continue

Break Torque 150lbf-in

Turn Torque 125bf-in

Preload Measurements Shaft 1) 0.004 2) 0.004 3) 0.004

Install Sliding clutch and fork from previous reference #162

(No change in lock-up time)

Replaced shift valve and this was changed on the first fail (No change in lock-up time)

Rechecked all air lines looking for restrictions and leaks (None found)

Replaced shift cylinder (No change in lock-up time)

Installed extra shift cylinder spacer (Lock up change of +0.1 seconds)

Stopped test@12,800 shifts



# **Intertek** HTCD Reference Runs

**Pass Reference Oil**

**Test #CD-X97 Additional Experiments**

**Reassemble using same composite oil continue**

Break Torque 150lbf-in

Turn Torque 125bf-in

Preload Measurements Shaft 1) 0.004 2) 0.004 3) 0.004

Adjusted Shaft #2 preload shim.

Install Sliding clutch and fork from this run #197

(No change in lock-up time)

**Stopped test@12,800 shifts again no more to be gained**

# **Intertek** HTCD Reference Runs

**Pass Reference Oil**

**Test #CD-198**

**TMC-155 CMIR 68825**

Break Torque 150lbf-in

Turn Torque 100bf-in

Preload Measurements Shaft 1) 0.004 2) 0.004 3) 0.004

Use Parts Acquired from SWRI to confirm a possible parts issue

DML Audit during assembly

Grease Shafts

Short grinding not loud or long enough for shutdown at 40,000 shifts

**E.O.T. 71,491 shifts 10/26/08**

**Found low range #1 clutch broken and completely worn out no material in clutch at all.**

# **Intertek** HTCD Reference Runs

**Pass Reference Oil**

**Test #CD-199**

**TMC-155 CMIR 68824**

Break Torque 150lbf-in

Turn Torque 100lbf-in

Preload Measurements Shaft 1) 0.004 2) 0.003 3) 0.003

Grease Shafts

Send entire unit out for hot tank cleaning then re-clean with solvent 142 when returned

Replace all countershaft bearings, rear main shaft bearings and seals

Friction Discs from new sealed box

Drive belt broken @ 51593 shifts

**Motor shaft broken on restart Test End**