



# Test Monitoring Center

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MEMORANDUM: 06-028  
DATE: April 24 , 2006  
TO: Cory Koglin, Chairman, L-42 Surveillance Panel  
FROM: Donald Lind  
SUBJECT: L-42 Reference Test Status from October 1, 2005 through March 31, 2006

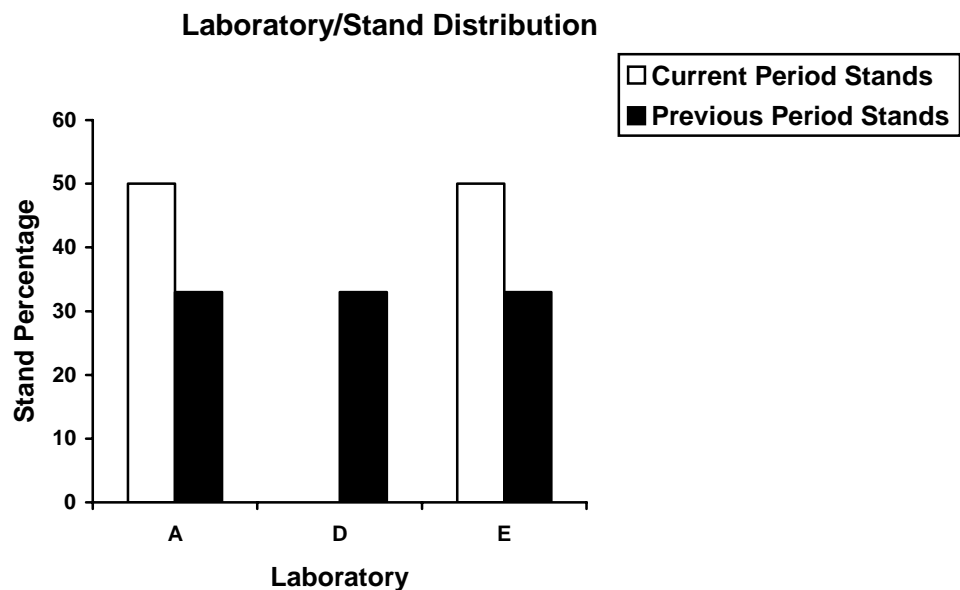
## Summary

The following is a summary of the L-42 reference oil tests that were reported to the Test Monitoring Center during the period October 1, 2005 through March 31, 2006.

## Lab/Stand Distribution

	Reporting Data	Calibrated as of 3/31/06
Number of Laboratories	2	2
Number of Stands	2	2

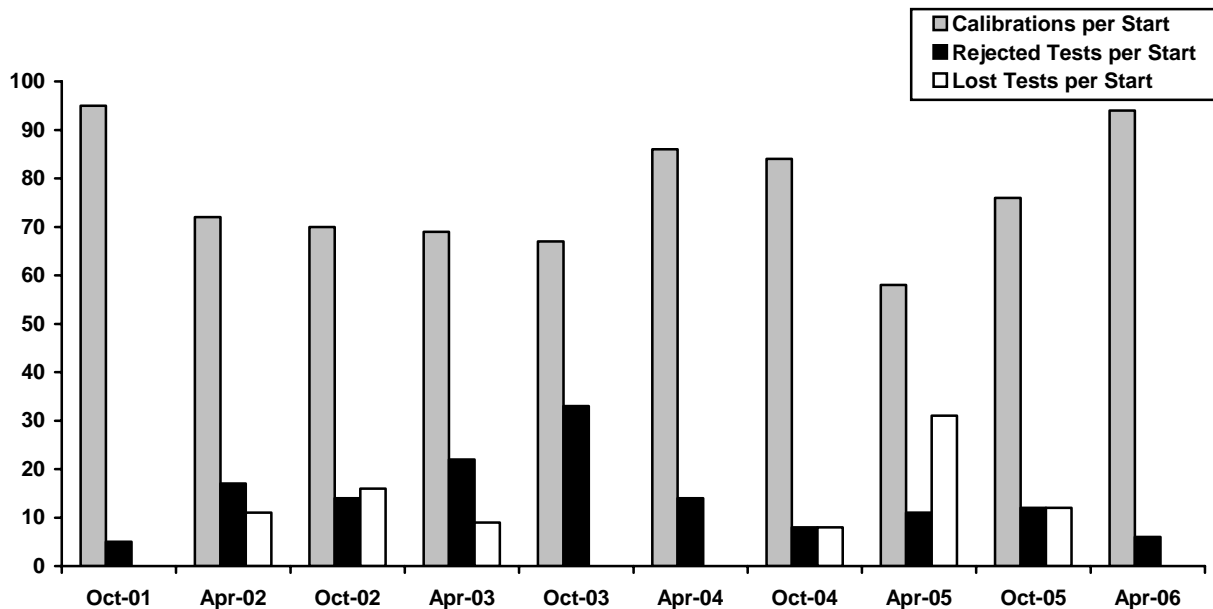
The following chart shows the laboratory/stand distribution:



A total of 18 operationally valid reference oil tests were reported this report period. Seven of the 18 operationally valid reference oil tests were run on gear batch C1L396/P8L327, seven were run on V1L637/P8L604, and four were run on gear batch C1L311/P8L205. Fifteen of the operationally valid tests were used for stand calibration. The following summarizes the status of the reference oil tests reported to the TMC:

	TMC Validity Codes	Number of Tests
Operationally and Statistically Acceptable (LTMS)	AC	17
Operationally Valid, Statistically Unacceptable	OC	1
Operationally Invalid Calibration Test-Lab Judgment	LC	0
Aborted Calibration Test	XC	0
Non-interpretable (Drive Side Scoring)	MC	0
Acceptable Discrimination Oil Test	AS	0
Unacceptable Discrimination Oil Test	OS	0
Operationally Invalid Discrimination Oil Test	LS	0
Donated Tests	AG	0
Aborted Donated Tests	XG	0
Non-blind Tests (Stand Evaluation)	NN	0
<b>Total</b>		<b>18</b>

Attempted calibration tests are depicted graphically below by report period.



The calibration per start has increased this report period when compared to the previous period. The lost test per start rate and the rejected test per start rate has decreased this report period when compared to the previous period

Severity and Precision

The average  $\Delta/s$  for this period is -0.01 (0.05 % Scoring) severe as illustrated in the Cusum severity plot in Figure 1. There were no EWMA severity alarms and only one EWMA precision warning alarm this report period (see Figure 2). The alarm can not be attributed to any lab, stand, or reference oil. The means and standard deviations, by reference oil and gear batch for all operationally valid tests completed during this period, are tabulated below:

Oil	N	Gear Batch	Coast Side Pinion Scoring		
			Mean	Std. Dev.	$\Delta/s$
116	4	C1L311/P8L205	22	4.08	-0.19
116	7	C1L396/P8L327	22	4.83	-0.19
116	7	V1L637/P8L604	24.1	6.67	0.26

The  $\Delta/s$  and pooled standard deviations, by lab, are listed in the following table:

Lab	Coast Side Pinion Scoring $\Delta/s$	Pooled Standard Deviation			
		df	Coast Side Pinion Scoring	Coast Side Ring Scoring	Seq. 2 Coast Side Ring Scoring
A	-0.19	10	4.36	3.98	0.00
E	0.26	6	6.67	5.86	0.00

Information Letters

There was no information letters issued during this report period.

TMC Lab Visits

There were two lab visits performed this report period with no discrepancies to report.

Reference Oil Status

The following table quantifies the reference oil supply and the expected number of tests remaining at the Test Monitoring Center and at the testing laboratories. L-42 reference oils are shipped in quantities of 1/2 gallon per test.

Oil	Lab A	Lab B	Lab D	Lab E	TMC	Total
112-2	5	0	0	4	40	49
113	2	3	0	3	192	200
116	14	0	0	16	178	206
116-1	0	0	0	0	330	330

DML/dml

Attachments

c: L-42 Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/gear/142/semiannualreports/142-04-2006.pdf>

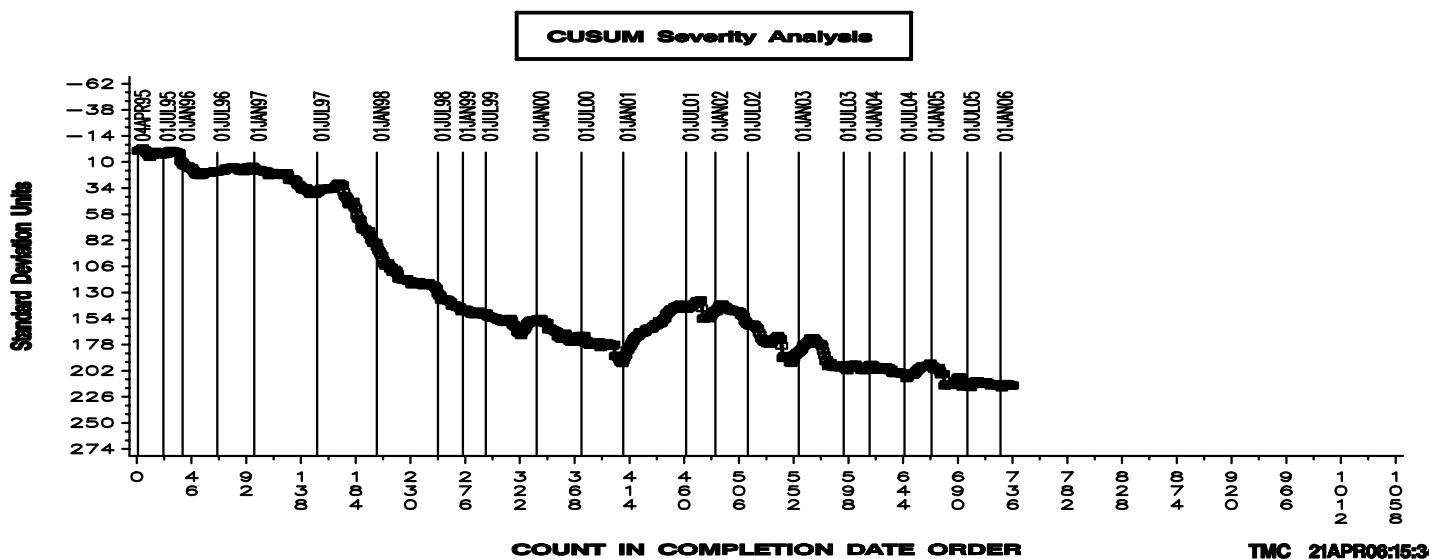
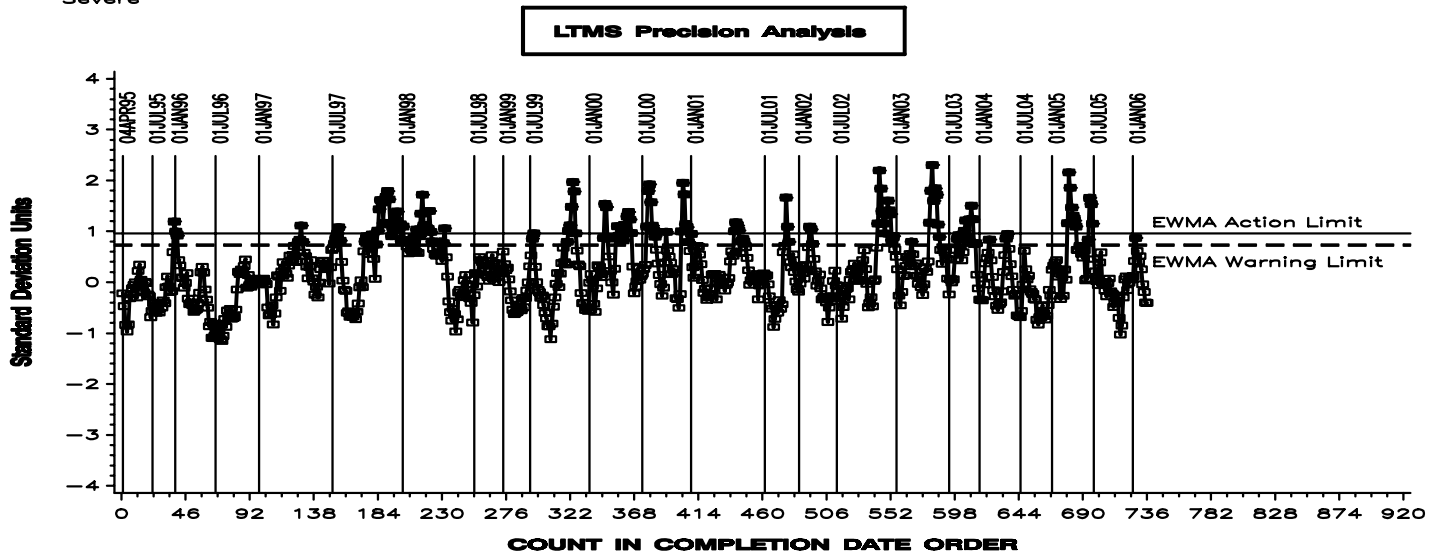
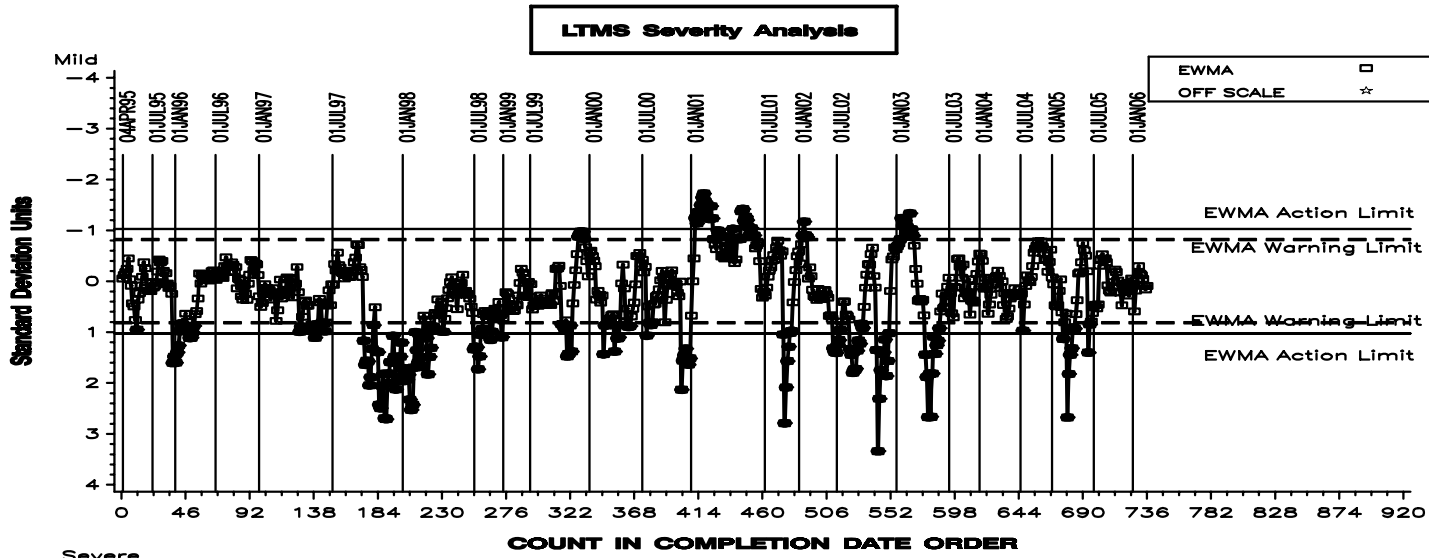
Distribution: Email

Table 1

Effective Date	L-42 Timeline	
	Topic	IL#
19940110	Test report form and data dictionary changes version number 19940106	1
19940401	In-Line Torque Meter Addition	2
19940401	Instrument Calibration Requirement	2
19940701	Report Forms and Data Dictionary Version 19940526	3
19940903	Report Forms and Data Dictionary Version 19940707	4
19940903	Recording of Torque Measurement using Inline Torque Meter	5
19950824	Report Forms and Data Dictionary Version 19950721	5
19960713	Test Break-in Procedure	96-1
19960713	Report Forms and Data Dictionary Version 19960607	96-1
19960923	Non-reference oil test Sequence 2 (15%) and Sequence 4 (10%) coast side torque limits.	96-2
19960923	Sequence 2 and Sequence 4 dynamometer synchronization torque specification	96-2
19970317	Revised Calibration Schedule, Discrimination Requirements, Coast Side Torque Limits, Report Forms and Data Dictionary Version 19970305	97-1
19980302	Report Forms and Data Dictionary Version 19971211	98-1
19980122	Backlash Settings Clarification	98-2
	Section 5.2.4 Editorial Correction	98-3
19990101	Addition of CRC Gear Rating Workshop Training	98-4
19990901	Reference test requirement: EOT pinion c.s. scoring => EOT ring c.s. scoring	99-1
20020211	Replacement of CRC Manual 17 with CRC Manual 21	02-1
20020401	Remove Report Forms and Data Dictionary from ASTM Procedure	02-1
20030101	Require the Use of a Himmelstein Torque Meter	03-1
20030101	Require the Use of a Himmelstein Model 701 or 711 Strain Gage Conditioner	03-1
20030415	Non-interpretable Tests	03-2
20030415	Complete Test Procedure Update	03-2
20040101	Revised Solvent Specification	03-3
20031114	Non-interpretable Tests for Drive Side Scoring	03-4
20041210	Revised Drive Shaft Specifications	04-1
20041210	Surveillance Panel Use of Donated Reference Oil Test Programs	04-1
20041210	Guidelines for Shortening or Lengthening Reference Oil Calibration Periods	04-1
20050221	Revised Solvent Specifications	05-1
20050426	Updated Test Precision	05-2
20050426	Rounding Test Results Using ASTM E 29	05-2
20050629	Low Temperature Test Annex	05-3

# L-42 INDUSTRY OPERATIONALLY VALID DATA

## FINAL END OF TEST PINION % SCORING COAST (%)

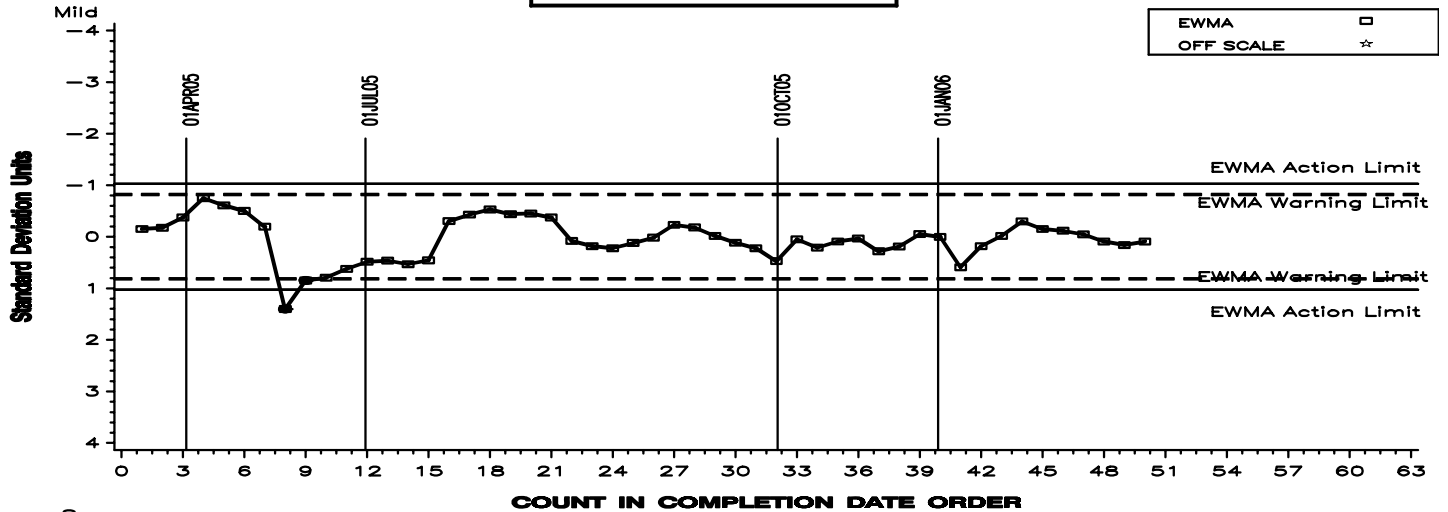


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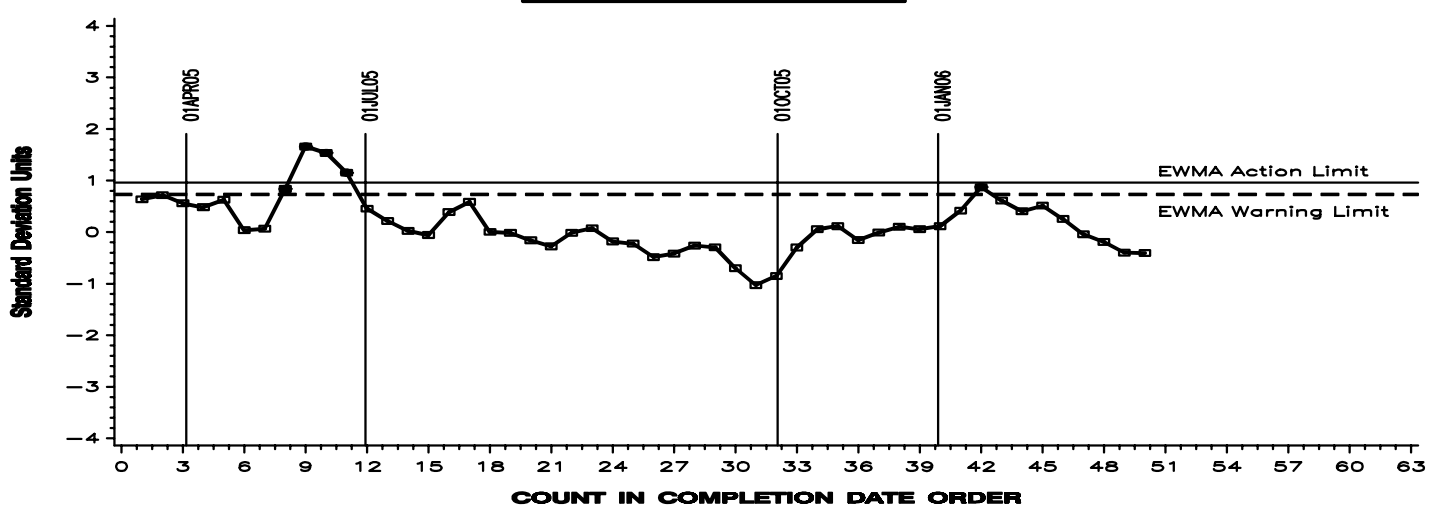
## LAST 50 DATA POINTS

### FINAL END OF TEST PINION % SCORING COAST (%)

**LTMS Severity Analysis**



**LTMS Precision Analysis**



**CUSUM Severity Analysis**

