



Test Monitoring Center


Carnegie Mellon University
6555 Penn Avenue, Pittsburgh, PA 15206, USA

<http://astmtmc.cmu.edu>
412-365-1000

MEMORANDUM: 12-012

DATE: May 16, 2012

TO: Thomas Gottwald, Chairman, L-42 Surveillance Panel

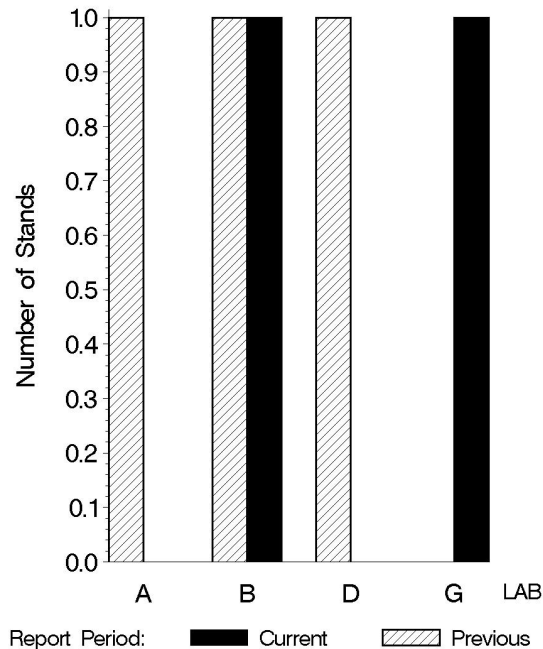
FROM: Scott Parke 

SUBJECT: L-42 Testing from October 1, 2011 through March 31, 2012

A total of 38 L-42 tests were reported to the Test Monitoring Center during the period from October 1, 2011 through March 31, 2012. Following is a summary of testing activity this period.

	Reporting Data	Calibrated on 3-31-12
Number of Labs	2	2
Number of Stands	2	2

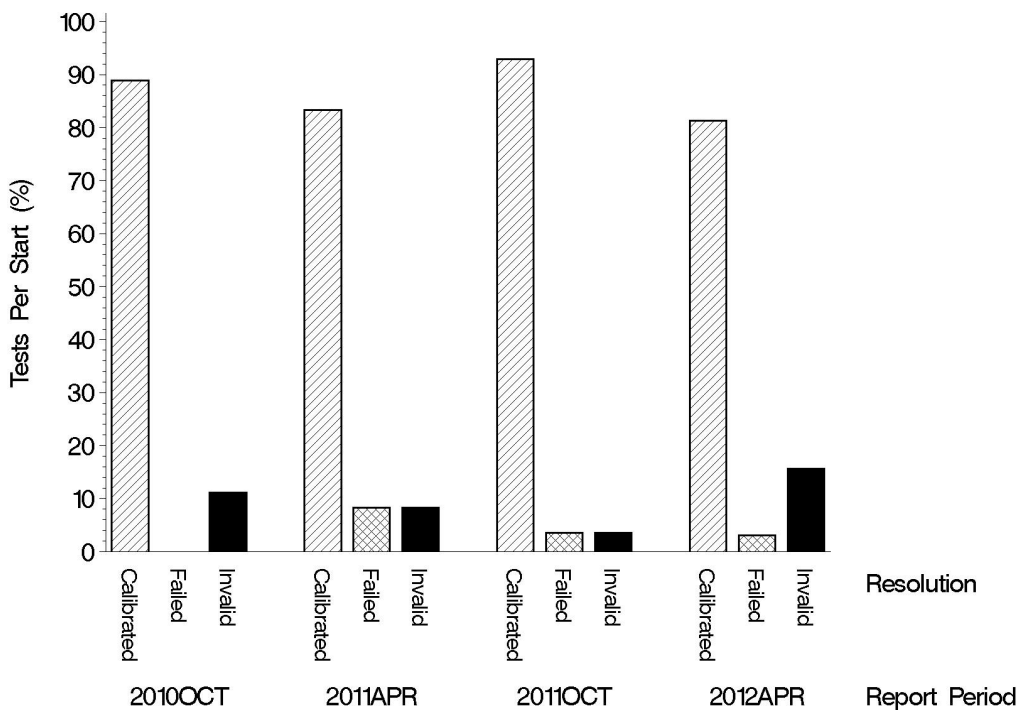
BY-LAB STAND DISTRIBUTION



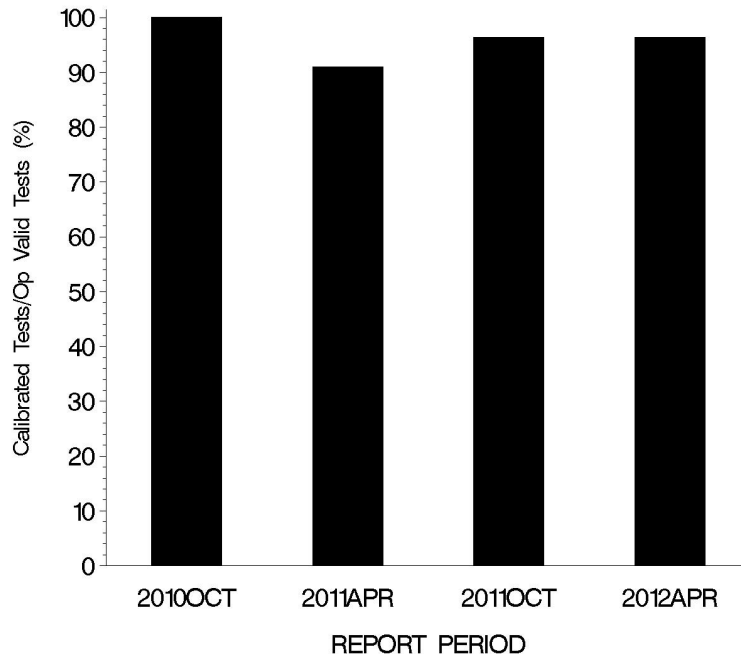
Test Distribution by Oil and Validity

						Totals	
		112-2	113	116	116-1	Last Period	This Period
Accepted for calibration	AC	0	0	9	17	26	26
Rejected (Mild)	OC	0	0	0	1	0	1
Rejected (Severe)	OC	0	0	0	0	1	0
Rejected (Precision)	OC	0	0	0	0	0	0
Accepted discrimination	AS	3	2	0	0	3	5
Unacceptable discrimination	MS	0	0	0	0	2	0
Invalidated calibration	LC	0	0	1	4	0	5
Aborted	XC	0	0	0	0	1	0
Shakedown run	NI	0	0	1	0	3	1
Total		3	2	11	22	36	38

CALIBRATION ATTEMPT SUMMARY



OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



CAUSES FOR LOST TESTS:

Lab	Cause	Oil				Validity			Loss Rate		
		112-2	113	116	116-1	LC	RC	XC	Lost	Starts	%
G	Conditioning phase 4 wheel speed out of tolerance.			●		●			5	32	16%
	Conditioning phase 1 torque out of tolerance.				●	●					
	Conditioning phase 1 torque out of tolerance.				●	●					
	Thermocouple failure.				●	●					
	Broken torque meter wire.				●	●					
	Lost	0	0	1	4	5	0	0			
	Starts	0	0	11	22	38	38	38			
	%	0%	0%	9%	18%	13%	0%	0%			

Lost tests are calibration attempts that were either aborted or operationally invalid.

			Coast Side Pinion Scoring		
Oil	Gear Batch	N	Mean	Std. Dev.	Average Δ/s
116	B6L544/P4L806	9	24.4	3.28	-0.12
116-1	B6L544/P4L806	12	24.7	4.08	-0.08
116-1	C1L446/P8L119	6	22.8	3.54	-0.03

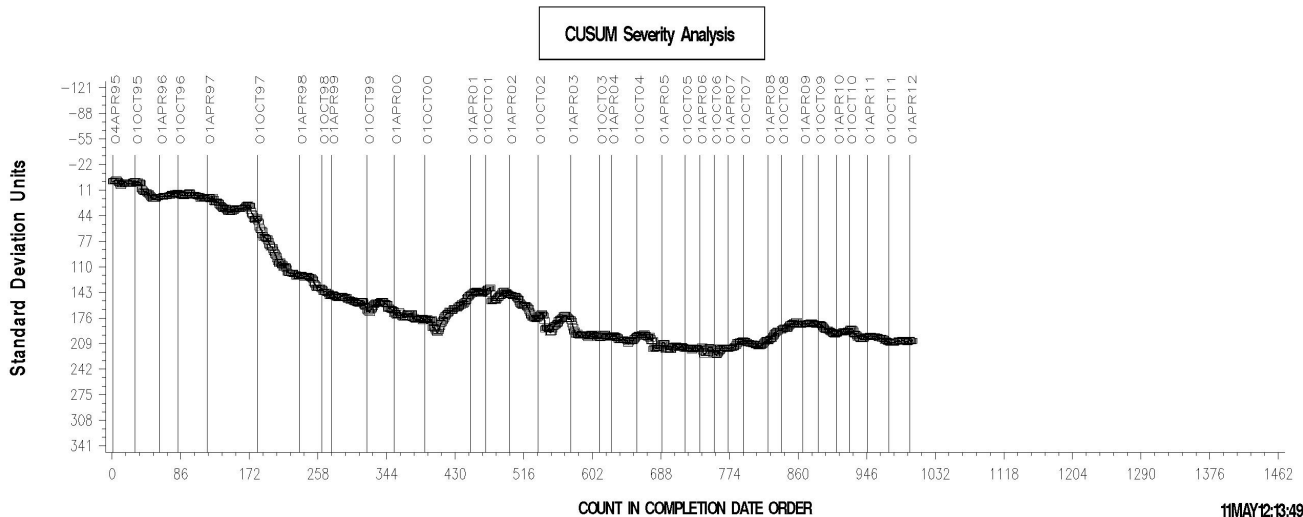
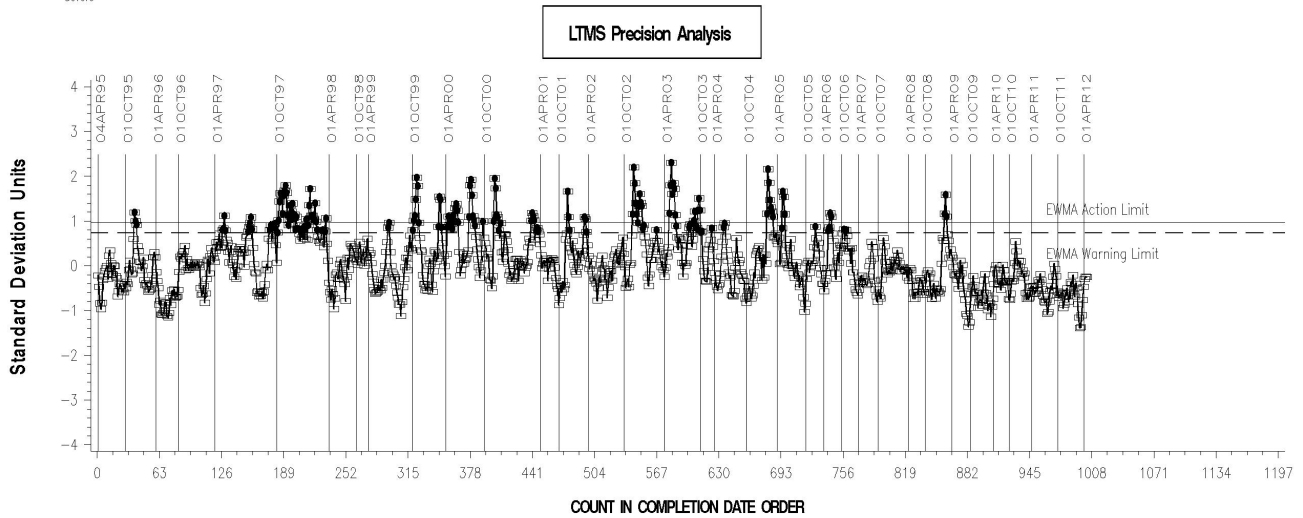
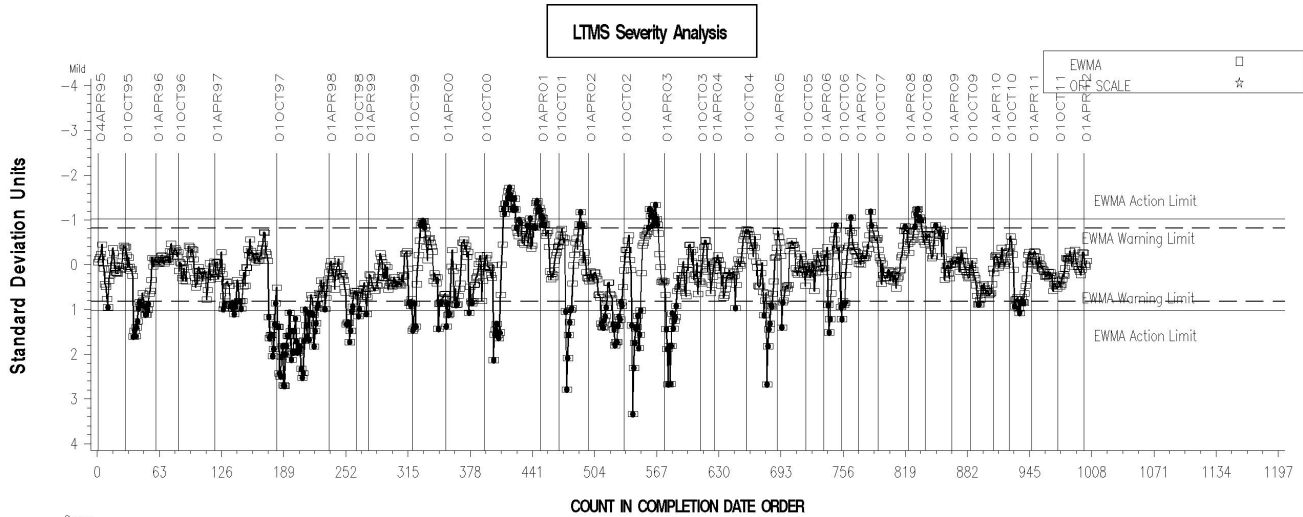
		Pooled Standard Deviation			
Lab	Coast Side Pinion Scoring Δ/s	df	Coast Side Pinion Scoring	Coast Side Ring Scoring	Shock Series I Coast Side Ring Scoring
B	-0.03	5	3.54	2.56	0
G	-0.1	19	3.76	3.55	1.32

INDUSTRY CONTROL CHART:

The industry control chart is shown on the following page. ECSP severity and precision are both currently performing within limits.

L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE



TIMELINE OF SIGNIFICANT EVENTS IN THE HISTORY OF THE L-42 TEST:

Effective Date	Information Letter	Event
	98-3	Section 5.2.4 editorial correction (No effective date, only a editorial change)
19940110	1	test report form and data dictionary changes version number 19940106
19940401	2	In-Line Torque Meter Addition
19940401	2	Instrument Calibration Requirement
19940701	3	Report Forms and Data Dictionary Version 19940526
19940903	4	Report Forms and Data Dictionary Version 19940707
19940903	5	Recording of Torque Measurement using Inline Torque Meter
19950824	5	Report Forms and Data Dictionary Version 19950721
19960713	96-1	Test Break-in Procedure
19960713	96-1	Report Forms and Data Dictionary Version 19960607
19960923	96-2	Non-reference oil test sequence 2 (15%0 and sequence 4 (10%) coast side torque limits.
19960923	96-2	Sequence 2 and sequence 4 dynamometer synchronization torque specification
19970310	97-1	Revised Cal. Schedule, Discrimination Test Req., Seq. 2 and 4 Coast Side Torque Req.
19970310	97-1	Report Form And Data Dictionary Revisions (Version 19970305)
19980122	98-2	Backlash setting clarifications
19980302	98-1	Revised Report Forms & Data Dictionary Version 19971211
19990101	98-4	Addition of CRC Gear Rating Workshop training
19990901	99-1	Reference test requirement: EOT pinion c.s. scoring => EOT ring c.s. scoring
20020211	02-1	Replacement of CRC Manual 17 With CRC Manual 21
20020401	02-1	Removal of Report Forms and Data Dictionary
20030101	03-1	Himmelstein Torque Meter Requirement
20030101	03-1	Himmelstein Model 701 or 711 Strain Gage Conditioner Requirement
20030415	03-2	Non-interpretable Tests
20030415	03-2	Complete L-42 Test Procedure Update
20031114	03-4	Non-interpretable Tests for Drive Side Scoring
20040101	03-3	Revised Solvent Specification
20040630	04-1	Standardization Revisions
20040825	04-1	Lubrited Hardware, Gear Batch V1L686/P4L626A Correction Factor
20040917	04-1	Intermediate Precision and Reproducibility Revisions
20040922	04-2	Drive Shaft Wall Thickness
20040922	04-2	Alternating Lubrited and Non-lubrited Hardware
20050221	05-1	Revised Silvent Specifications
20050426	05-2	Updated Test Precision
20050426	05-2	Rounding Test Results Using ASTM E 29
20050629	05-3	Low Temperature Test Annex
20060301	06-1	Addition of Alternative Power Train
20060509	06-2	Revised Procedure Includes Single Common Power Train, Common Throttle Control, and Revised Data Acquisition Requirements
20060713	06-3	Revised Procedure Includes Revisions to Test Length Requirements, Unscheduled Shutdowns, Backlash Measurements, and Pretest Contact Patterns.
20061215	06-4	Revised Wording for Coast Side Gear Contact Segment Time
20061215	06-4	Revised Wording for Unscheduled Shutdowns

Effective Date	Information Letter	Event
20061215	06-4	Engine Throttle Body Calibration Procedure
20070115	06-4	Revised Wording for Backlash Measurements
20070411	07-1	Revised Wording for Backlash Measurements
20070411	07-1	Revised Pretest Contact Pattern Procedure
20080624	08-1	Revised EOT Scoring Validity
20080724	08-1	Revised Conditioning Graphs
20090326	09-1	Revisions to Preparation of Apparatus Procedure
20090326	09-1	Revision to Percent Deviation Calculation
20091202	09-2	Cal stands @ 20 tests; cal instrumentation @ 6 mo or 60 tests.
20110912	11-1	Removal of requirement to mail paper final test report to TMC.

TMC LAB VISITS:

No L-42 lab visits were conducted during this report period.

INFORMATION LETTERS:

No information letters were issued this period.

STATUS OF REFERENCE OIL SUPPLY:

At the end of this report period, the testing oil supply stood as outlined in the table below:

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
112-2	2	18	9.0
113	8	167	83.5
116	0	0	0.0
116-1	32	132	66.5
Total	42	317	159.0

The supply of oil 112-2 (the discrimination oil) is nearly depleted. Oil 113 is the replacement for it.

SDP/sdp/mem12-012.sdp.doc

cc: Frank Farber

Jeff Clark

<ftp://ftp.astmtmc.cmu.edu/docs/gear/l42/semiannualreports/l42-04-2012.pdf>

Distribution: email