A Program of ASTM International

Test Monitoring Center

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

MEMORANDUM: 13-003

DATE: January 23, 2013

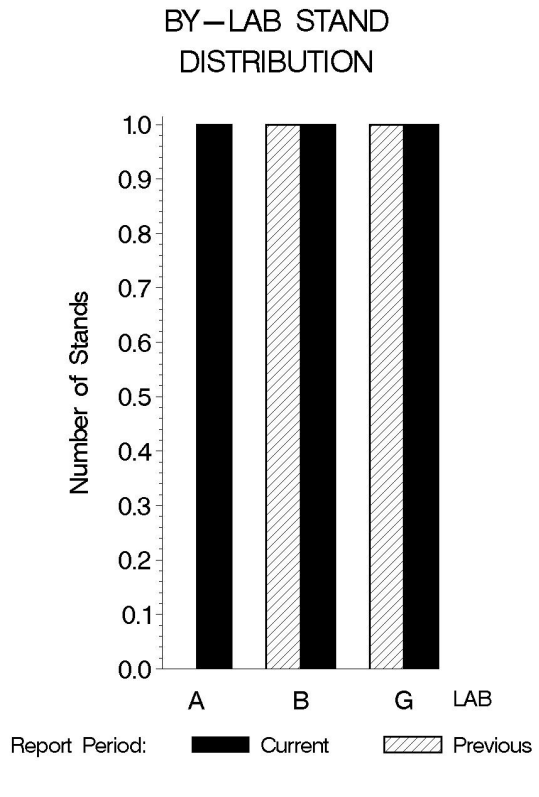
TO: Thomas Gottwald, Chairman, L-42 Surveillance Panel

FROM: Scott Parke

SUBJECT: L-42 Testing from April 1, 2012 through September 30, 2012

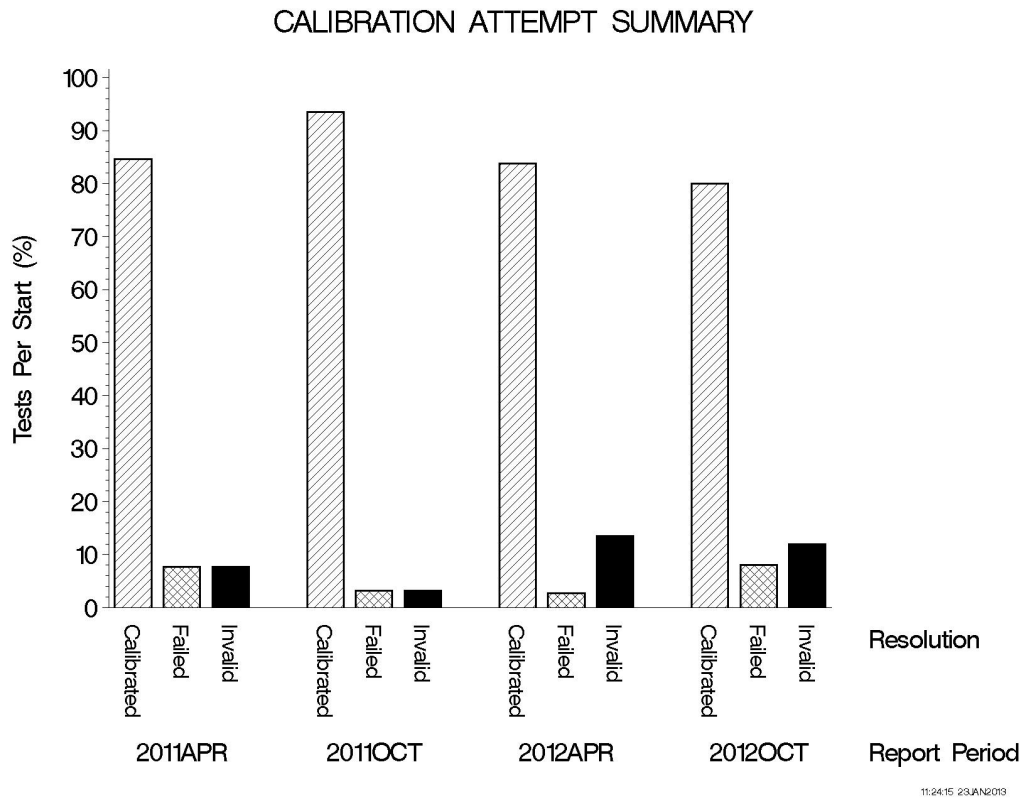
A total of 42 L-42 tests were reported to the Test Monitoring Center during the period from April 1, 2012 through September 30, 2012. Following is a summary of testing activity this period.

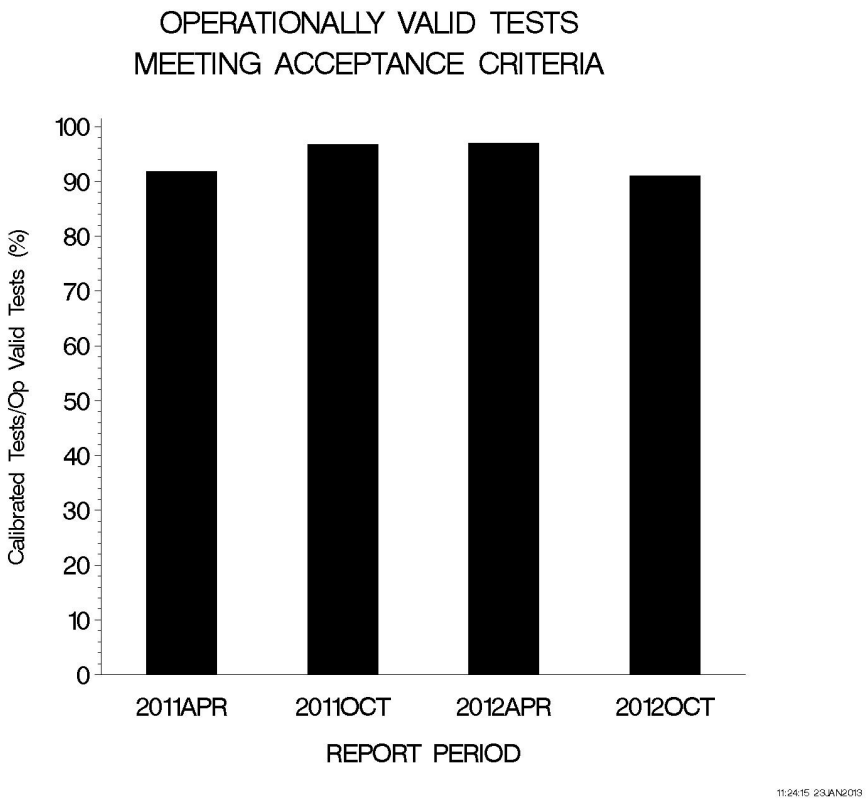
	Reporting Data	Calibrated on 9-30-12
Number of Labs	3	2
Number of Stands	3	2



Test Distribution by Oil and Validity

		112-2	113	116-1	Totals Last Period	Totals This Period
Accepted for calibration	AC	0	0	19	26	19
Rejected (Mild)	OC	0	0	2	1	2
Rejected (Severe)	OC	0	0	0	0	0
Rejected (Precision)	OC	0	0	0	0	0
Accepted discrimination	AS	0	1	0	5	1
Unacceptable discrimination	MS	0	0	0	0	0
Invalidated calibration	LC	0	0	3	5	3
Aborted	XC	0	0	0	0	0
Hardware information run	NI	0	4	11	0	15
Unacceptable hardware info run	MI	0	0	0	0	0
Shakedown run	NN	0	1	1	1	2
Total		0	6	36	38	42




OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA
Calibrated Tests/Op Valid Tests (%)
100
90
80
70
60
50
40
30
20
10
0
2011APR
2011OCT
2012APR
2012OCT
REPORT PERIOD
11:24:15 23JAN2013

CAUSES FOR LOST TESTS:

			Oil			Validity			Loss Rate		
Lab	Cause		112-2	113	116-1	LC	RC	XC	Lost	Starts	%
B	Torque meter failure.				●	●			1	24	4%
G	Conditioning phase 1 torque out of tolerance.				●	●			2	10	20%
	Conditioning phase 1 torque out of tolerance.				●	●					
		Lost	0	0	3	3	0	0			
		Starts	0	6	36	42	42	42			
		%	0%	0%	8%	7%	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
116-1	B6L544/P4L806	8	21.3	7.01	-0.7
116-1	C1L446/P8L119	13	22.9	3.97	-0.01

			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	-0.01	12	3.97	4.16	0
G	-0.7	7	7.01	4.77	1.16

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

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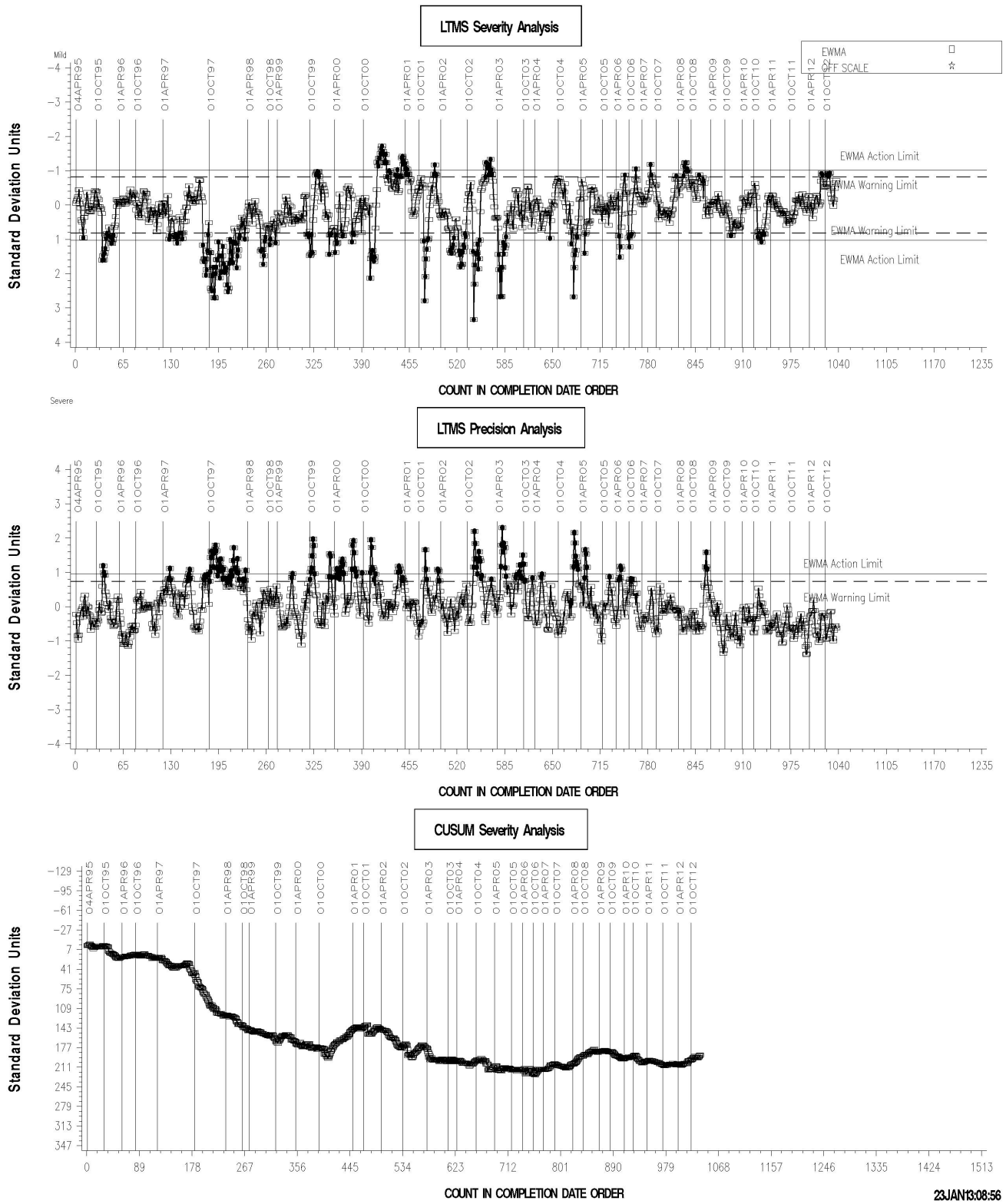

TIMELINE OF SIGNIFICANT EVENTS IN THE HISTORY OF THE L-42 TEST:

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, Discriminition 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 Worshop 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
20061215	06-4	Engine Throttle Body Calibration Procedure

Effective Date	Information Letter	Event
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:

		@ TMC	
Oil	Cans @ Labs	Cans	Gallons
112-2	5	15	7.5
113	18	143	71.5
116	0	0	0.0
116-1	43	40	20.0
Total	66	198	99.0

The supply of oil 112-2 (the discrimination oil) is nearly depleted. Oil 113 is the replacement for it. Oil 116-1 is nearly depleted and can not be re-blended. The surveillance panel has been made aware of the need for a replacement and has identified a candidate. The replacement oil is slightly milder than 116-1. The L-42 panel is considering means of addressing the performance difference (correction factor, etc.).

SDP/sdp/mem13-003.sdp.doc
cc: Frank Farber
Jeff Clark
ftp://ftp.astmtmc.cmu.edu/docs/gear/l42/semiannualreports/l42-10-2012.pdf

Distribution: email