

# **Test Monitoring Center**

@ Carnegie Mellon University 6555 Penn Avenue, Pittsburgh, PA 15206, USA http://astmtmc.cmu.edu 412-365-1000

MEMORANDUM:	13-010
DATE:	February 26, 2013
TO:	Chris Prengaman, Chairman, L-37 Surveillance Panel
FROM:	Scott Parke Star
SUBJECT:	L-37 Rater Calibration from April 1, 2012 through September 30, 2012

The following is a summary of L-37 rater calibration activity from April 1, 2012 through September 30, 2012.

	Reporting Data	Calibrated on 9-30-2012
Number of Raters	9	7

BY-LAB RATER



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# Test Distribution by Validity

and by variaty		Totals		
		Last Period	This Period	
Accepted for calibration	AC	10	11	
Rejected (mild)	OC	0	2	
Rejected (severe)	OC	3	2	
Rejected (multiple)	OC	0	0	
Rejected (precision)	OC	0	3	
Workshop data	AG	24	12	
Total		37	30	

# CAUSE OF REJECTED TESTS



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		Ridging		Rippling		Spitting		Wear	
Rater	Ν	Avg Yi	STD*	Avg Yi	STD*	Avg Yi	STD*	Avg Yi	STD*
В	4	0.196	0.394	0.065	0.219	-0.177	0.220	-0.344	0.635
Е	4	0.214	0.586	-0.747	1.312	-0.306	0.818	-0.265	0.917
Н	8	0.040	0.719	-0.255	1.138	-0.180	0.315	-0.036	0.708
Ι	4	0.329	0.939	-0.056	1.030	0.255	0.376	0.079	0.517
М	4	0.595	1.140	-0.293	0.589	-0.061	0.614	0.580	0.230
Ν	4	-0.027	0.505	-0.574	0.590	-0.015	0.316	-0.778	0.564
R	12	-0.058	1.227	0.161	1.008	0.081	1.146	-0.280	0.641
Т	16	-0.064	0.765	-0.142	0.932	-0.151	0.691	0.286	2.566
U	16	-0.633	1.598	-0.180	0.970	0.284	0.573	0.554	1.212
ALL	72	-0.087	1.089	-0.162	0.932	0.006	0.692	0.095	1.431

\* Due to the small number of ratings per pinion, the standard deviation of the Yi values is given in place of a pooled standard deviation.





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SPITTING Severity as Measured by Delta/s



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**RIDGING** Precision as Measured by Yi STD



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SPITTING Precision as Measured by Yi STD

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**INDUSTRY CONTROL CHARTS:** 

The industry control charts are shown beginning on the following page.

RIDG this period continued its long-standing severe trend (testing after the close of this period appears to be more on target); RIPP, SPIT, and WEAR were generally on target. The March 2011 target update reduced target standard deviations for the most part and thus accounts for the increase in variability shown in testing seen since then. All parameters remained within precision control limits.

### L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA





#### RIPPLING LTMS Severity Analysis EWMA Mild 010CT12 4 -OFF SCALE ☆ 01APR04 A P R O F 010CT06 D1APR12 OCT04 01APR07 DIAPR. 01APF 3 Standard Deviation Units EWMA Action Limit . . . EWMA Action Limit -2 . • . -3 -4 15 0 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270 285 COUNT IN COMPLETION DATE ORDER Severe LTMS Precision Analysis 01APR10 01APR12 010CT12 5 -09 MAY03 OCT03 APR05 OCT05 APR06 010CT06 01APR07 RCDDV APROG 010CT09 01APR04 OCT04 APR1 1 OCT 1 4 -3 Standard Deviation Units 2 -EWMA Action Limit 1 0 -MAN, -1 1 M -2 -3 -4 -5 15 30 45 60 75 90 105 165 180 195 210 0 120 135 150 225 240 255 270 285 COUNT IN COMPLETION DATE ORDER CUSUM Severity Analysis 2 010CT12 54 **D9MAY03** 010CT03 01APR05 01APR08 0100709 01APR10 01APR04 010CT04 D1APR06 01APR07 010CT08 01APR09 01APR1 010CT 010CT 01APR1 46 38 30 Standard Deviation Units 22 14 -6 -2 -10 -18 -26 -34 -42 -50 -58 15 . 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270 285 300 315 330 345 0 COUNT IN COMPLETION DATE ORDER 19FEB13:14:48

### L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA



### L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA





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15 30 45 60 75 90 105 120 135 150 165

#### WEAR LTMS Severity Analysis EWMA 4 -OFF SCALE ☆ 010CT06 01APR10 01APR07 D1APR12 O1APF 01APF 3 ē Standard Deviation Units EWMA Action Limit \* \*\*\* 0 EWMA Action Limit : . ... . -2 .: . . . -3 -4 15 0 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270 285 COUNT IN COMPLETION DATE ORDER Severe LTMS Precision Analysis 01APR10 010CT12 5 -09MAY03 APR05 OCT05 APR06 010CT06 01APR07 RCDDV APROG 010CT09 01APR12 D1APR04 OCT04 1 APR1 1 OCT 1 4 -3 Standard Deviation Units 2 -EWMA Action Limit 1 APA TAX 0 -V -1 -2 -3 -4 -5 15 30 45 60 75 90 105 180 195 210 0 120 135 150 165 225 240 255 270 285 COUNT IN COMPLETION DATE ORDER CUSUM Severity Analysis 2 010CT12 46 -**D9MAY03** 010CT03 01APR05 01APR08 0100709 01APR10 01APR04 010CT04 D1APR06 01APR07 010CT08 01APR09 010CT 01APR 010CT 01APR1 38 30 22 Standard Deviation Units 14 -6 -2 -10 -18 -26 -34 -42 -50 -58

180 195 210 225 240 255 270 285 300 315

COUNT IN COMPLETION DATE ORDER

## L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA



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SDP/sdp/mem13-010.sdp.docx cc: Frank Farber

Frank Farber Jeff Clark <u>ftp://ftp.astmtmc.cmu.edu/docs/gears/l37rc/semiannualreports/l37rc-10-2012.pdf</u>

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