ASTM Test Monitoring Center

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Pittsburgh, PA 15206-4489
(412) 365-1000

MEMORANDUM: 05-074

DATE: October 13, 2005

TO: Don Bartlett, Chairman, L-37 Surveillance Panel

FROM: Donald Lind

SUBJECT: L-37 Rater Calibration Status from April 1, 2005 through September 30, 2005

The following is a summary of the L-37 rater calibrations reported to the Test Monitoring Center during the period April 1, 2005 through September 30, 2005.

Rater Summary

	Reporting Data	Calibrated as of 9/30/05
Number of Raters	9	9

The following chart shows the laboratory/rater distribution:
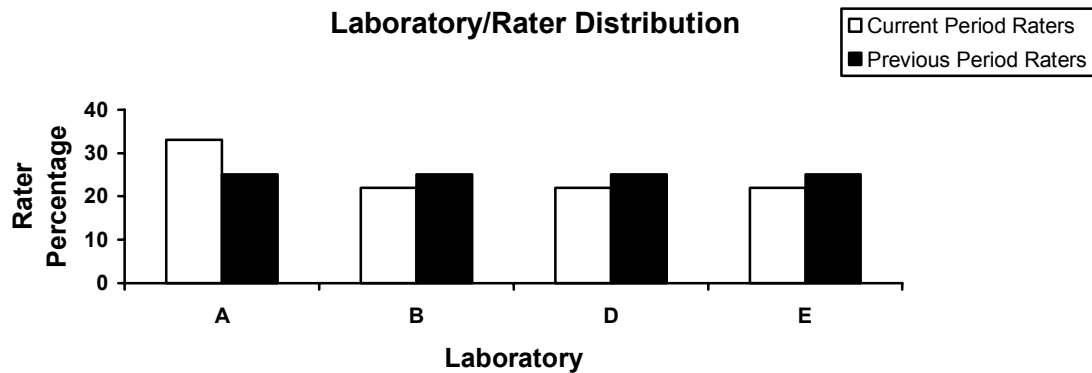
The following summarizes the status of the rater calibration tests reported to the TMC:

|	TMC Validity Codes	No. of Calibrations
Statistically Acceptable	AC	13
Failed Acceptance Criteria	OC	6
Total		19

Summary

A total of 19 L-37 rater calibration results from nine different raters were reported to the TMC this period. Five of the nine raters were within the acceptance criteria with their first set of pinions. Four of the raters needed a second set of pinions to calibrate. All nine raters are currently calibrated. Two of the nine raters had their calibration period reduced to half (3 months) due to triggering an EWMA severity alarm for the wear parameter. Both raters were from the same lab (A).

A detailed list of reasons tests failed the acceptance criteria are shown in Table 1. The following charts summarize these reasons with a breakdown by parameter of the failed tests.

Distribution of RCMS Rater Alarms

Yi Severe
67%
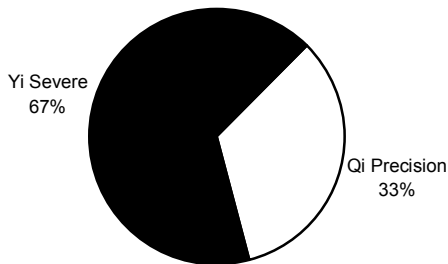
Qi Precision
33%

Distribution of Rater Alarms by Parameter

Ridging
33%
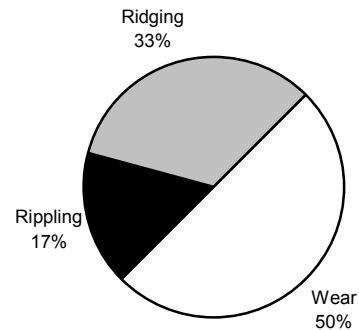
Rippling
17%

Wear
50%

There were no RCMS deviations written this period.

Severity and Precision

For this period, the mean delta/s was -0.30 severe for Wear, 0.06 mild for Rippling, -0.01 severe for Ridging, and -0.16 severe for Spitting. Precision was 0.83 for Wear, 0.73 for Rippling, 0.75 for Ridging, and 0.54 for Spitting. A straight standard deviation of Yi was used because the number of ratings per pinion was too small to determine a pooled standard deviation. Below is a table illustrating rater severity for this period:

Rater	Wear		Rippling		Ridging		Spitting	
	Yi	S.D. *	Yi	S.D. *	Yi	S.D. *	Yi	S.D. *
A	-0.26	0.74	0.07	0.57	0.12	0.75	0.20	0.46
B	0.16	0.59	.17	0.66	0.47	0.35	0.18	0.43
C	-0.12	0.58	0.62	0.03	-0.18	0.17	0.05	0.09
D	-0.44	0.92	-0.11	0.90	-0.21	0.69	-0.39	0.75
E	-0.39	0.87	0.12	0.77	-0.62	0.46	-0.29	0.62
F	-0.54	1.00	0.03	0.62	0.18	0.87	-0.43	0.41
H	-0.34	0.73	-0.19	0.74	0.37	0.76	0.08	0.32
I	0.45	0.52	0.52	1.10	-0.03	0.74	0.15	0.10
K	-0.29	0.69	0.21	0.50	-0.60	0.88	-0.12	0.09

*A straight standard deviation of Yi was used as the number of ratings per pinion was too small to determine a pooled standard deviation.

Industry Control Charts

Figures 1 through 4 are the L-37 rater industry control charts for pinion Wear, Rippling, Ridging, and Spitting, respectively. Severity and precision EWMA charts for pinion Rippling, Ridging, and Spitting were in control this report period. Pinion Wear triggered eight EWMA severity alarms this period. These alarms appear to be related to three raters (D, E, and F). All three raters triggered severity shewhart alarms of 1.0 standard deviations severe or greater this report period. (Table 1).

Attachments

c: L-37 Surveillance Panel
   L-37 Rater Task Force
   J. L. Zalar
   F. M. Farber
   ftp://ftp.astmtmc.cmu.edu/docs/rater_calibration/l37rc-10-2005.pdf

Distribution: Email

Listing of Tables and Figure Included as Part of This Report to the L-37 Rater Calibration Report

Table 1 is a Detailed List Summarizing the Reasons for Failed Tests

Figure 1 is the L-37 Rater Industry Control Charts for Pinion Wear

Figure 2 is the L-37 Rater Industry Control Charts for Pinion Rippling

Figure 3 is the L-37 Rater Industry Control Charts for Pinion Ridging

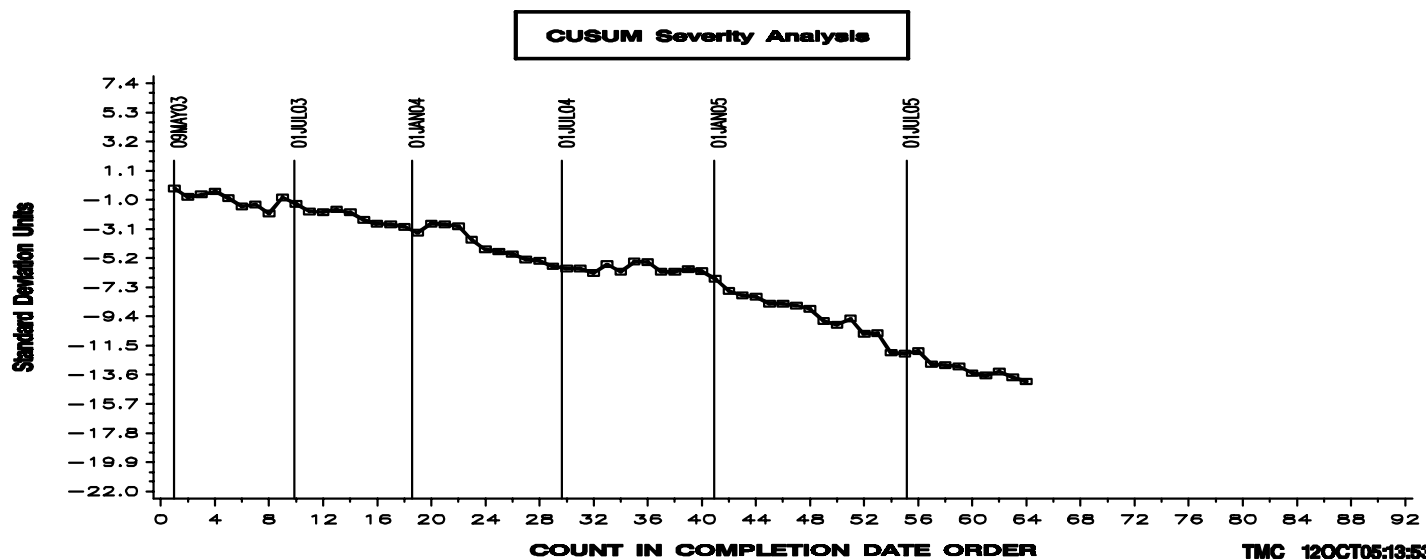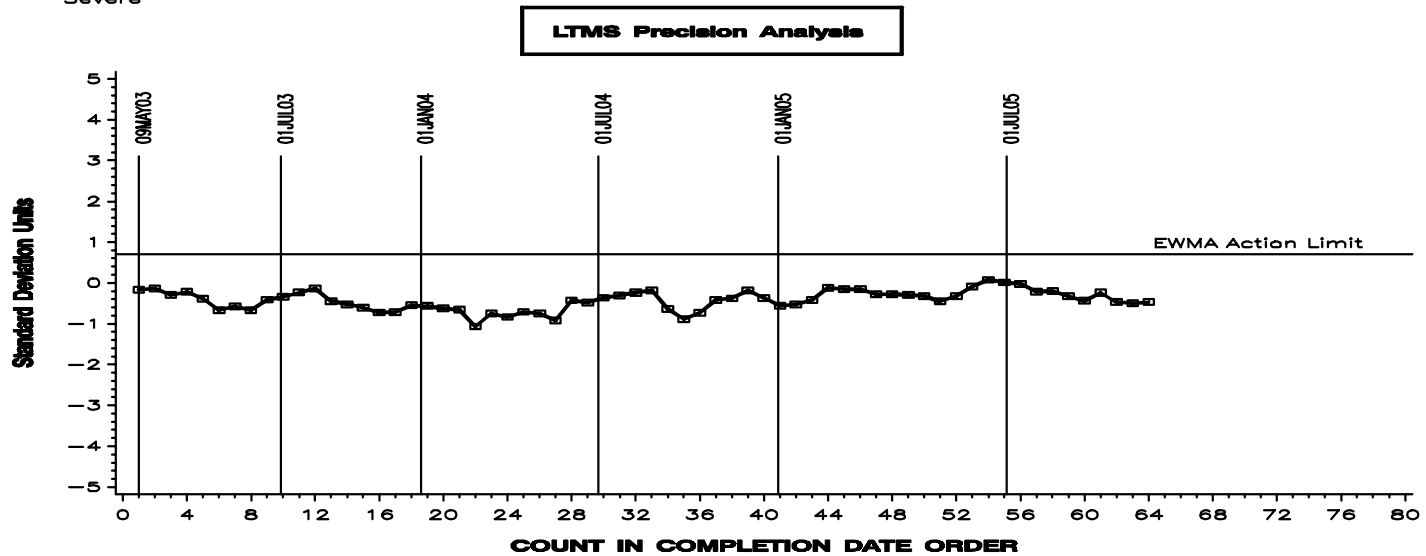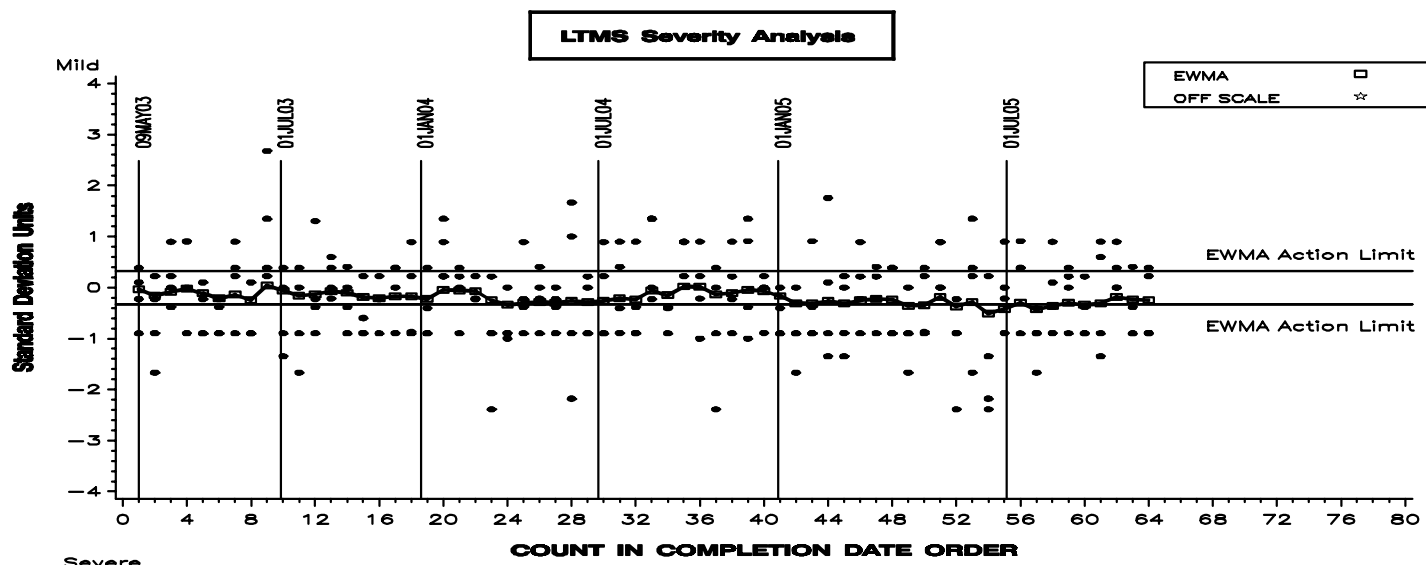Figure 4 is the L-37 Rater Industry Control Charts for Pinion Spitting

Table 1

Summary of Reasons for Rejected Tests

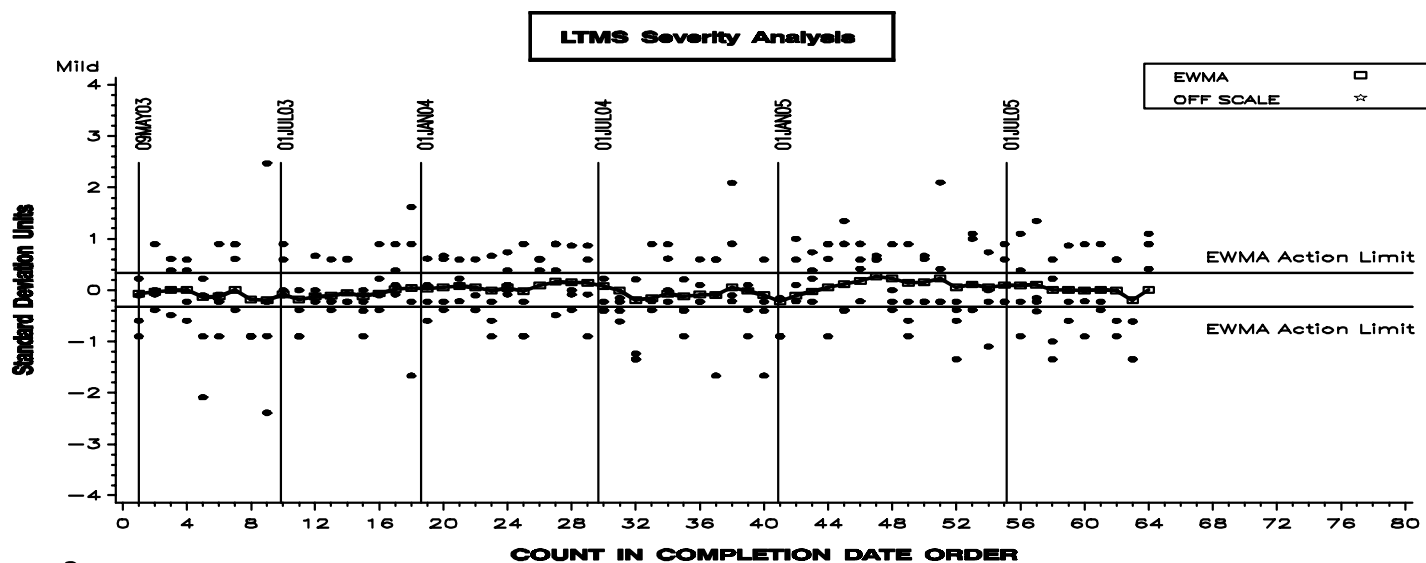| Lab	Rater	Reason
A	F	Wear Severe
A	F	Ridging Mild
A	H	Ridging Mild
D	D	Wear Severe
D	D	Rippling Severe
D	E	Wear Severe

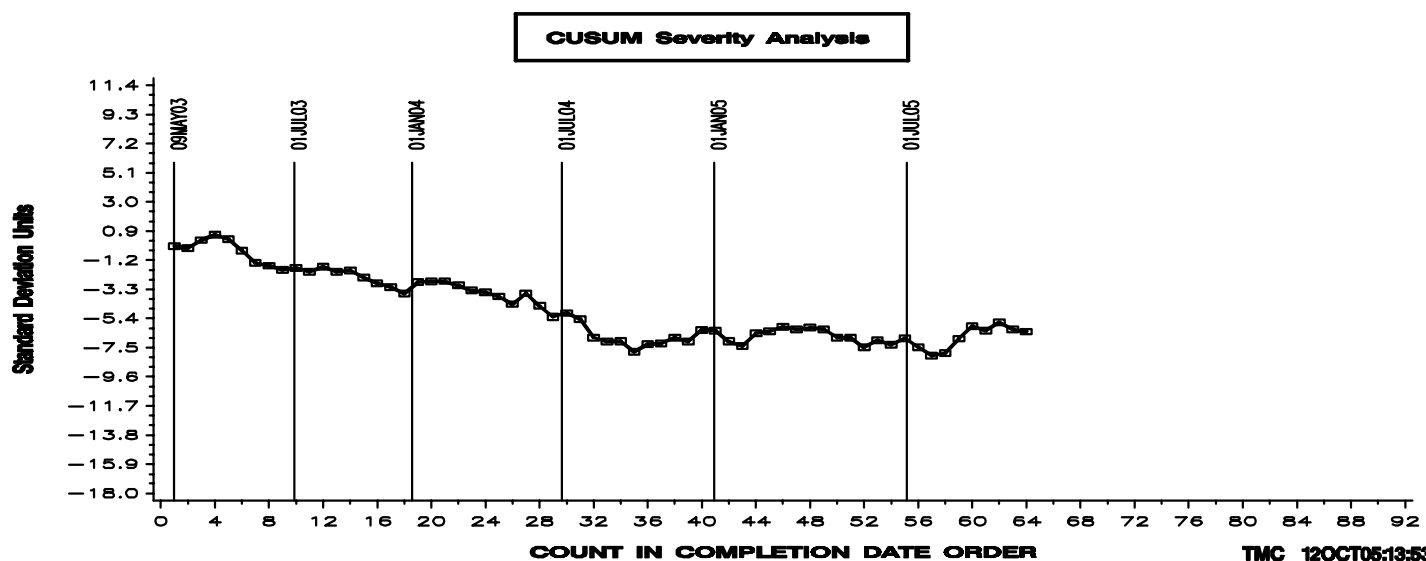FIGURE 1
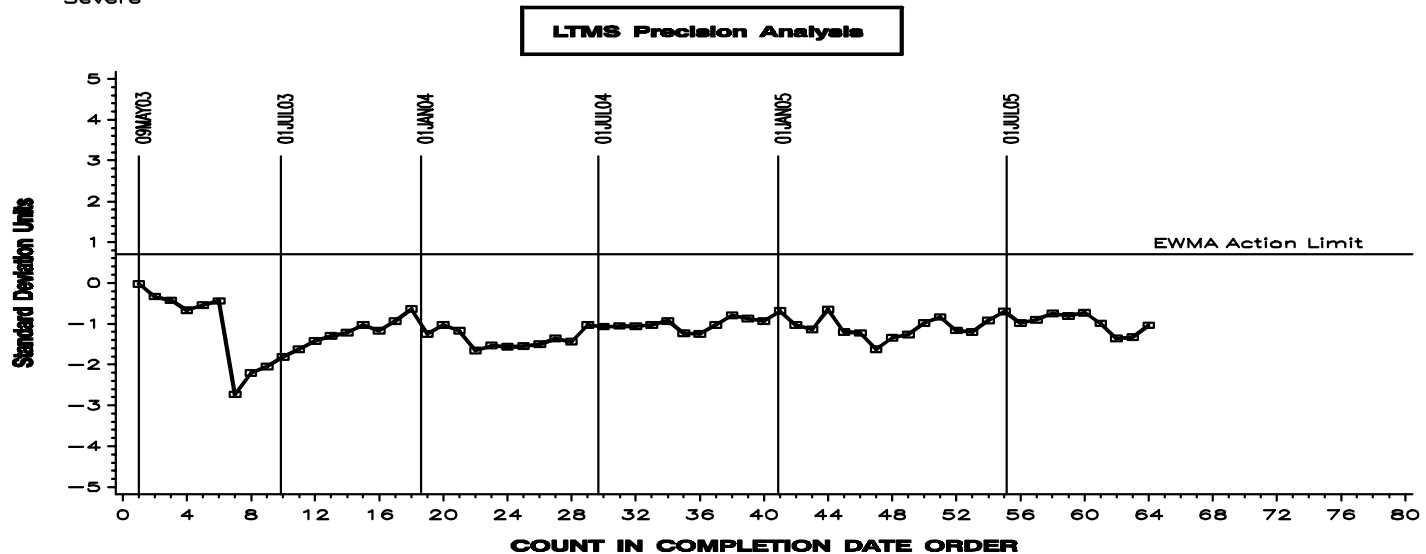
L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

WEAR
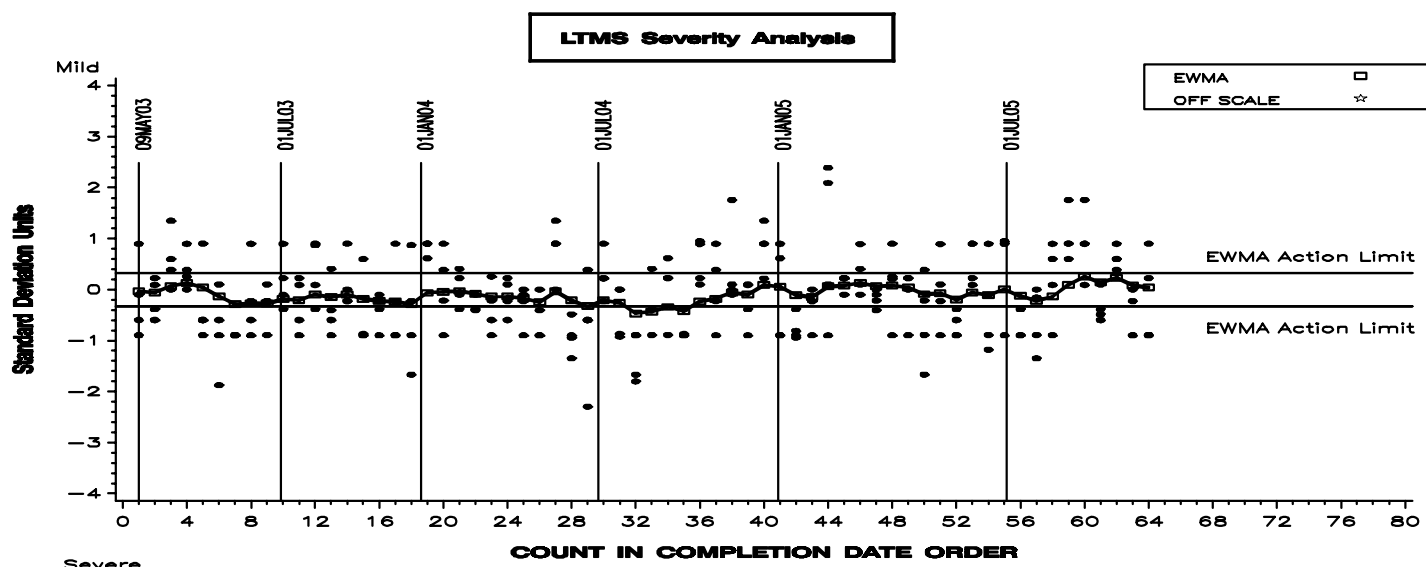

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FIGURE 2

L−37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIPPLING

FIGURE 3
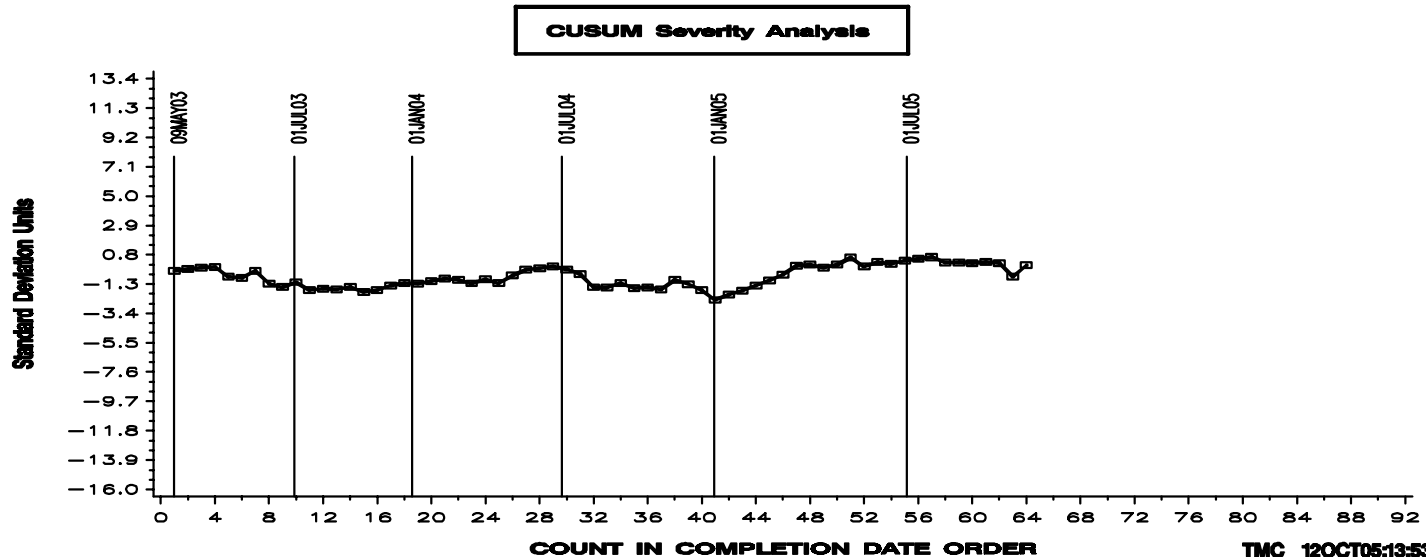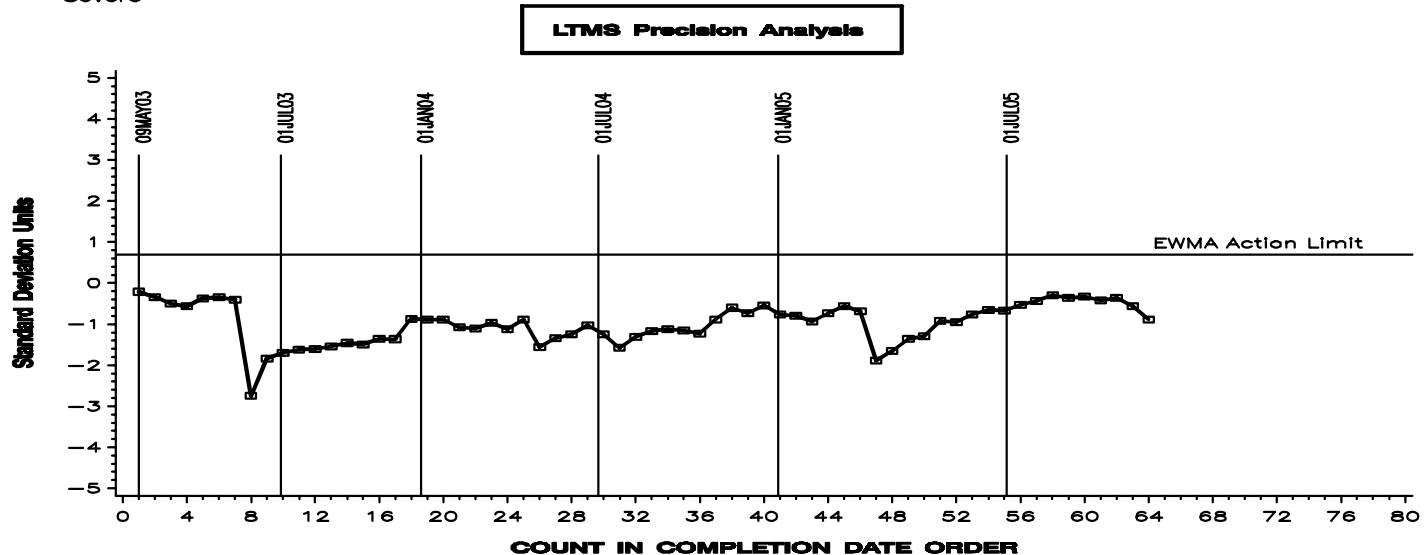
L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIDGING
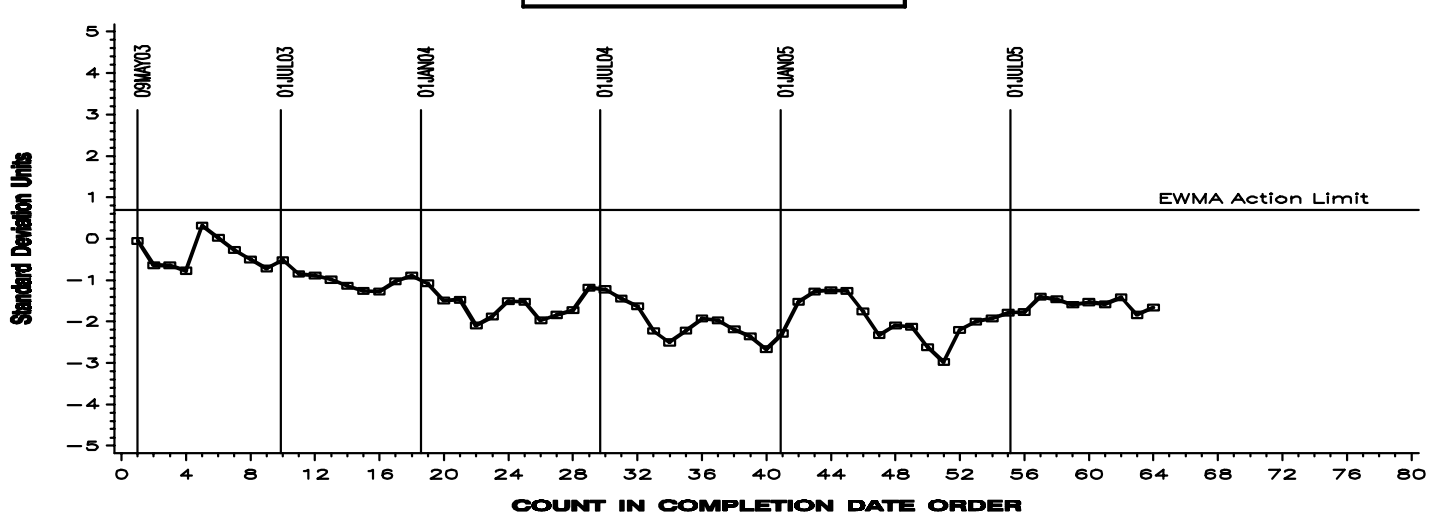
FIGURE 4

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

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