



## Test Monitoring Center

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

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

MEMORANDUM: 20-043  
DATE: October 12, 2020  
TO: Rob Slocum, Chairman, L-37 Surveillance Panel  
FROM: Dylan Beck *Dylan Beck*  
SUBJECT: L-37 Rater Calibration from April 1, 2020 through September 30, 2020

Attached is a summary of L-37 rater calibration activity this period.

DJB/djb/mem20-043.djb.doc

cc: Frank Farber  
Jeff Clark

L-37 Surveillance Panel

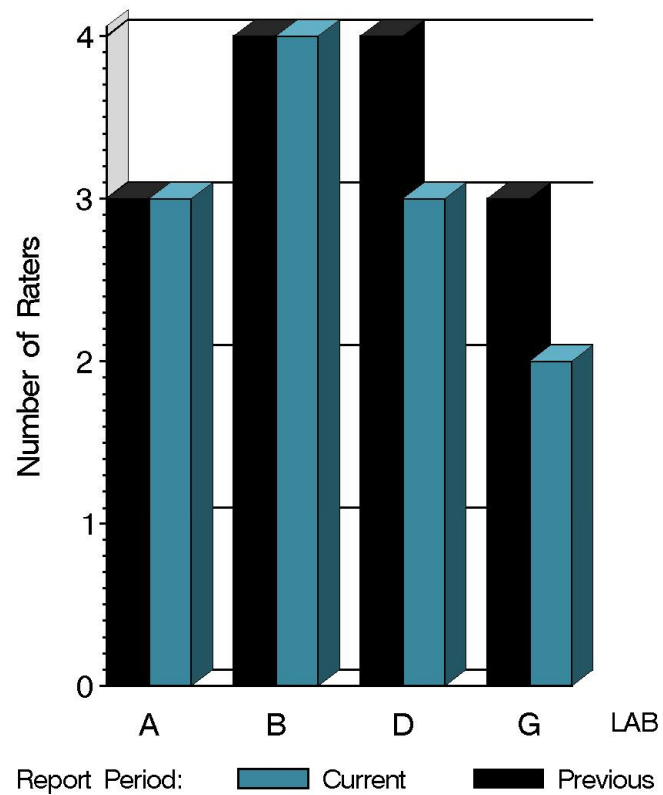
<http://www.astmtmc.cmu.edu/ftp/docs/gear/l37rc/semiannualreports/l37rc-10-2020.pdf>

Distribution: email

# L-37 Rater Calibration

	Reporting Data	Calibrated on 9-30-20
Number of Labs	4	4
Number of Raters	12	12

BY-LAB RATER DISTRIBUTION



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# L-37 Rater Calibration

## Test Distribution by Validity

		Totals	
		Last Period	This Period
Accepted for calibration	AC	16	14
Rejected (Mild)	OC	4	1
Rejected (Severe)	OC	4	3
Rejected (Multiple)	OC	2	0
Rejected (Precision)	OC	0	0
Workshop data	AG	10	0
Total		36	18

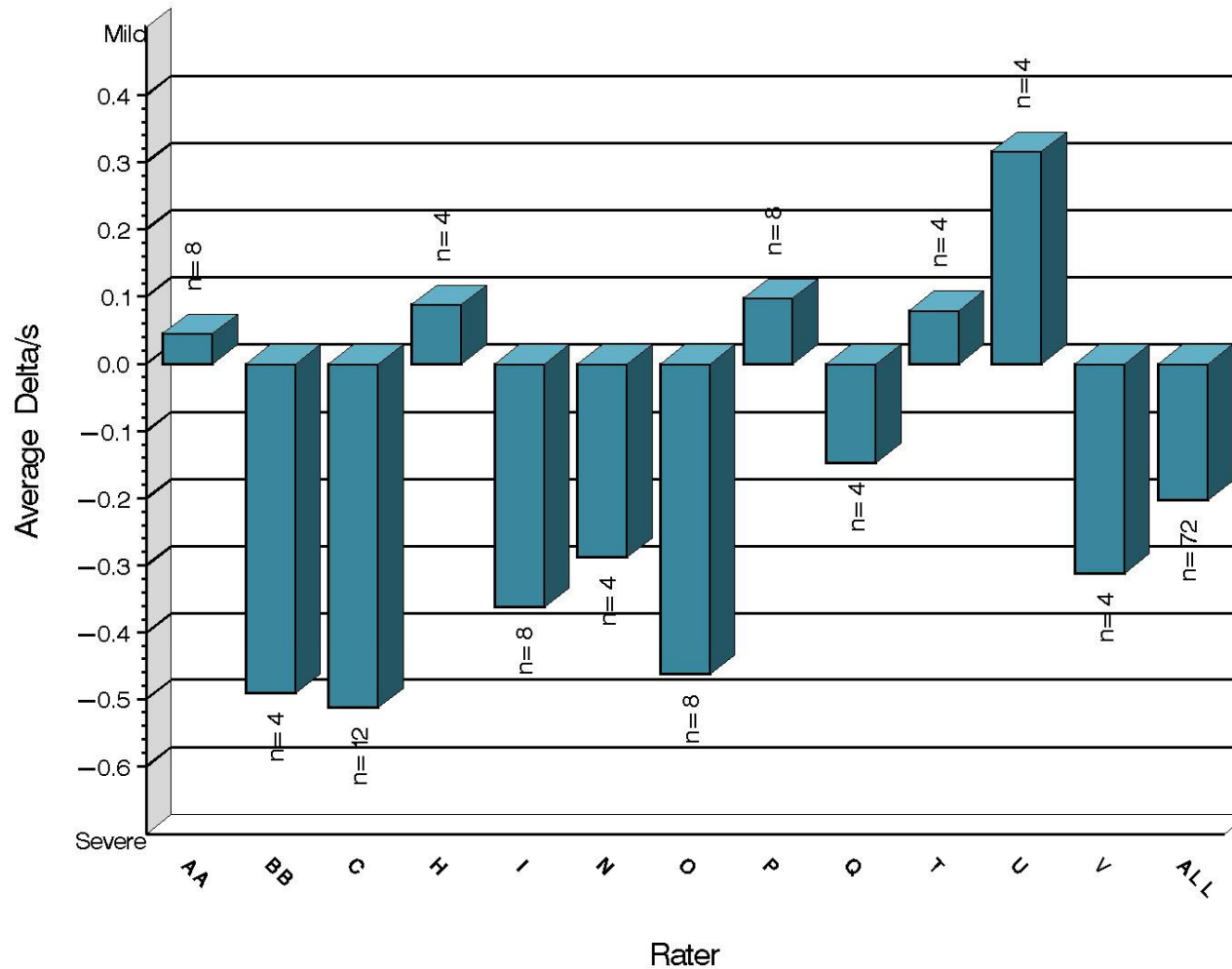
# L-37 Rater Calibration

Rater	N	RIDG		RIPP		SPIT		WEAR	
		Avg Yi	STD*	Avg Yi	STD*	Avg Yi	STD*	Avg Yi	STD*
AA	8	0.045	1.029	0.445	0.829	-0.285	0.734	-0.114	0.701
BB	4	-0.491	0.899	-0.380	0.538	0.0428	0.303	-0.153	0.361
C	12	-0.512	0.478	-0.050	0.741	-0.108	0.329	-0.447	1.064
H	4	0.088	0.600	0.033	0.633	-0.128	0.256	-0.191	0.439
I	8	-0.362	0.657	0.251	0.328	-0.623	2.297	0.156	0.843
N	4	-0.288	0.730	-0.033	0.372	-0.450	0.754	-0.126	0.887
O	8	-0.463	0.631	-0.241	0.810	-0.241	0.810	-0.405	1.517
P	8	0.098	0.757	0.109	1.009	0.070	0.261	1.043	2.313
Q	4	-0.147	0.551	-0.373	0.943	-0.037	0.290	-0.177	0.644
T	4	0.079	0.663	-0.002	0.545	-0.095	0.386	-0.103	0.676
U	4	0.316	0.533	0.212	0.694	0.875	0.740	0.211	0.519
V	4	-0.311	0.086	0.021	0.310	-0.301	0.347	-0.061	0.931
ALL	72	-0.203	0.684	0.025	0.703	-0.098	0.889	-0.032	1.169

\* 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.

# L-37 Rater Calibration

RIDGING  
Severity as Measured by Delta/s

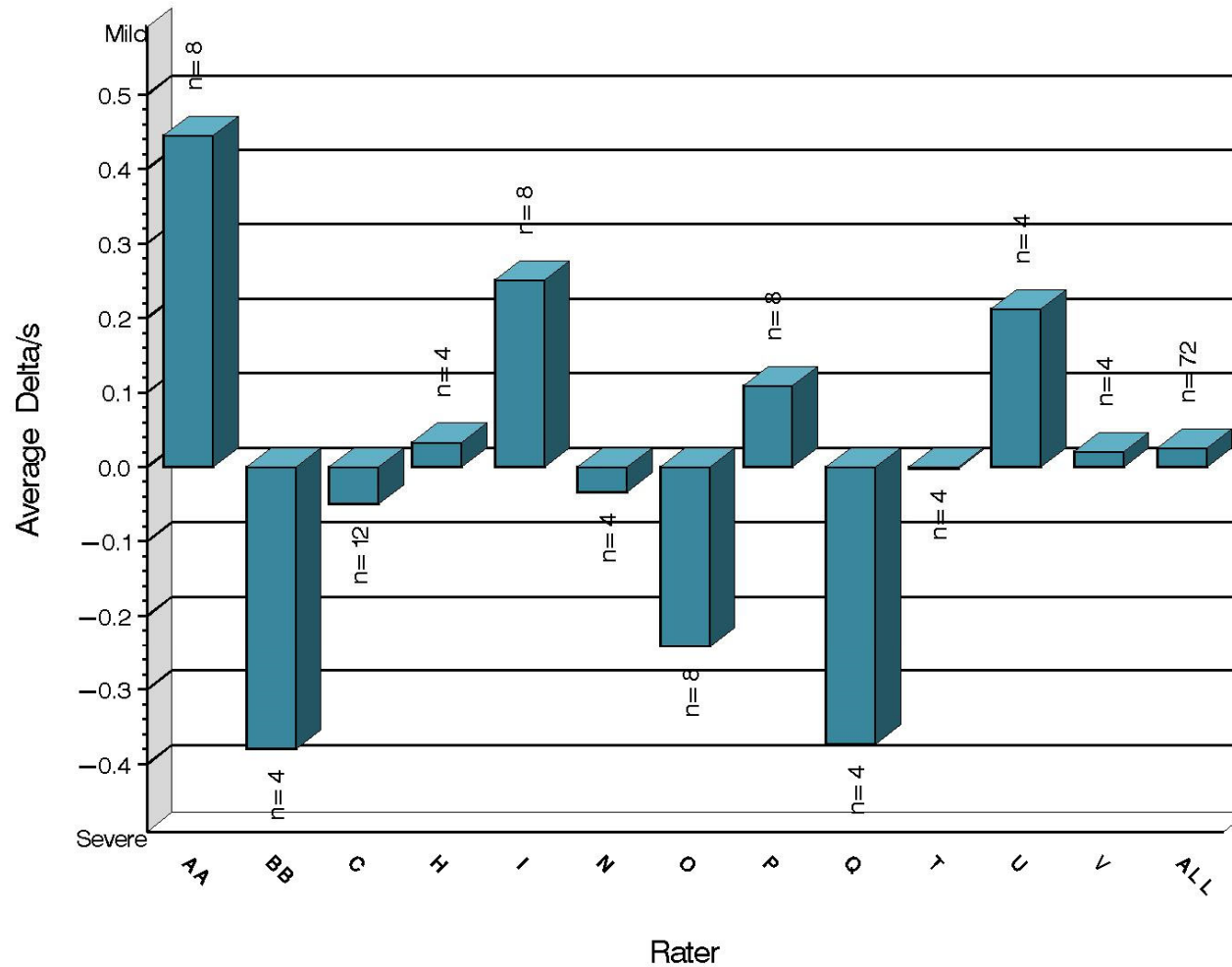


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# L-37 Rater Calibration

## RIPPLING

Severity as Measured by Delta/s

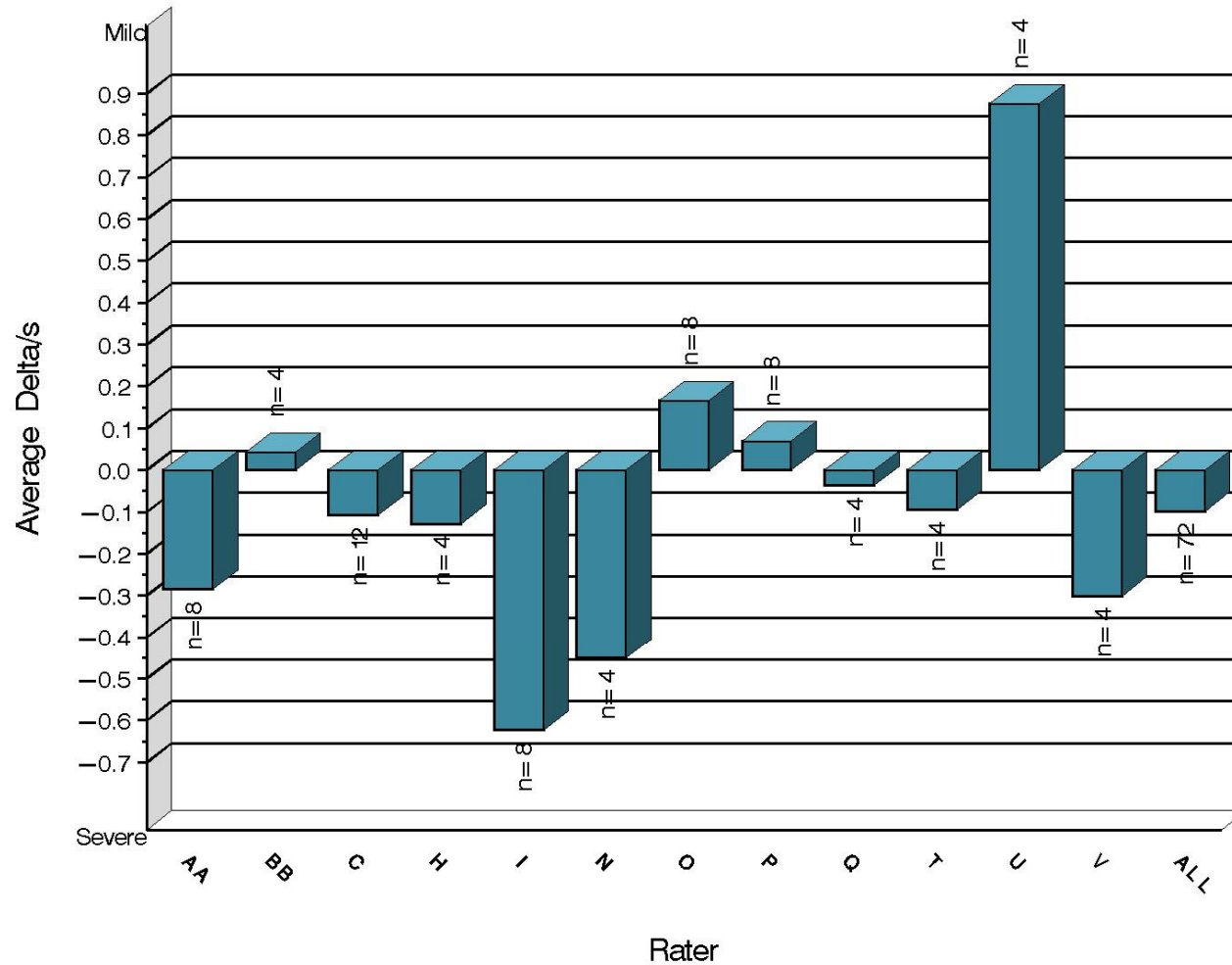


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# L-37 Rater Calibration

SPITTING

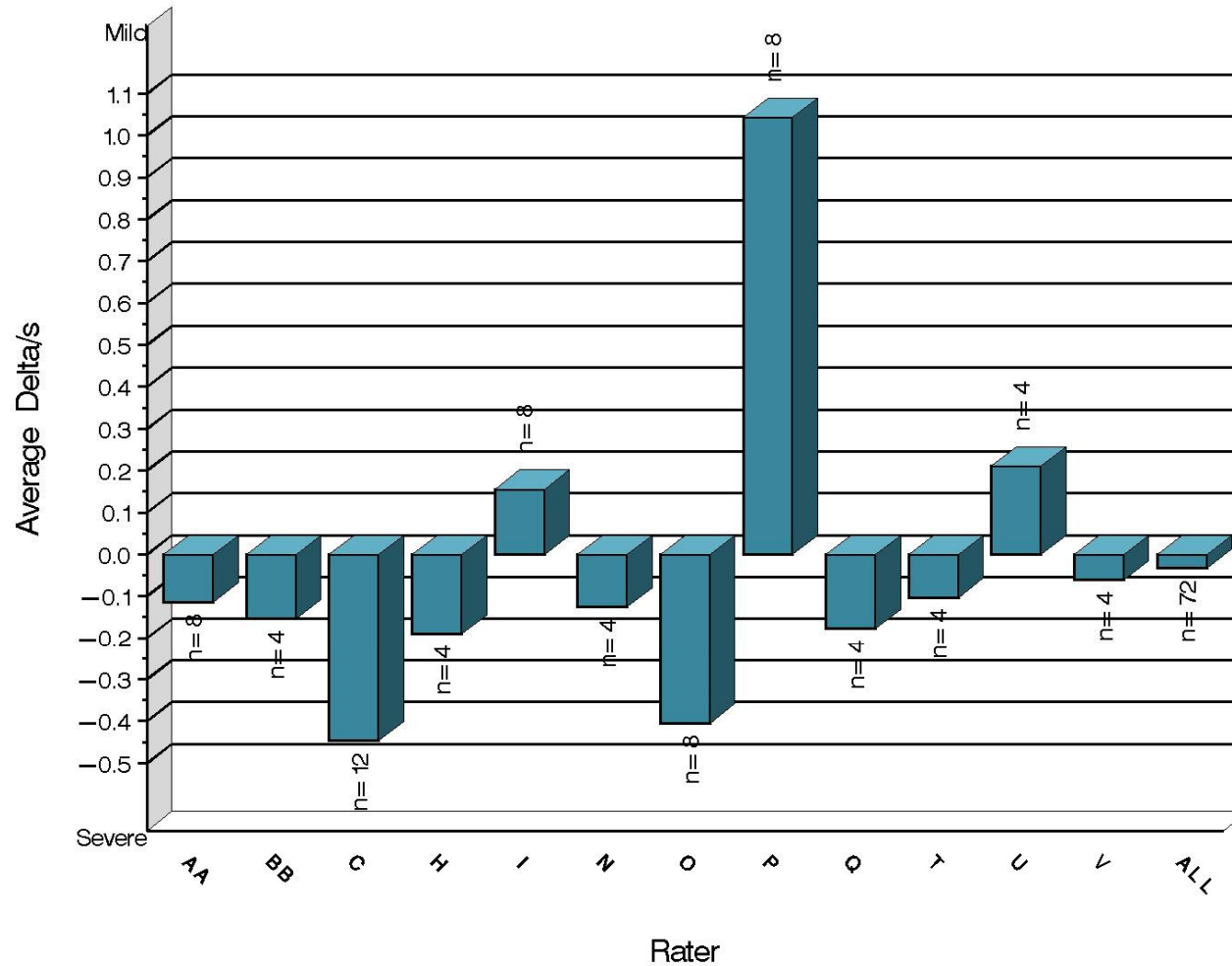
Severity as Measured by Delta/s



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# L-37 Rater Calibration

WEAR  
Severity as Measured by Delta/s

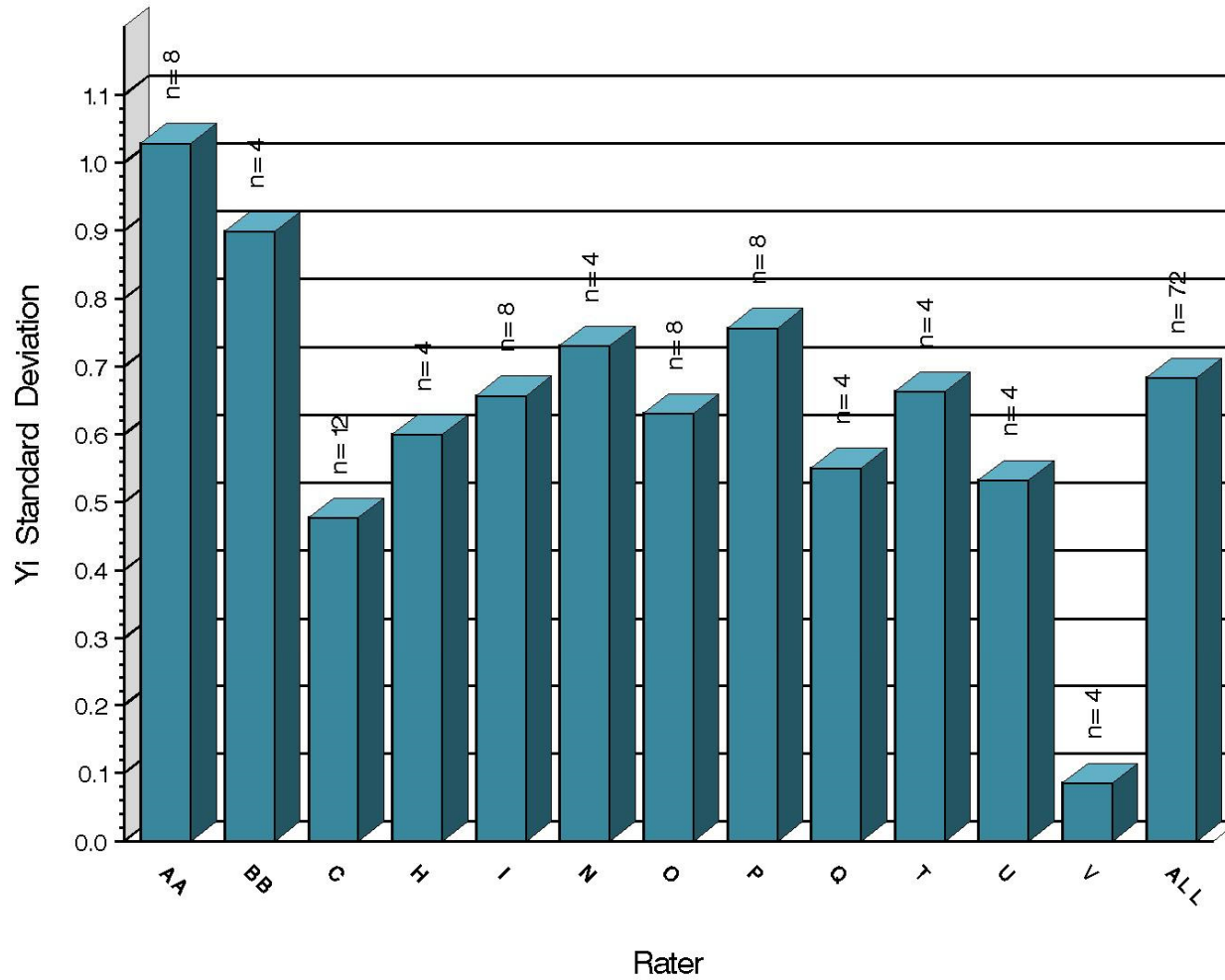


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# L-37 Rater Calibration

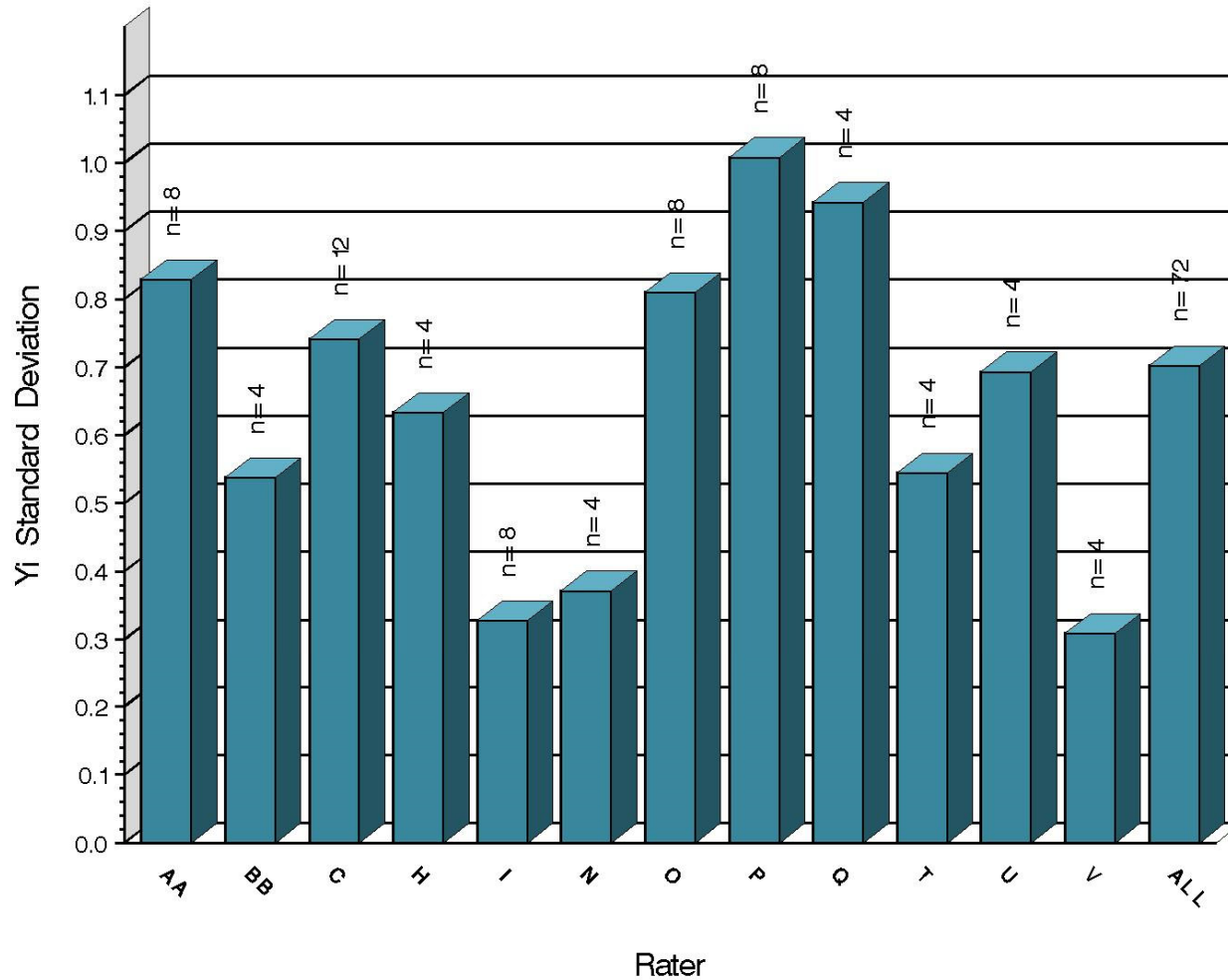
RIDGING  
Precision as Measured by Y1 STD



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# L-37 Rater Calibration

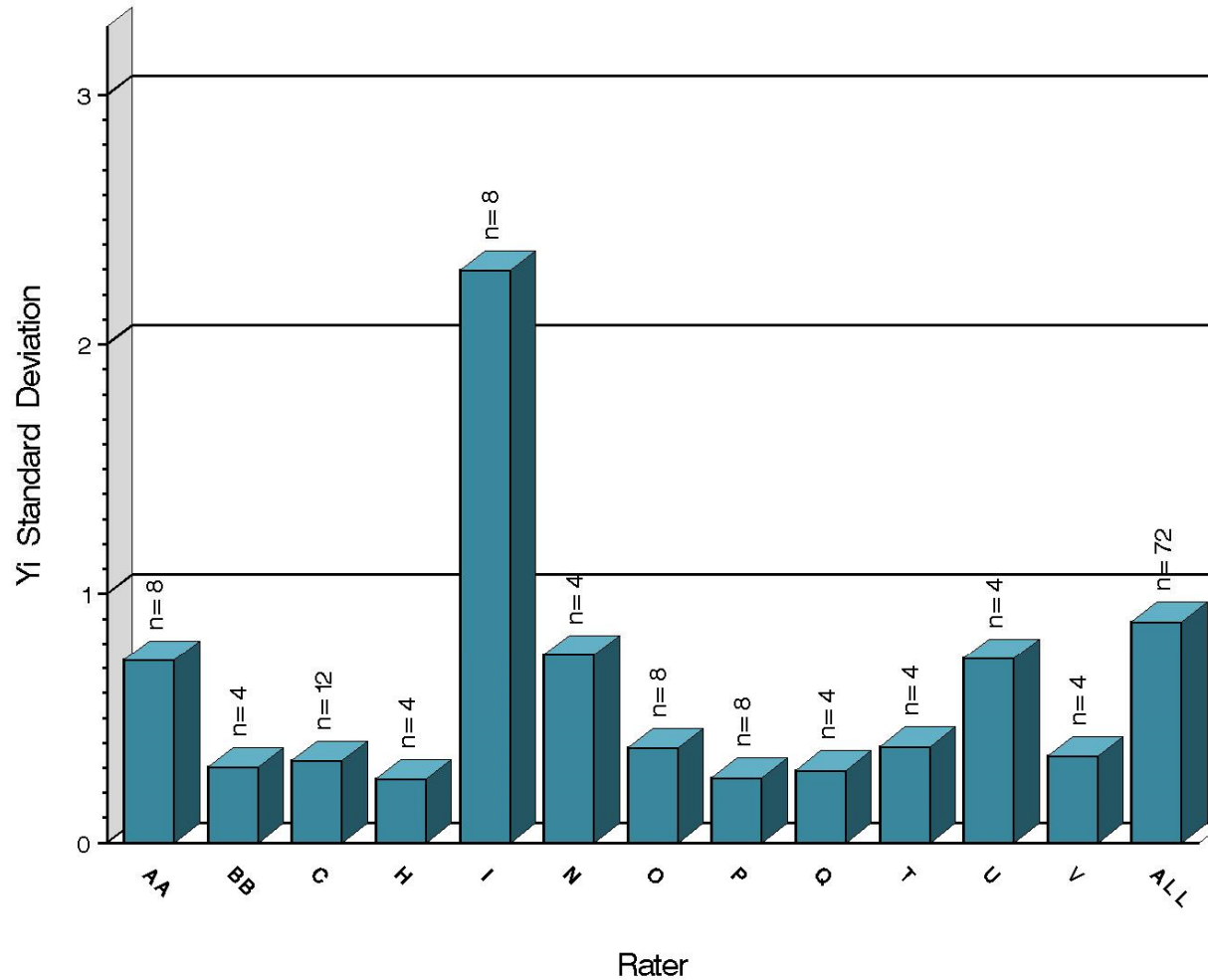
RIPPLING  
Precision as Measured by Y1 STD



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# L-37 Rater Calibration

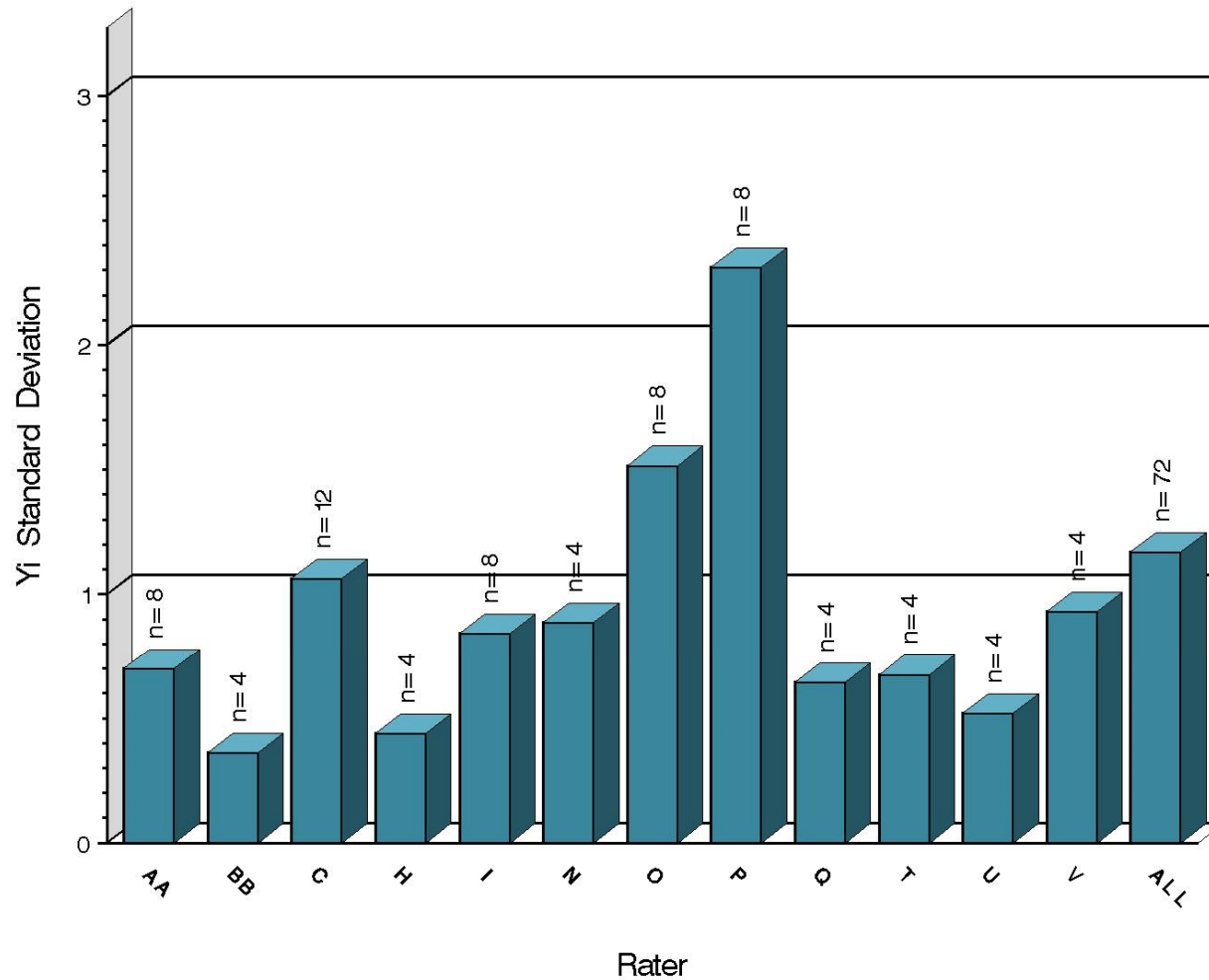
SPITTING  
Precision as Measured by Y1 STD



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# L-37 Rater Calibration

WEAR  
Precision as Measured by Y1 STD



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# L-37 Rater Calibration

## SUMMARY OF SEVERITY & PRECISION

### Severity

RIPP briefly exceeded the action limit this period in the mild direction, but has since returned within limits. RIDG, WEAR, and SPIT remained within limits throughout the period.

### Precision

All other parameters remained within limits throughout the period.

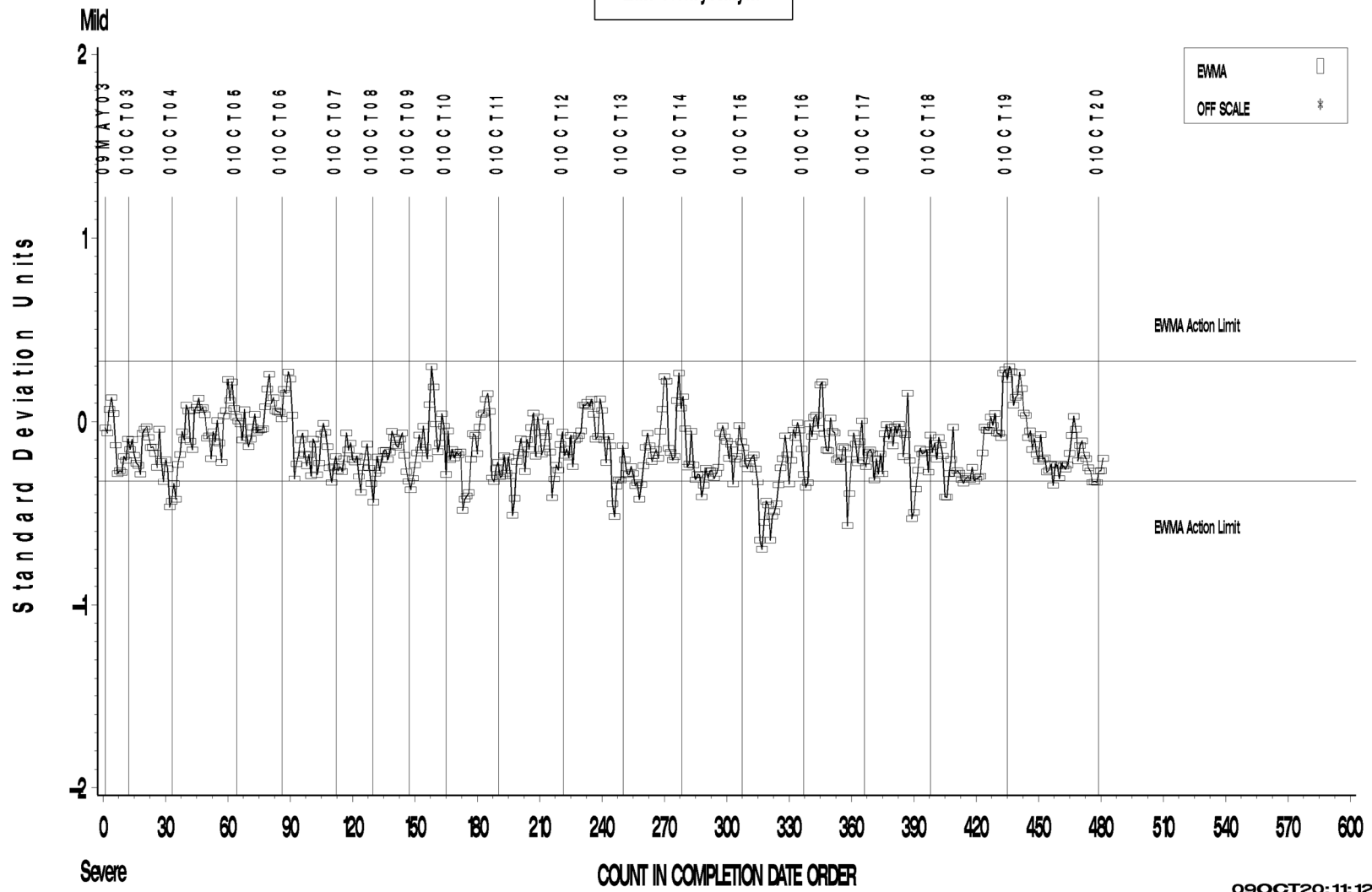
Industry rater control charts follow.

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

## RIDGING

LTMS Severity Analysis



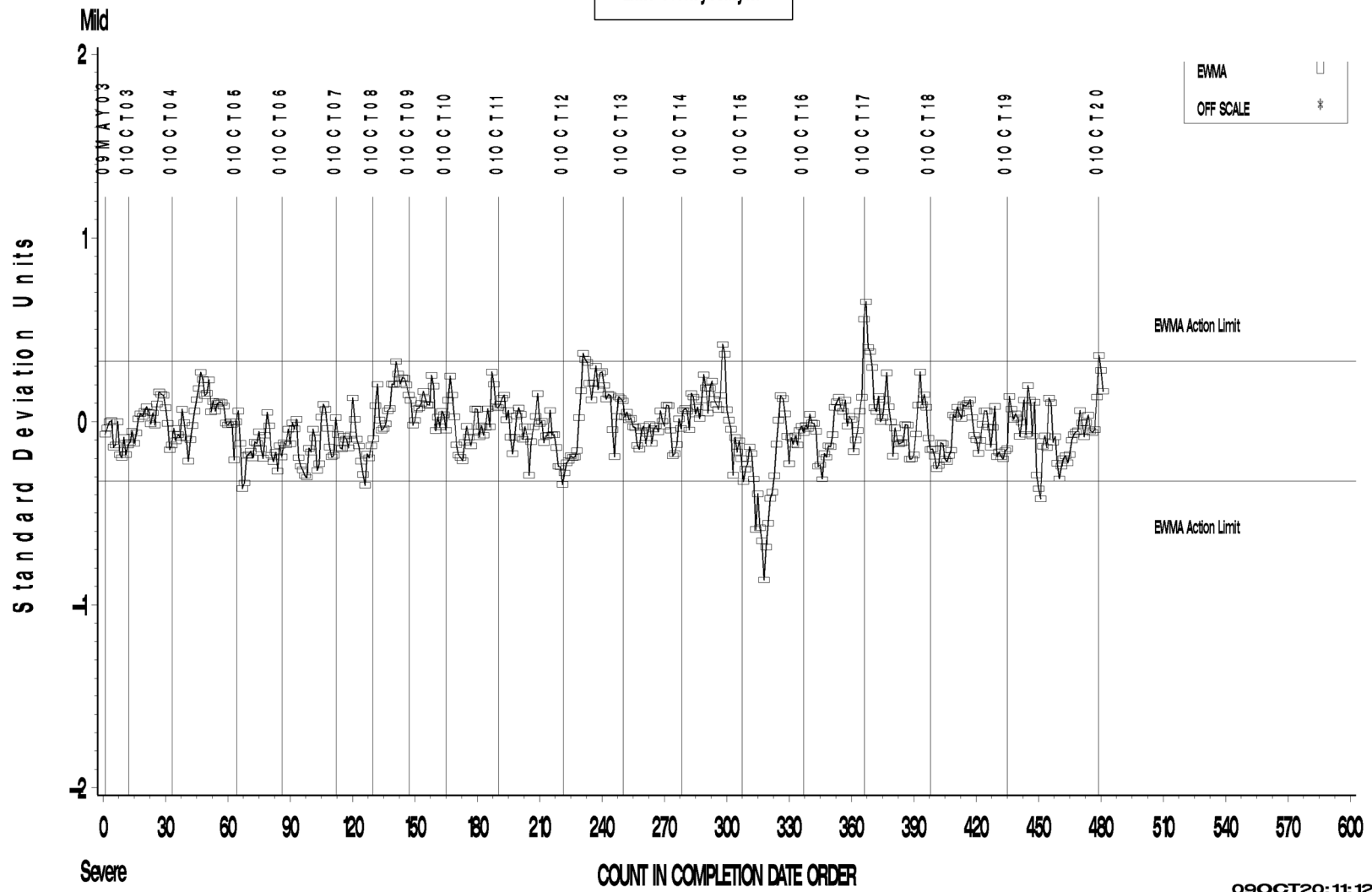
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

## RIPPLING

LTMS Severity Analysis



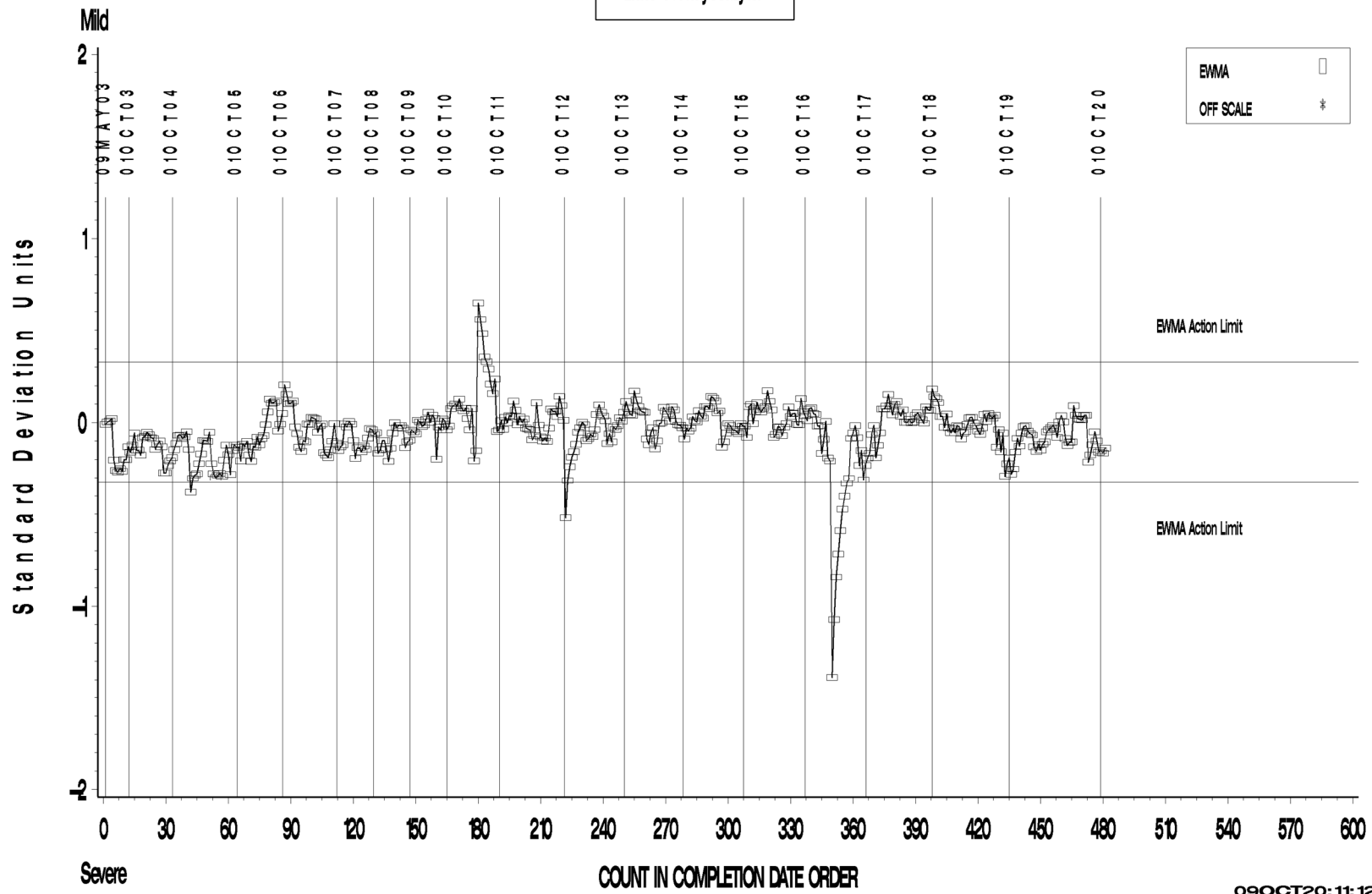
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

LTMS Severity Analysis



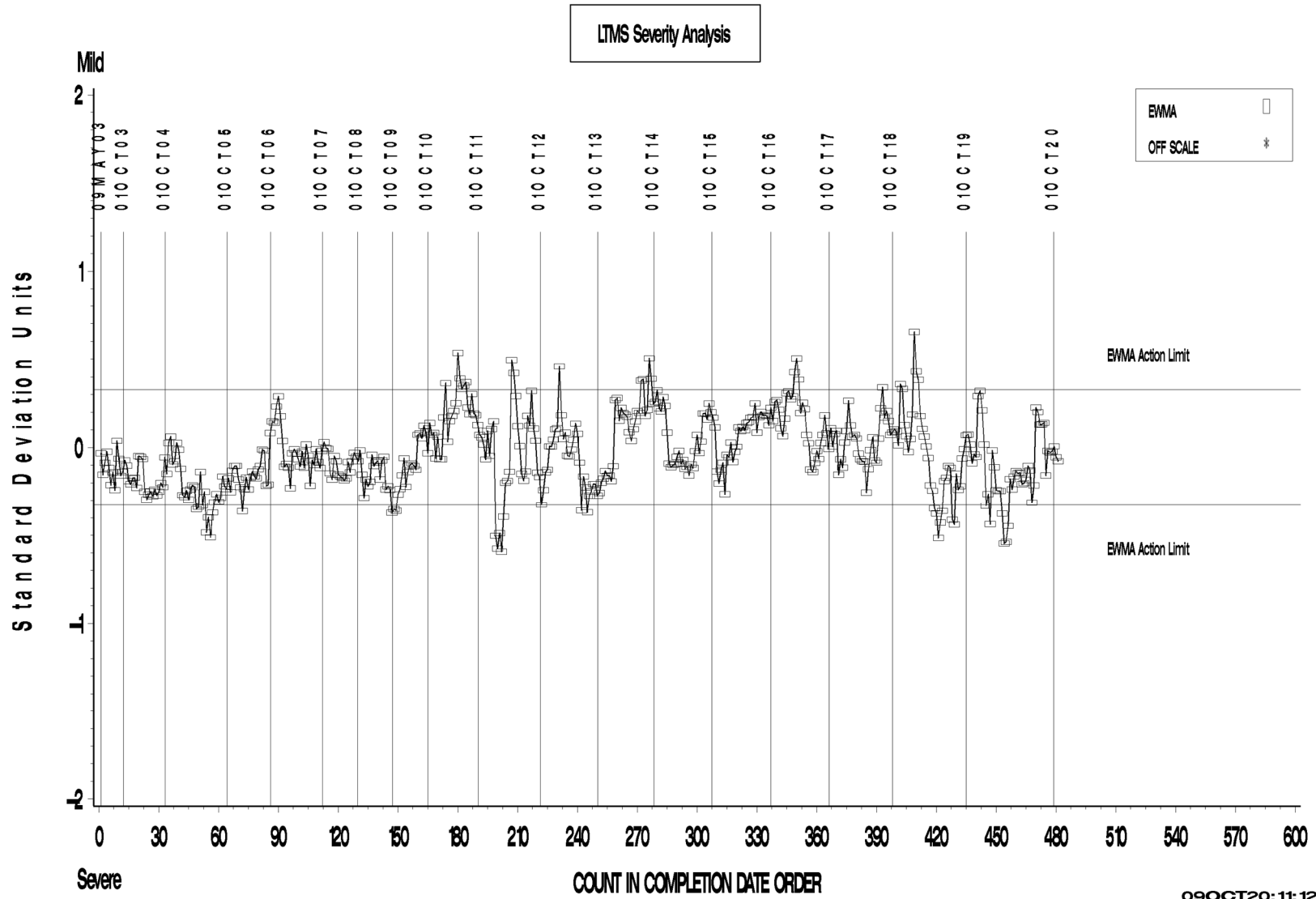
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

WEAR



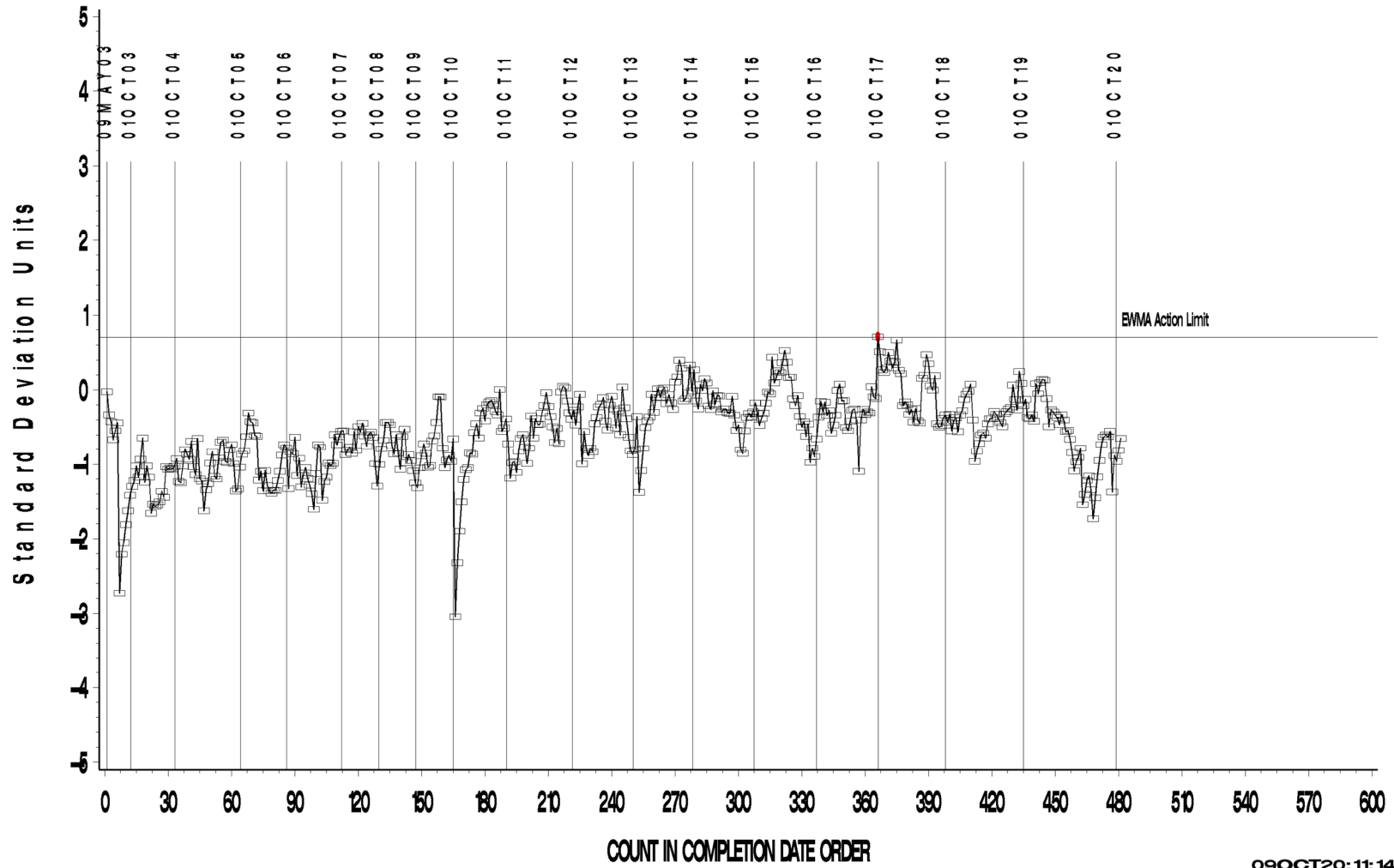
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIDGING

LTMS Precision Analysis



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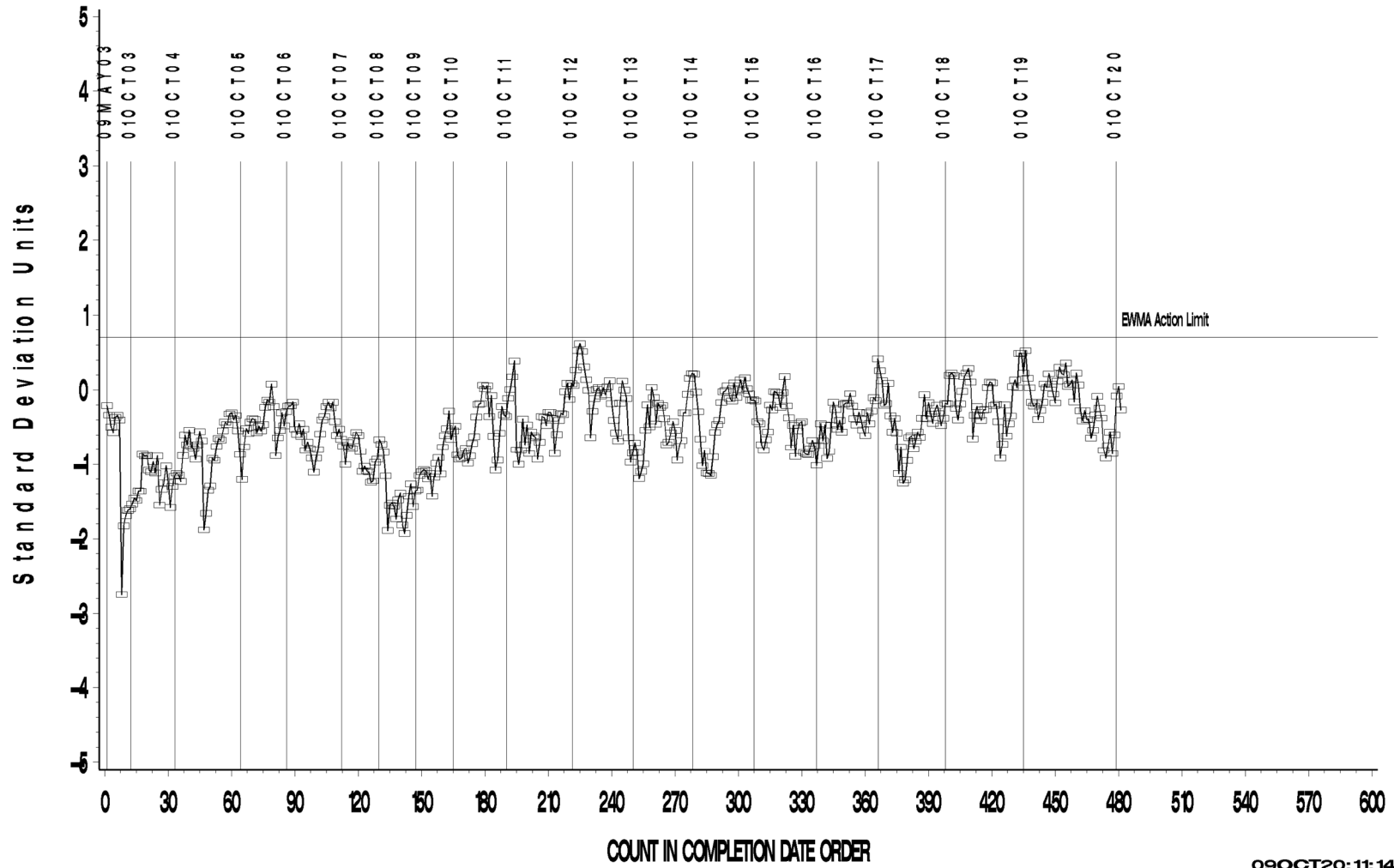
A Program of ASTM International

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L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

## RIPPLING

LTMS Precision Analysis



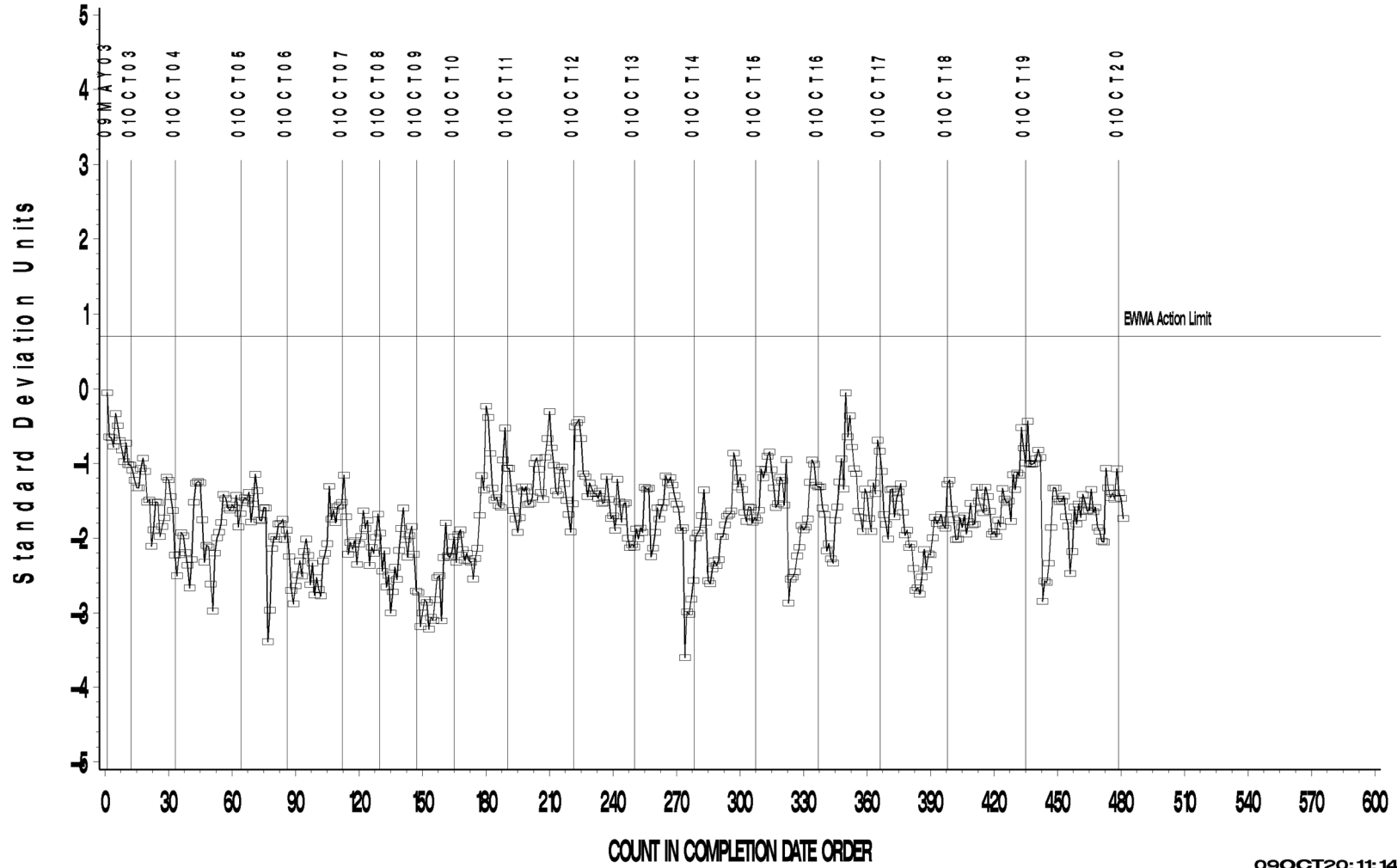
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

LTMS Precision Analysis



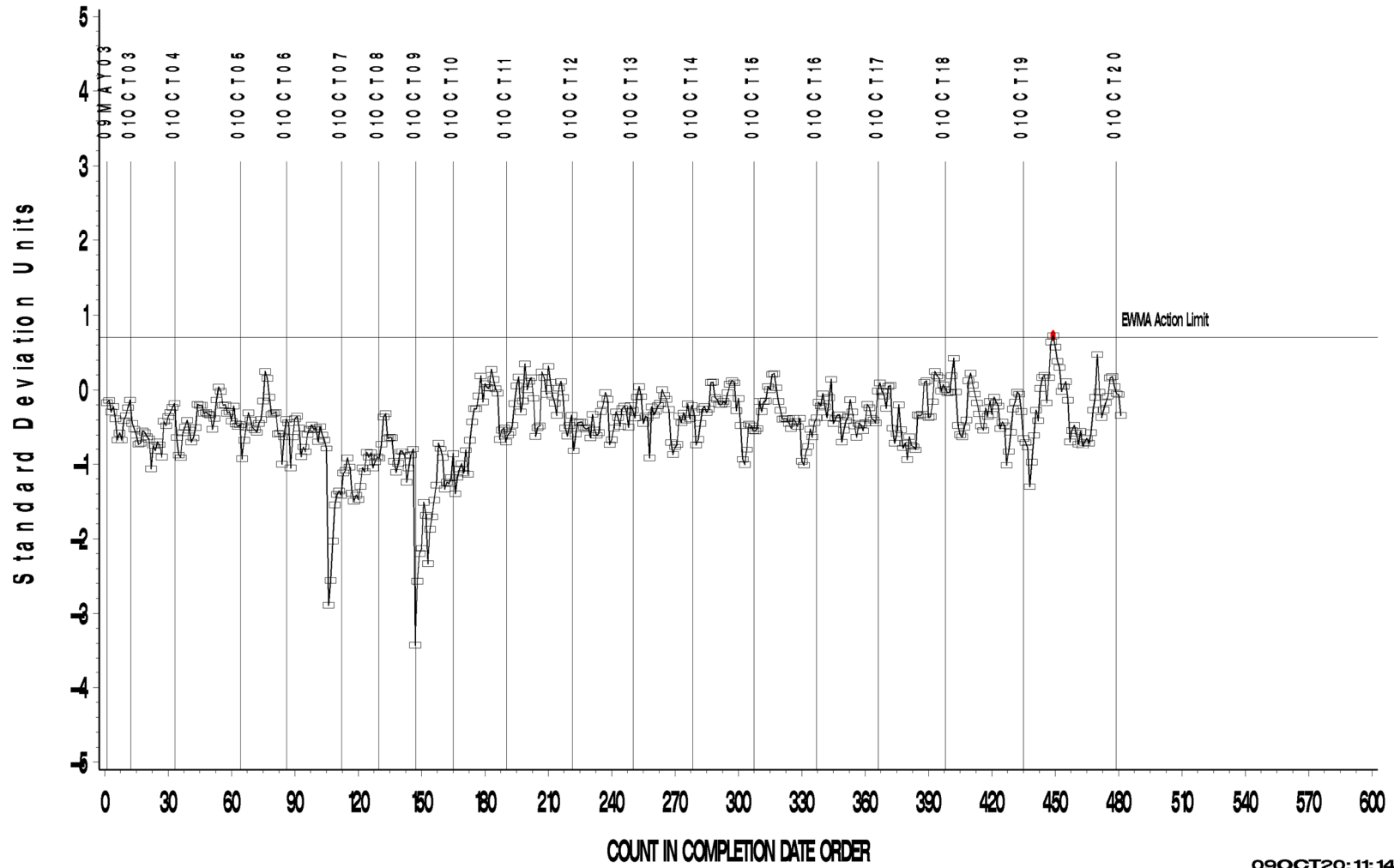
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

WEAR

LTMS Precision Analysis



09OCT20:11:14

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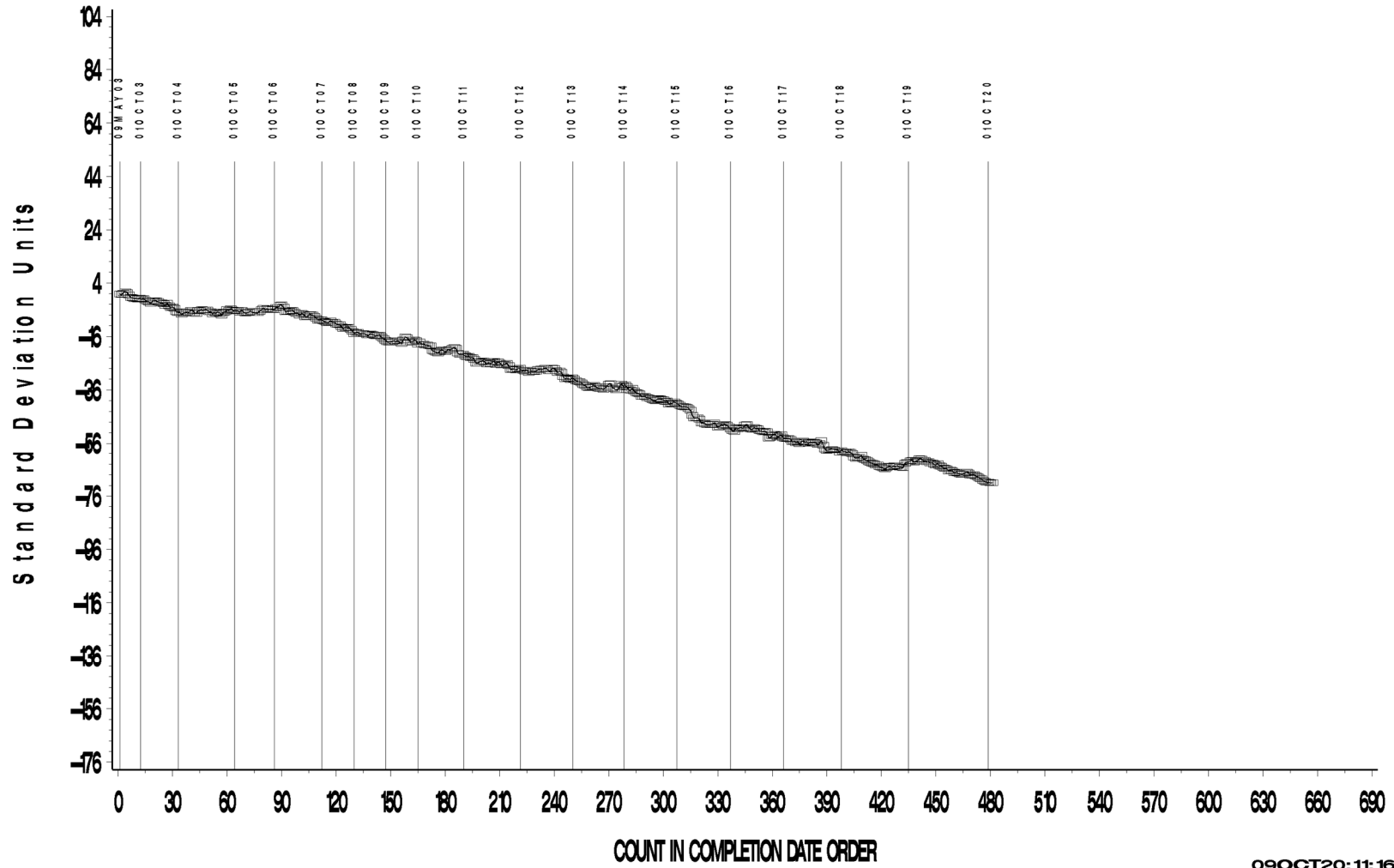
A Program of ASTM International

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

## RIDGING

CUSUM Severity Analysis



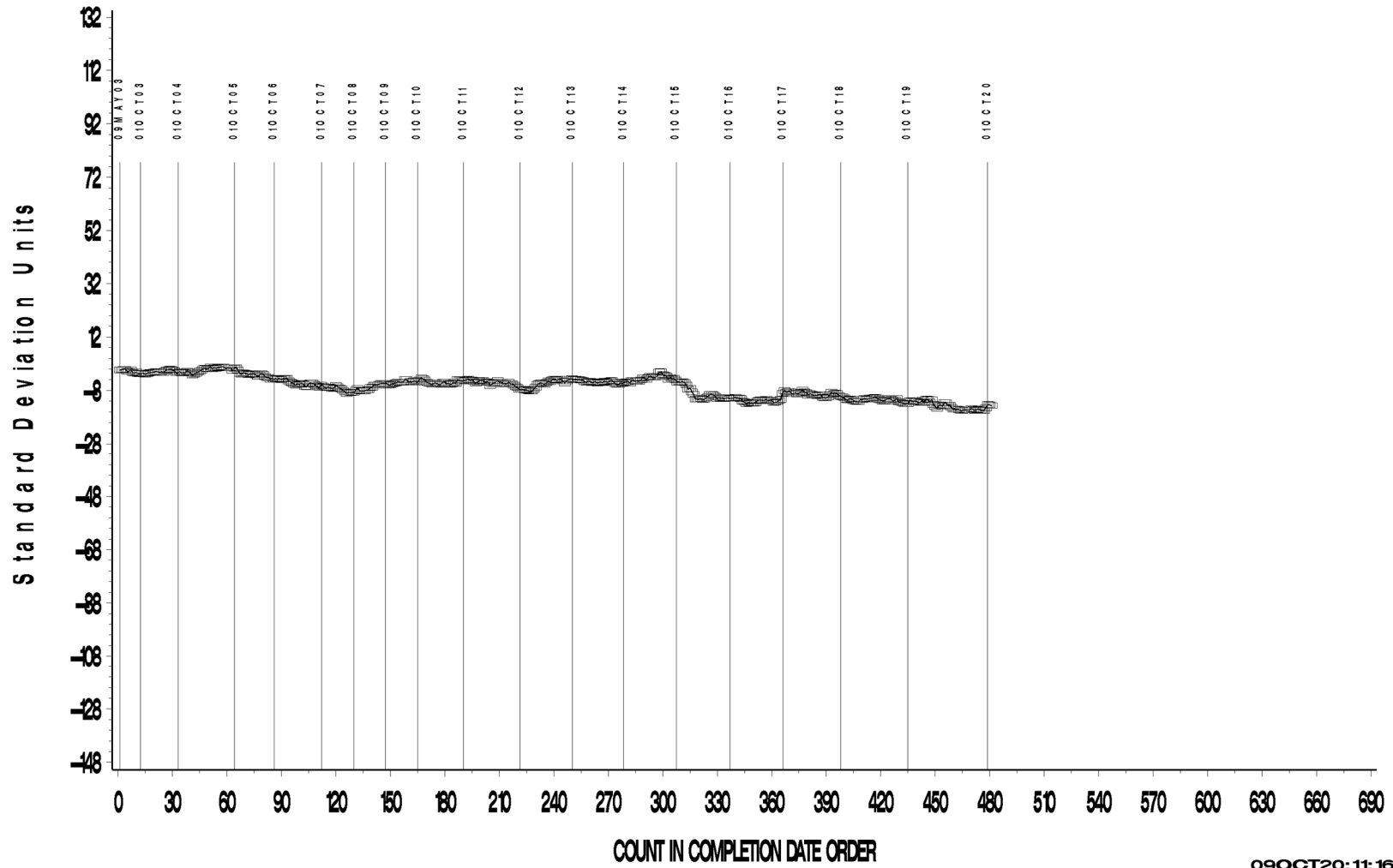
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

## RIPPLING

CUSUM Severity Analysis



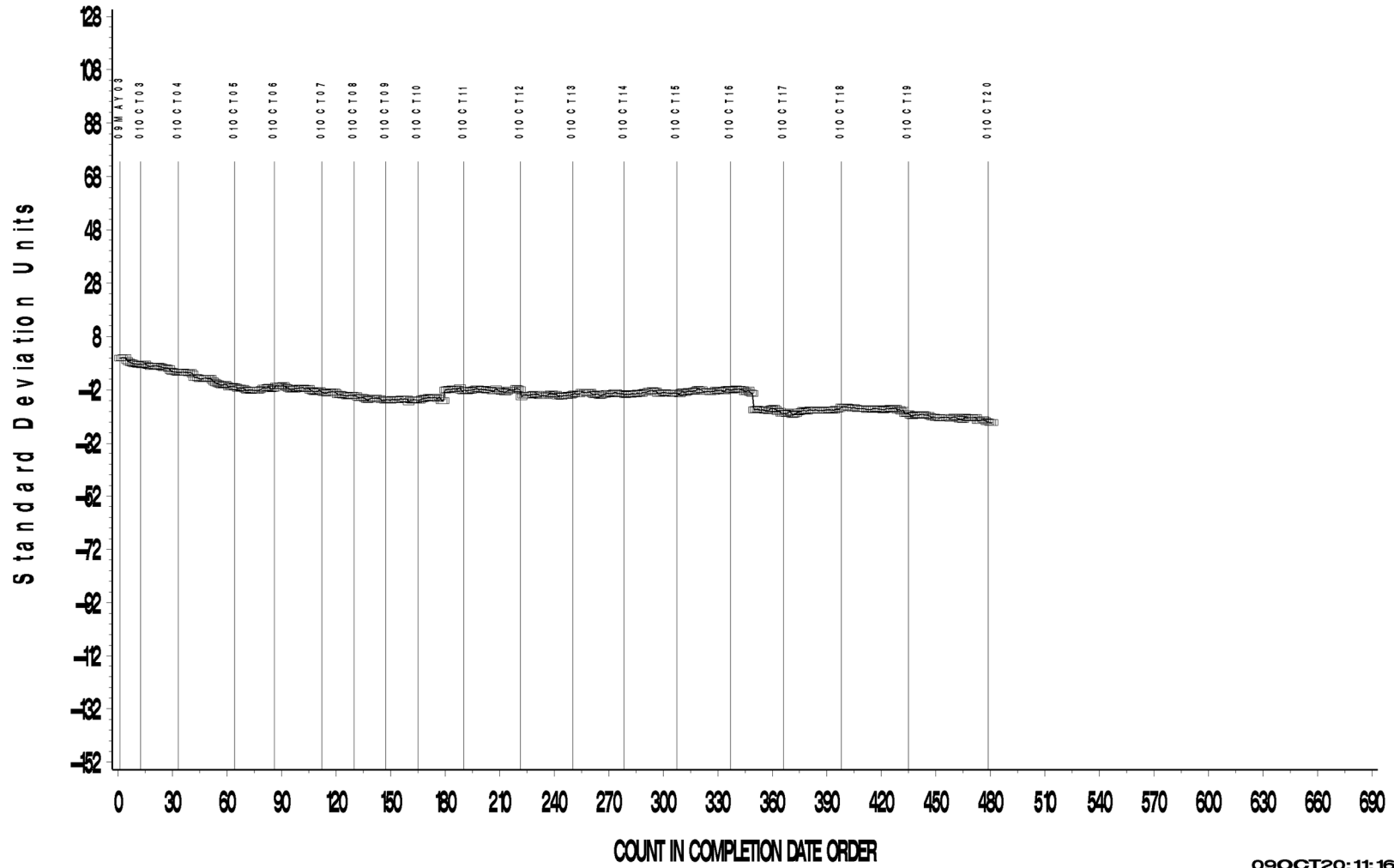
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

CUSUM Severity Analysis



09OCT20:11:16



# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

WEAR

CUSUM Severity Analysis



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