



## Test Monitoring Center

@ Carnegie Mellon University  
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<http://astmtmc.cmu.edu>  
412-365-1000

MEMORANDUM: 17-020  
DATE: May 25, 2017  
TO: Wes Venhoff, Chairman, L-37 Surveillance Panel  
FROM: Scott Parke   
SUBJECT: L-37 Rater Calibration from October 1, 2016 through March 31, 2017

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

SDP/sdp/mem17-020.sdp.doc

cc: Frank Farber

Jeff Clark

L-37 Surveillance Panel

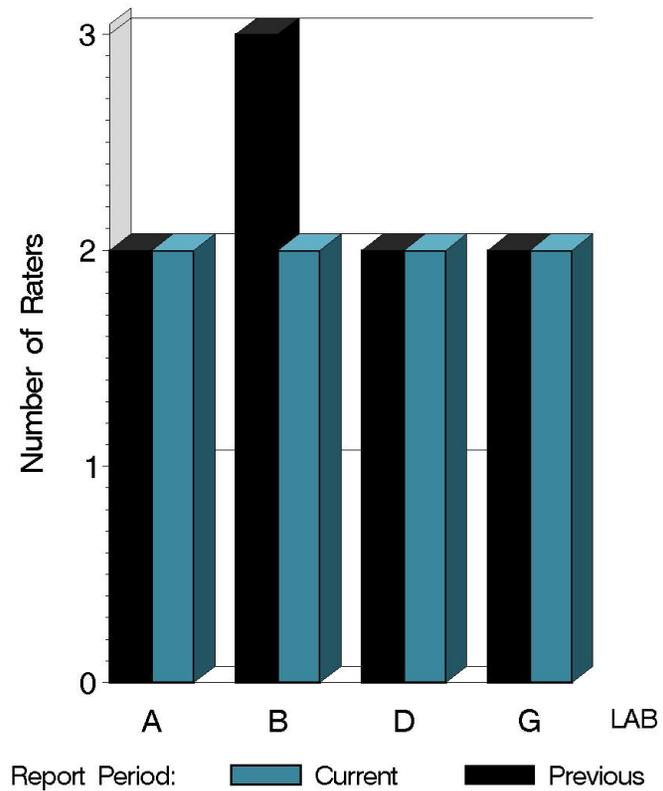
<ftp://ftp.astmtmc.cmu.edu/docs/gear/l37rc/semiannualreports/l37rc-04-2017.pdf>

Distribution: email

# L-37 Rater Calibration

	Reporting Data	Calibrated on 3-31-17
Number of Labs	4	4
Number of Raters	8	8

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	11	10
Rejected (Mild)	OC	0	3
Rejected (Severe)	OC	1	3
Rejected (Multiple)	OC	0	0
Rejected (Precision)	OC	0	1
Workshop data	AG	15	24
Total		27	41

# L-37 Rater Calibration

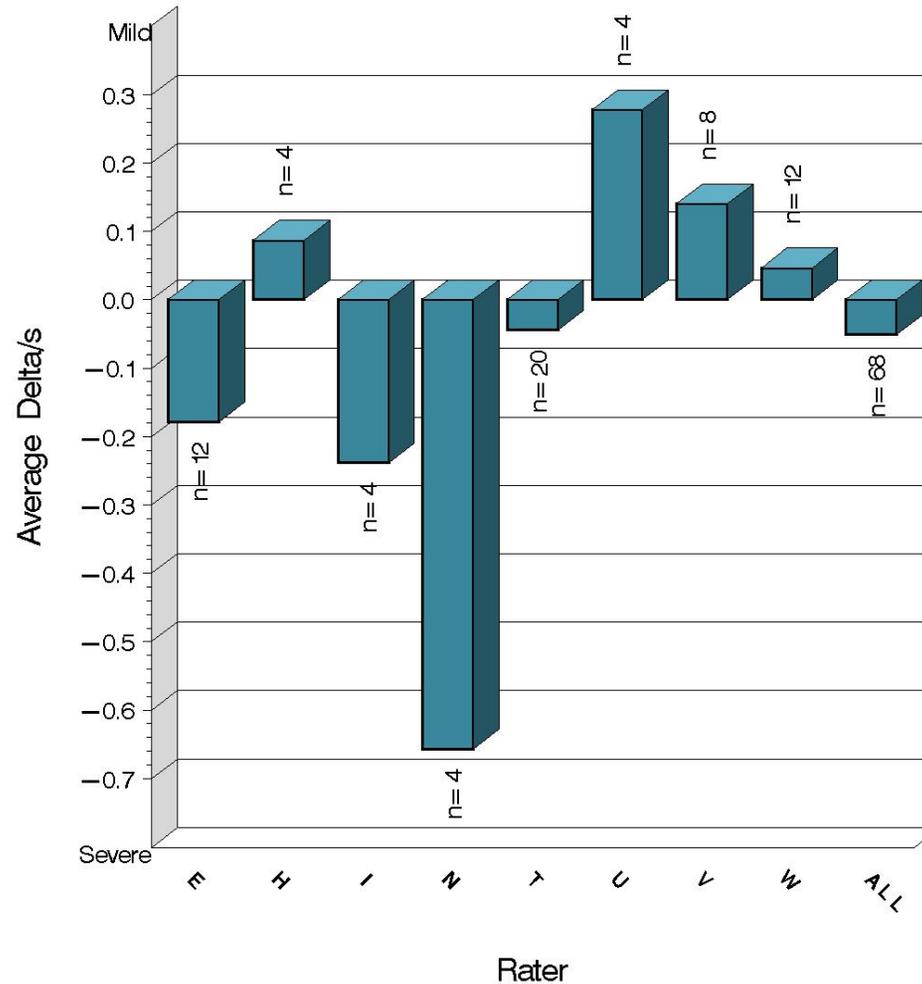
Rater	N	RIDG		RIPP		SPIT		WEAR	
		Avg Yi	STD*						
E	12	-0.178	1.269	0.303	0.995	-1.876	6.138	0.115	0.937
H	4	0.087	0.827	-0.217	0.675	-0.269	0.185	-0.117	1.328
I	4	-0.238	1.166	-0.106	1.187	0.332	0.221	0.687	0.685
N	4	-0.657	1.228	0.138	0.982	-0.096	0.444	-0.150	1.147
T	20	-0.044	0.853	-0.233	1.011	-0.370	0.745	0.535	0.838
U	4	0.278	0.911	-0.636	0.611	0.212	0.544	0.370	0.787
V	8	0.141	0.779	0.101	0.406	-0.027	0.308	-0.116	0.528
W	12	0.047	1.191	0.127	0.816	-0.064	0.258	0.264	0.929
ALL	68	-0.051	1.002	-0.029	0.887	-0.444	2.622	0.257	0.880

\* 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

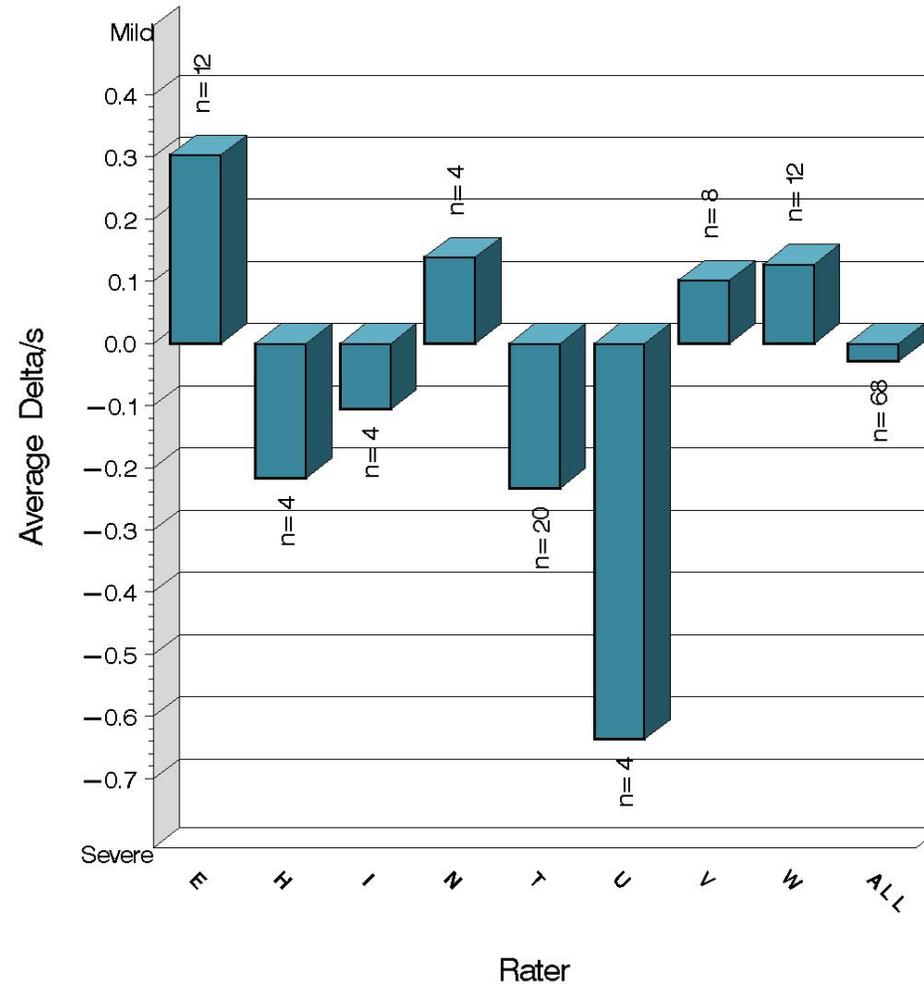


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# L-37 Rater Calibration

## RIPPLING

Severity as Measured by Delta/s

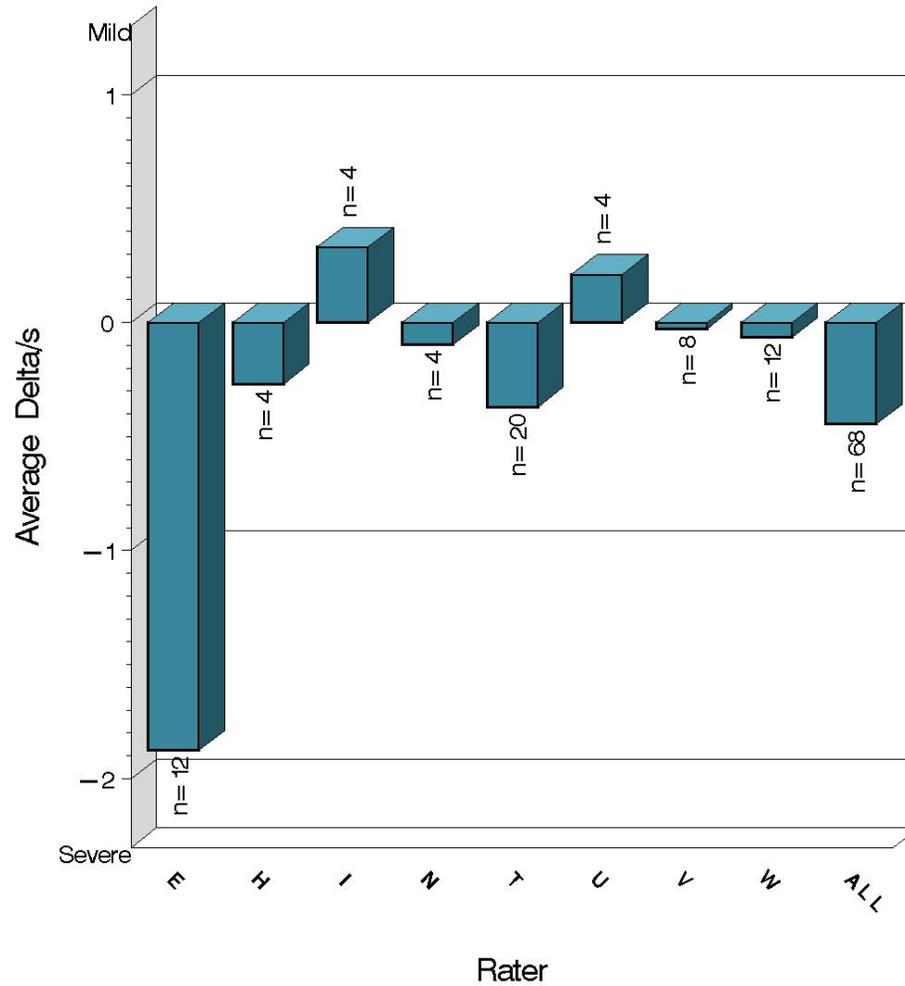


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# L-37 Rater Calibration

## SPITTING

Severity as Measured by Delta/s

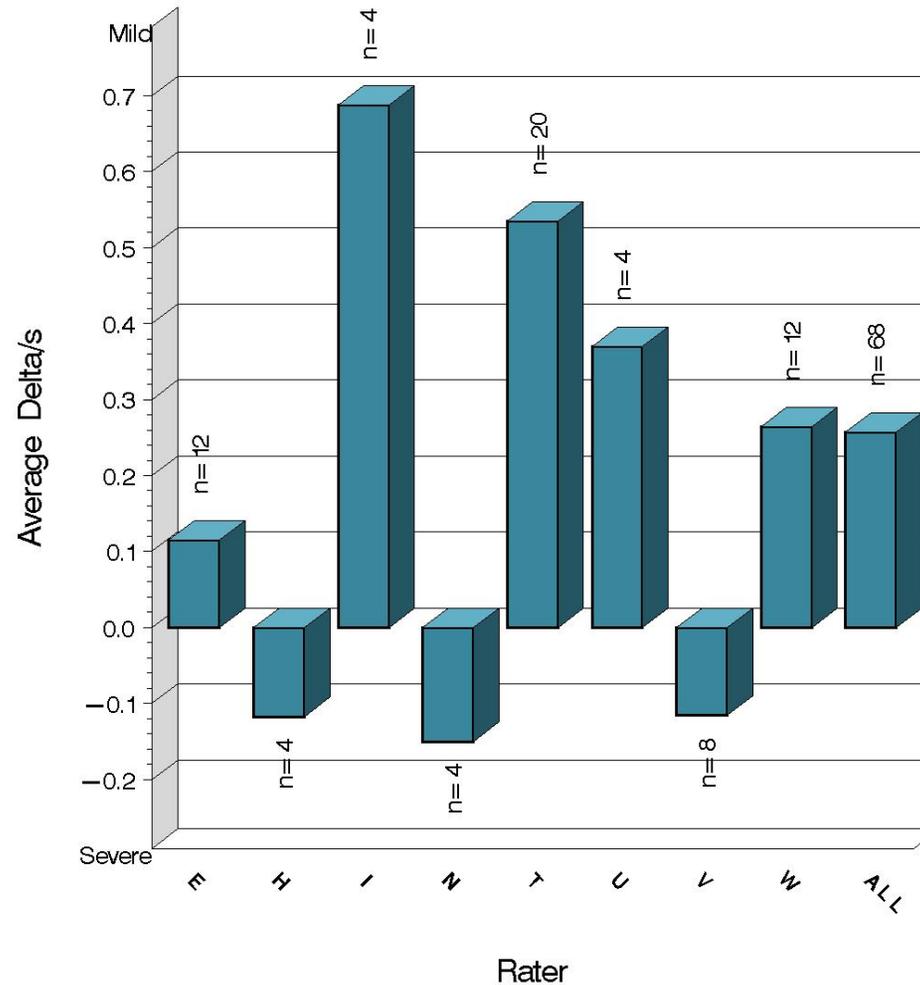


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# L-37 Rater Calibration

## WEAR

Severity as Measured by Delta/s

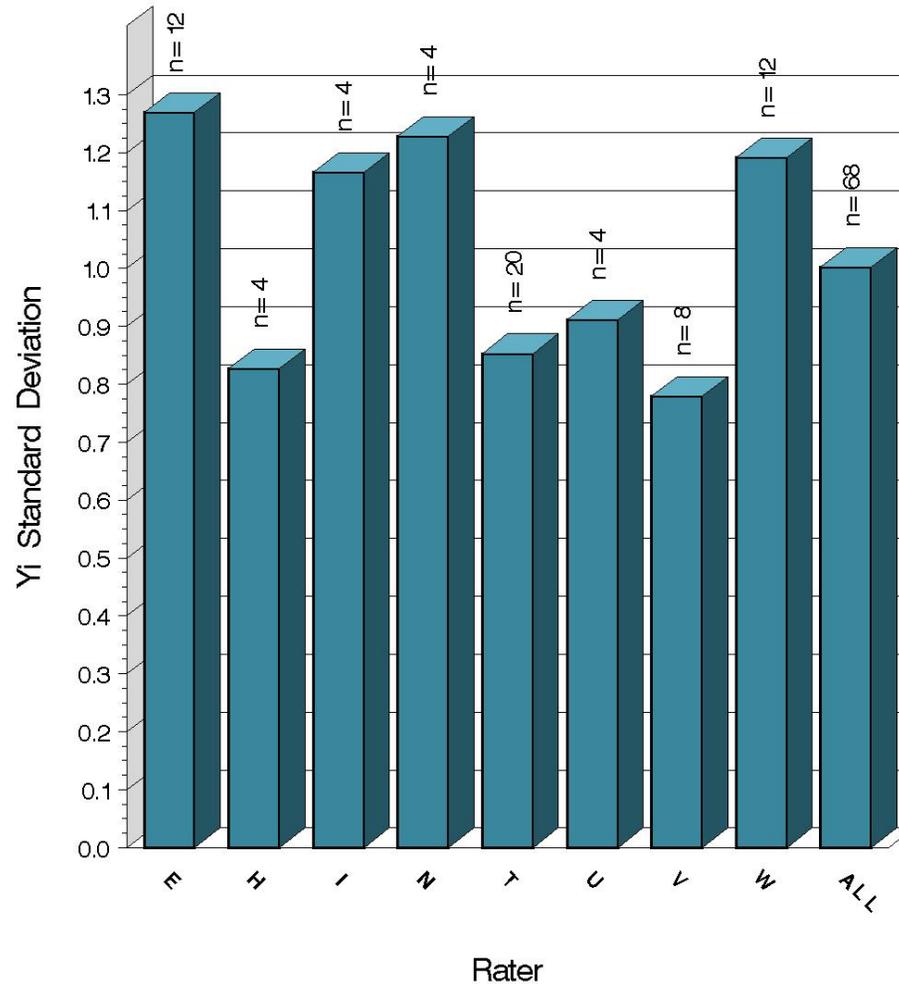


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# L-37 Rater Calibration

## RIDGING

Precision as Measured by Yi STD

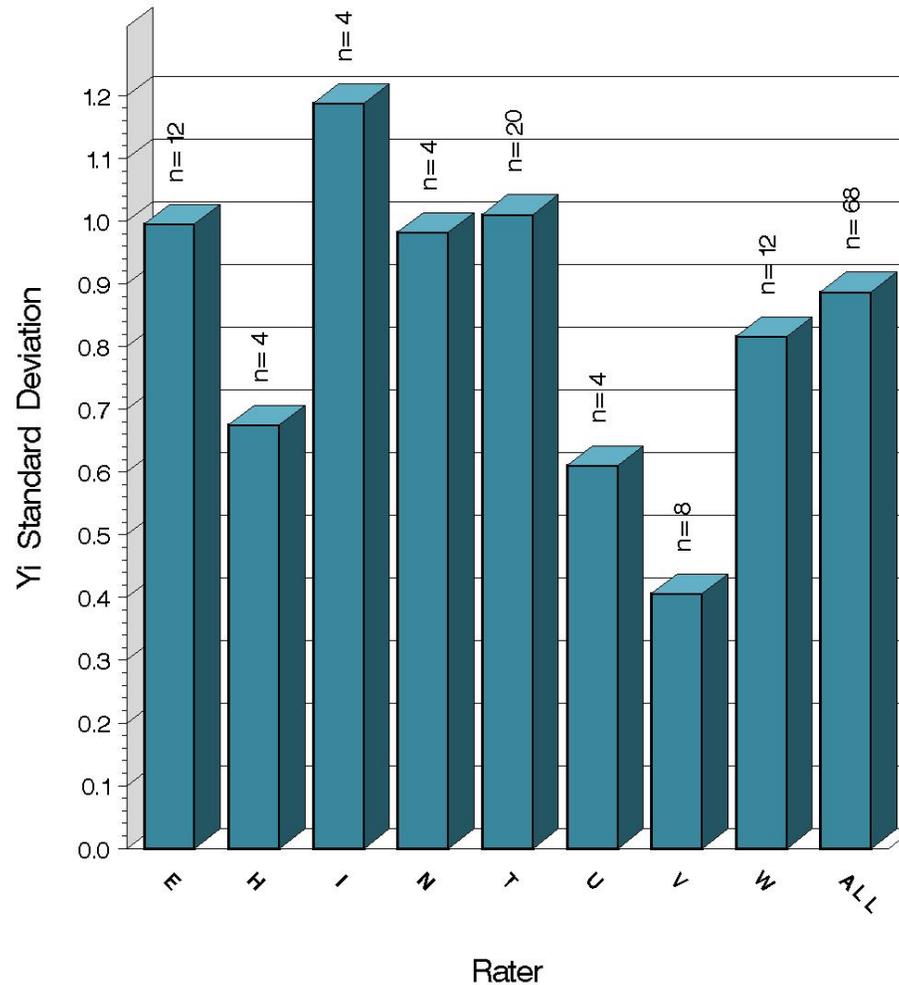


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# L-37 Rater Calibration

## RIPPLING

Precision as Measured by Yi STD

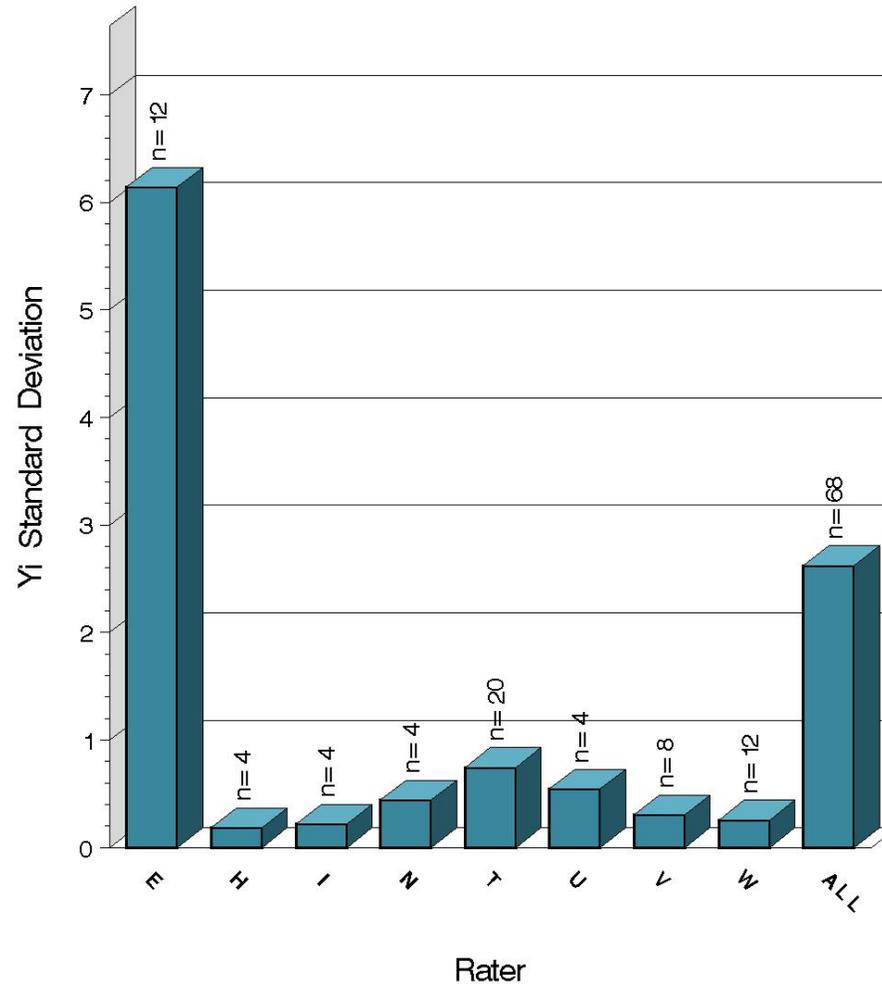


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# L-37 Rater Calibration

## SPITTING

Precision as Measured by Yi STD

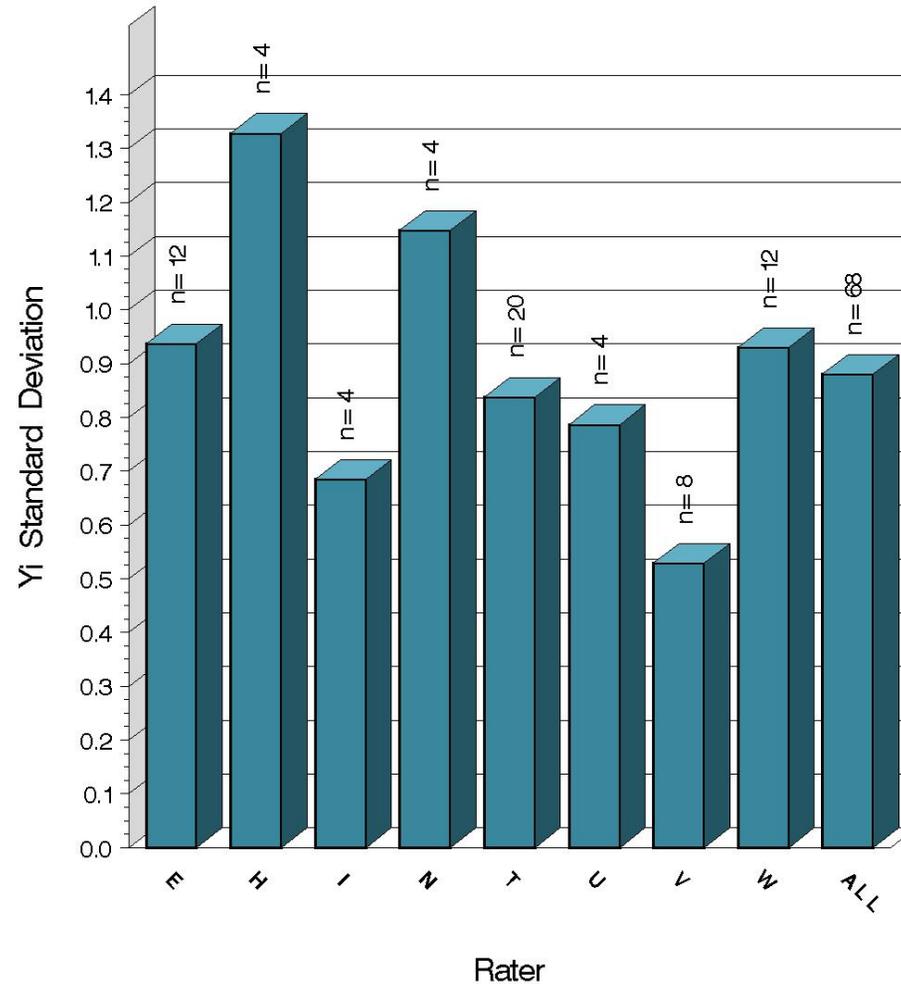


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# L-37 Rater Calibration

## WEAR

Precision as Measured by Yi STD



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# L-37 Rater Calibration

## SUMMARY OF SEVERITY & PRECISION

### Severity

Industry rater severity for WEAR, RIPP, RIDG, and SPIT are all currently within limits. SPIT exceeded the action limit for several tests due to a single very severe result. RIDG results for the past year have been closer to target than they generally had been in the ten years prior to that. WEAR results have been mild for the last year.

### Precision

Industry precision for all parameters remained within limits throughout the period.

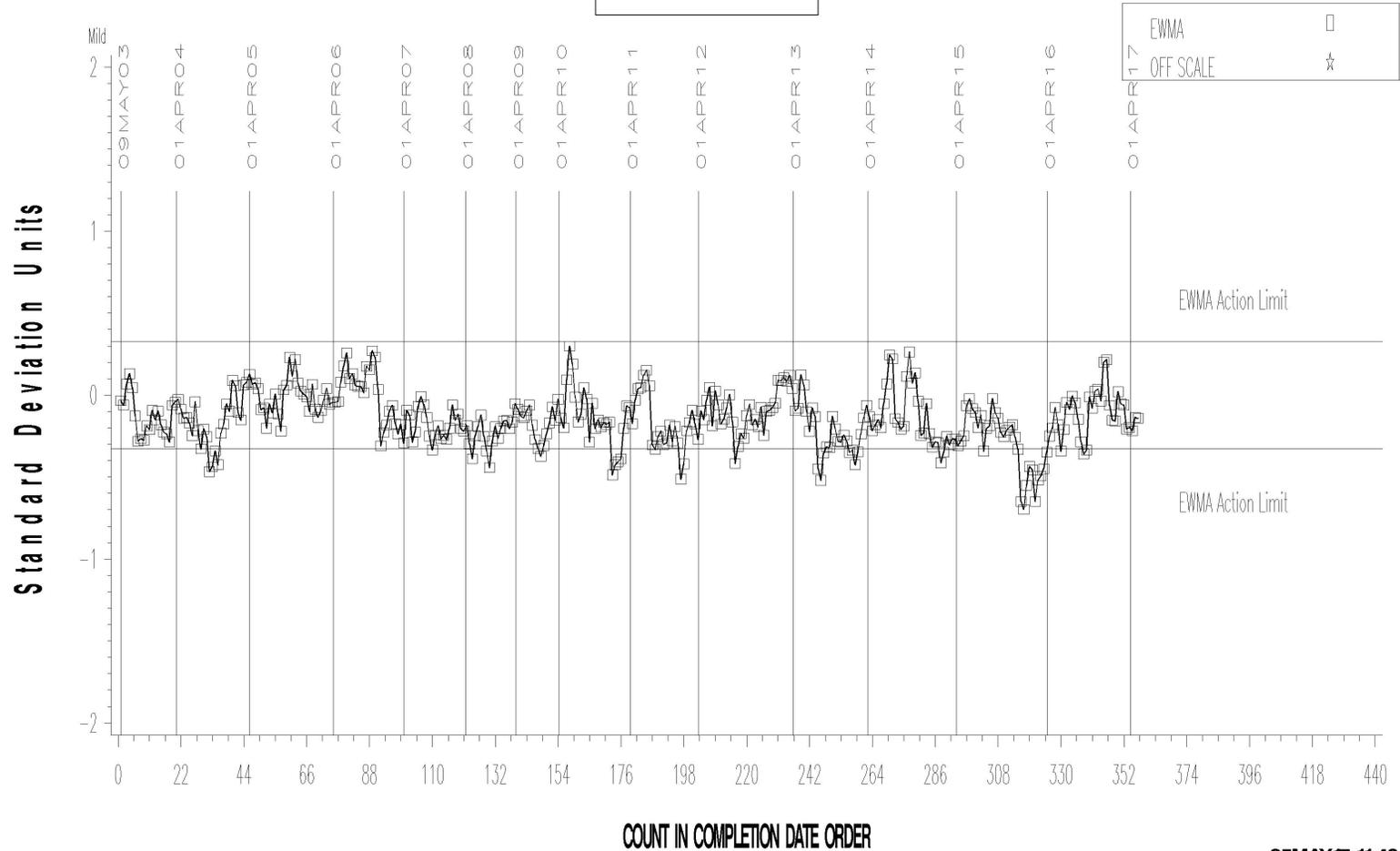
Industry rater control charts follow.

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIDGING

LTMS Severity Analysis

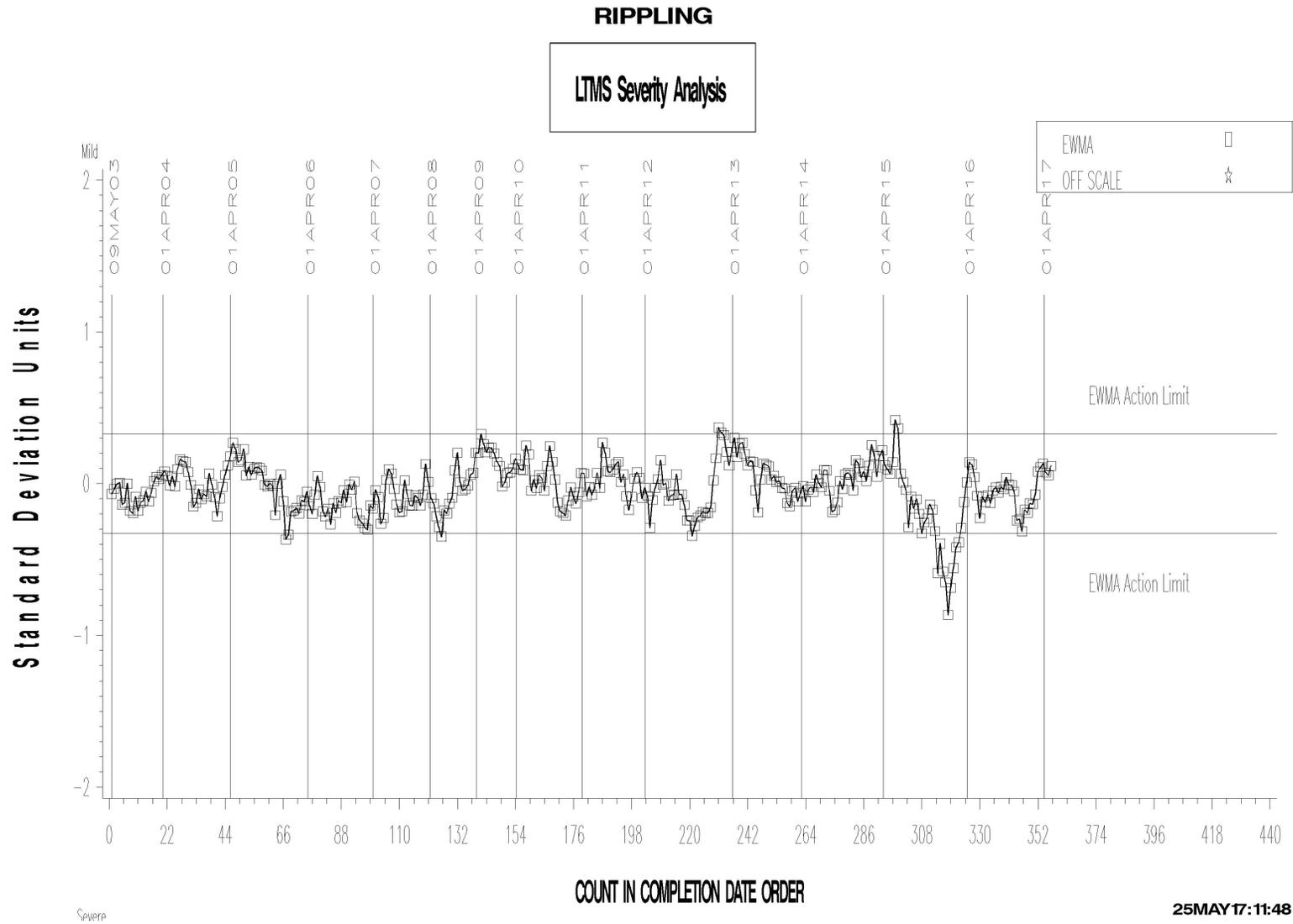


Severe

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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

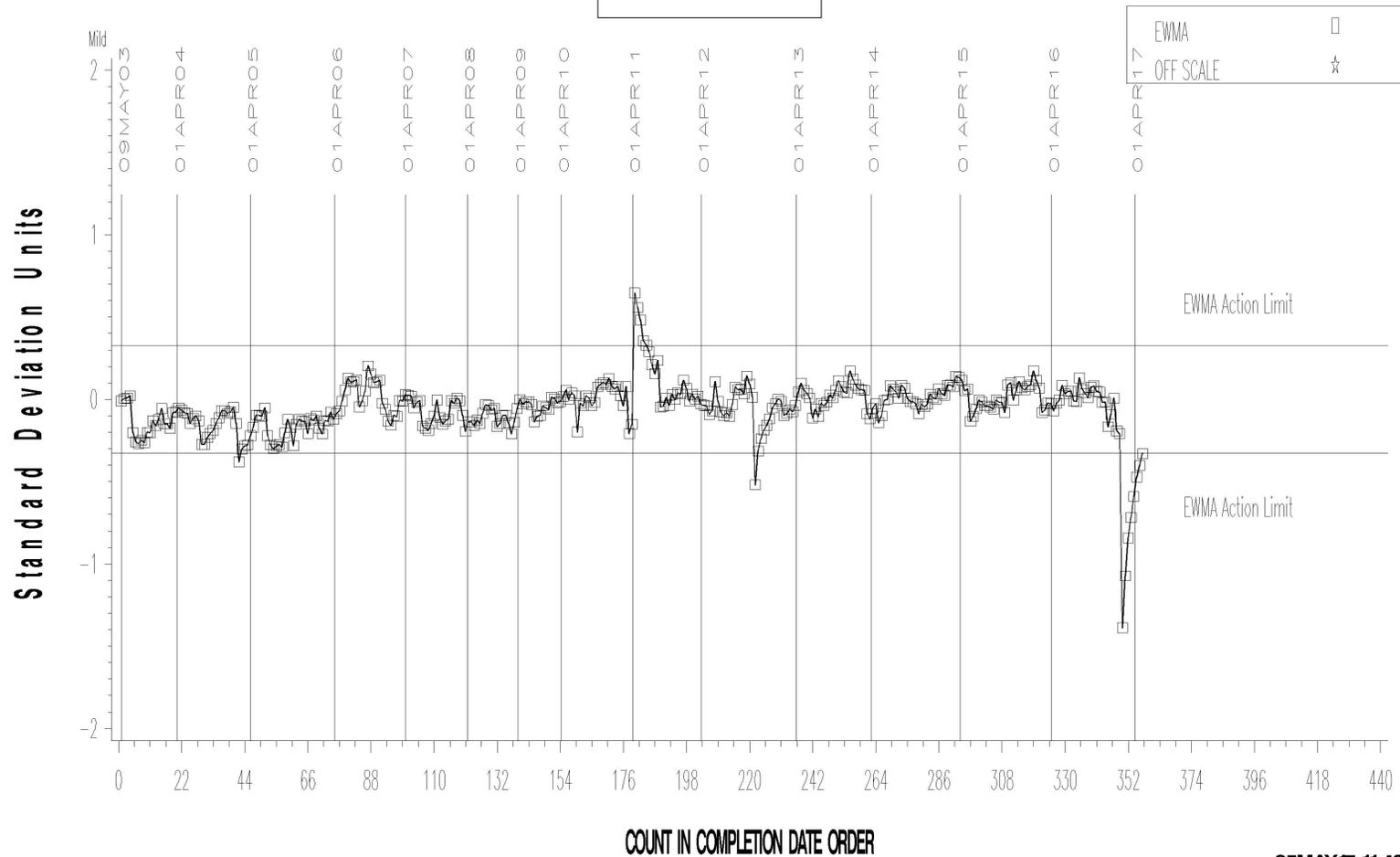


# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

## SPITTING

LTMS Severity Analysis

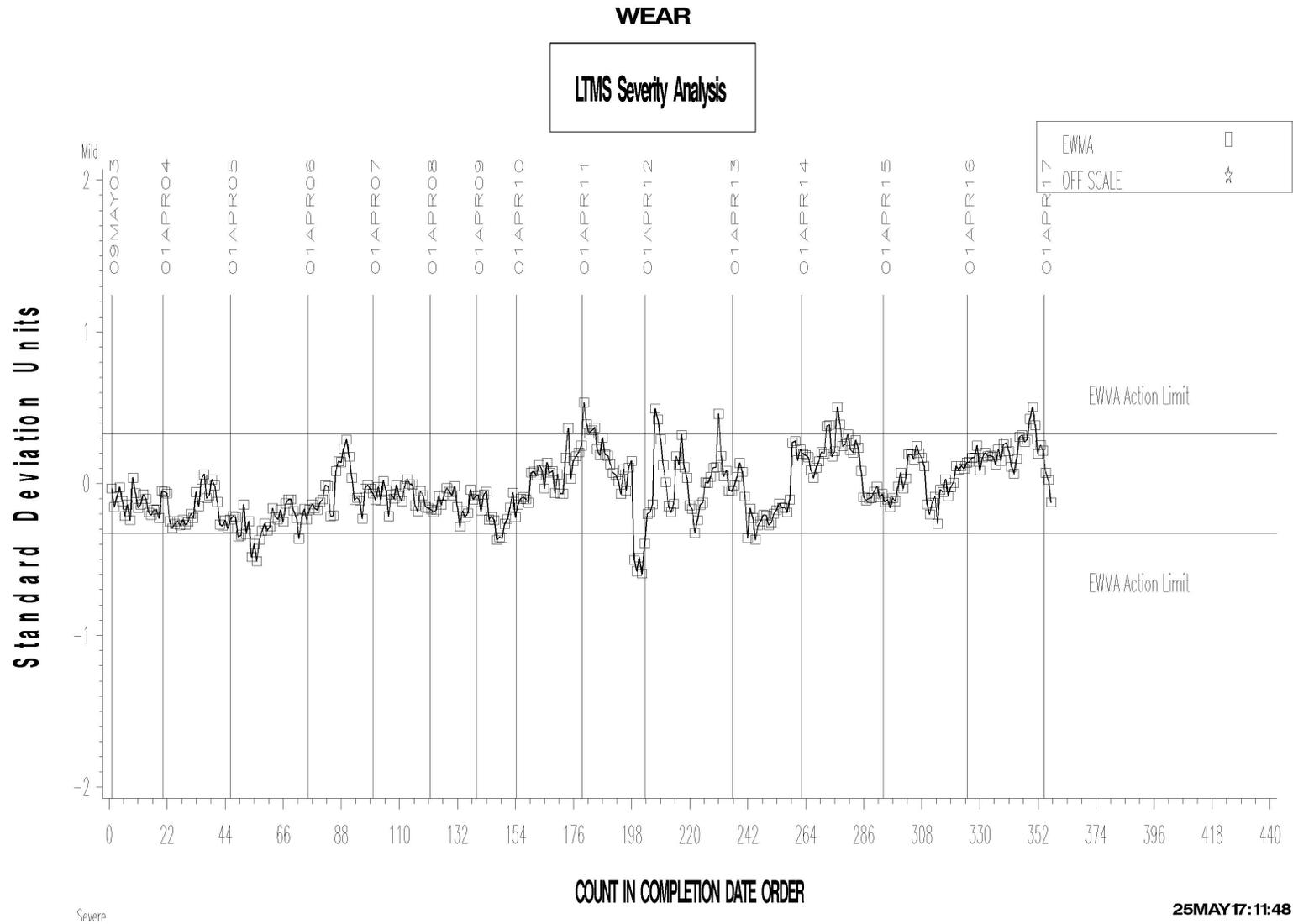


Severe

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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

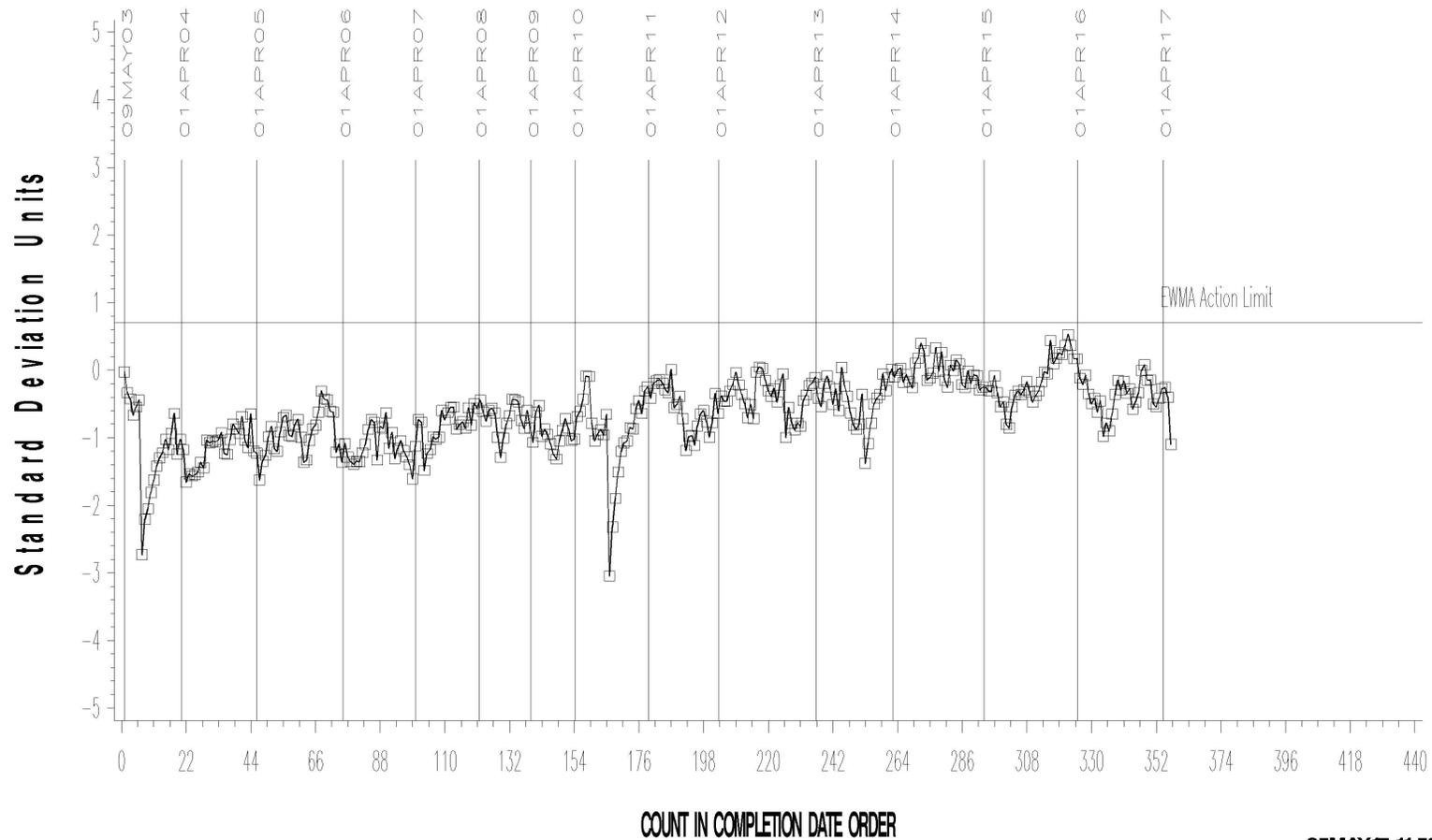


# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIDGING

LTMS Precision Analysis



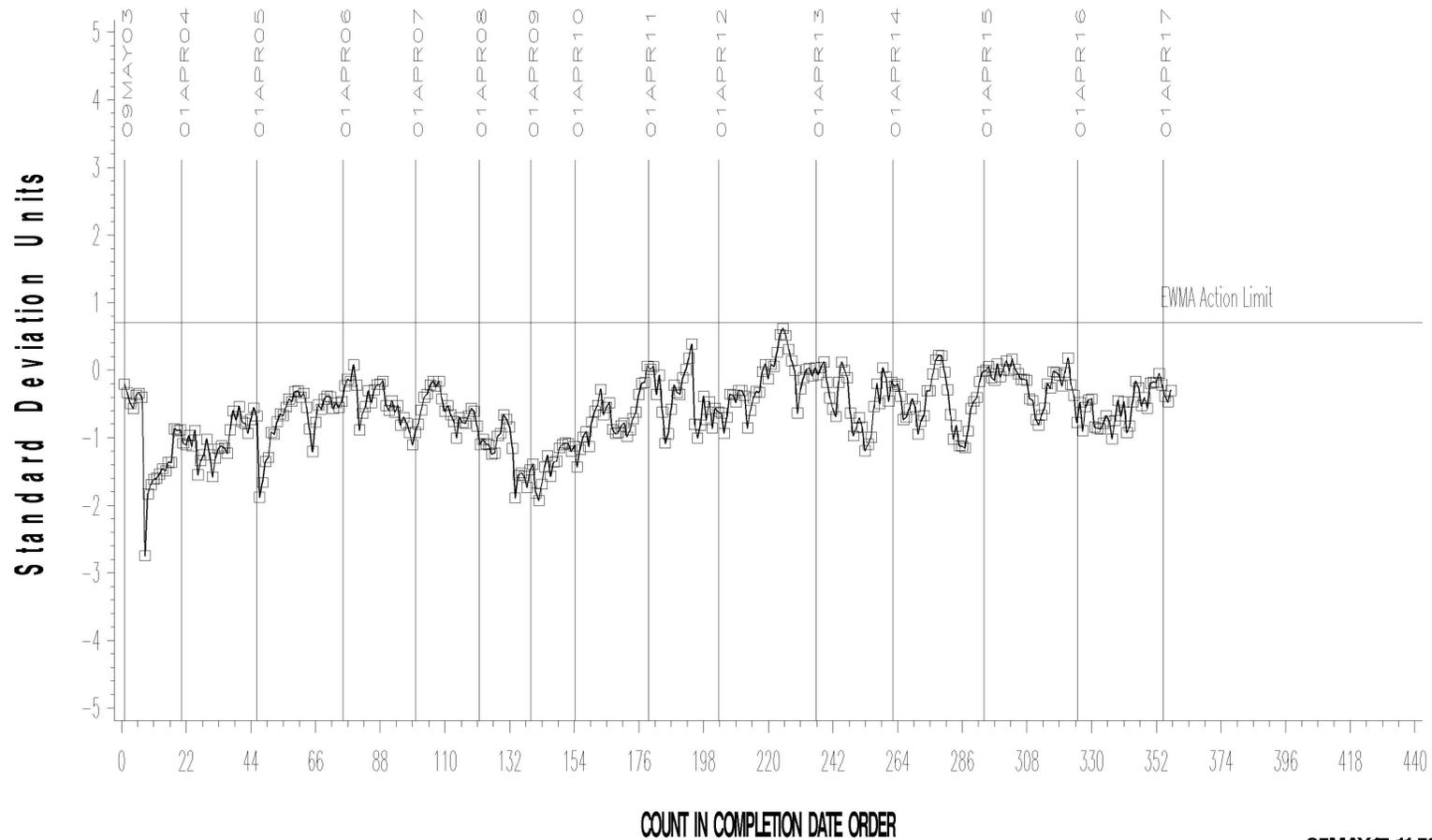
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIPPLING

LTMS Precision Analysis



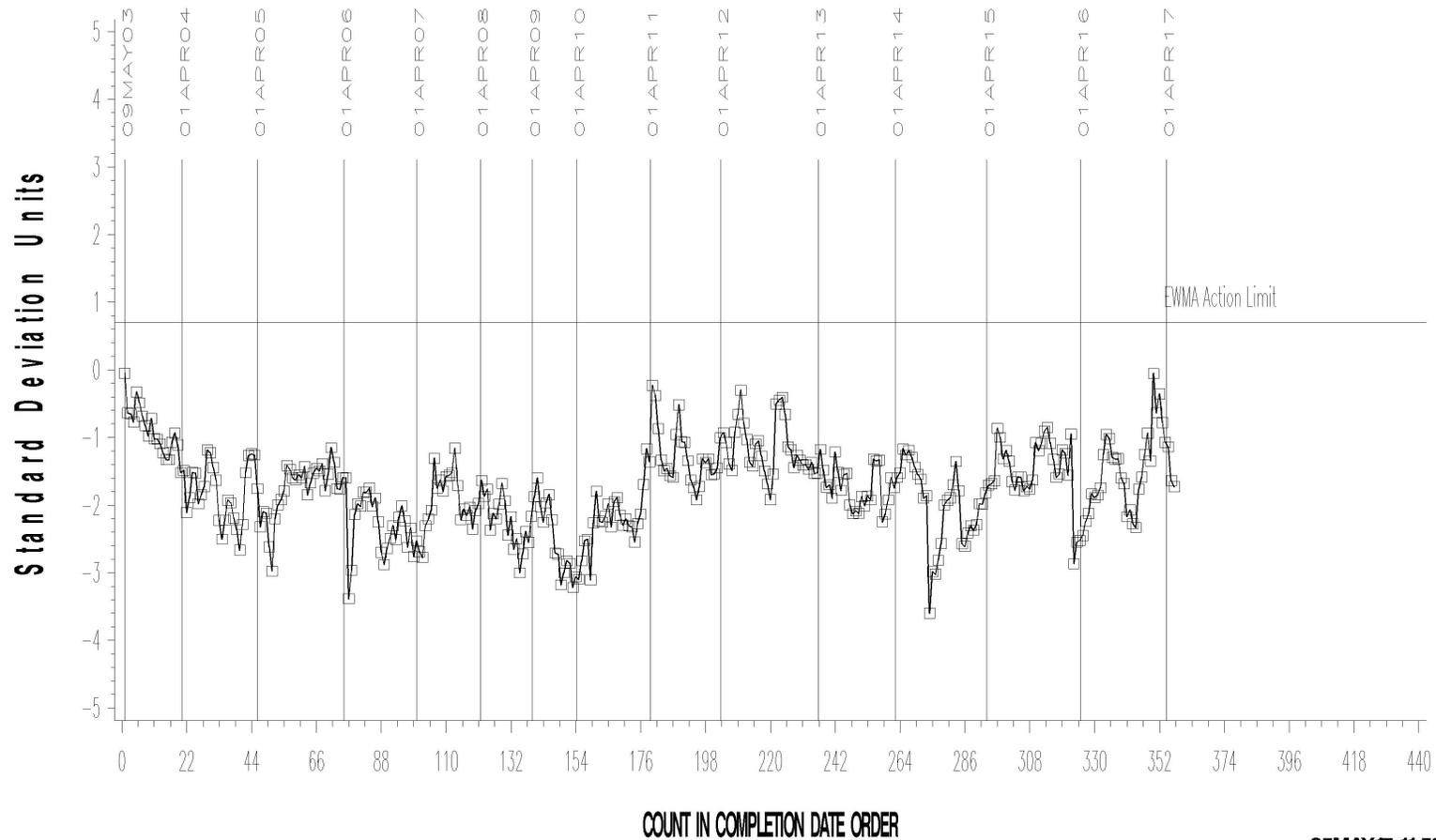
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

LTMS Precision Analysis



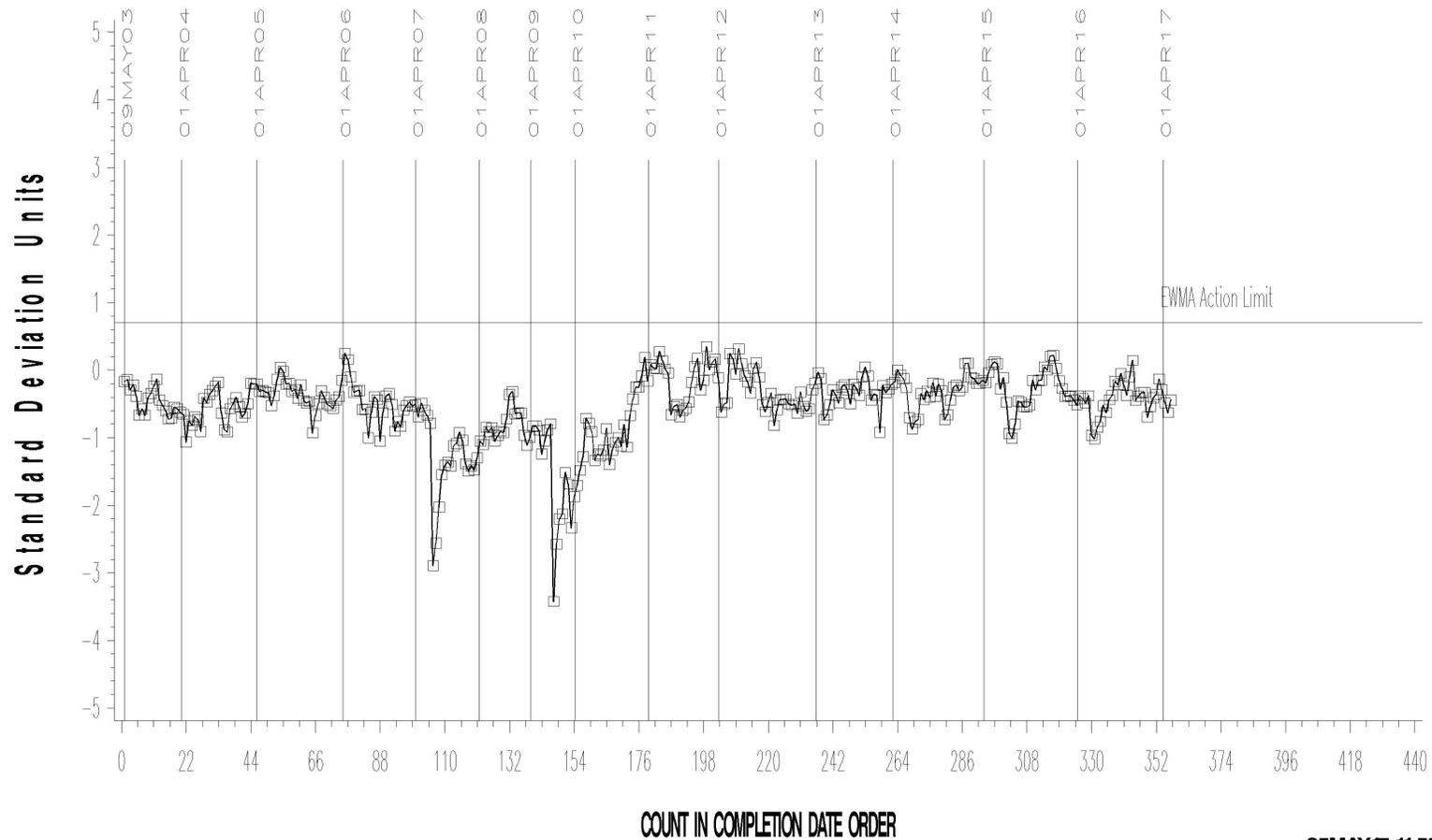
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

WEAR

LTMS Precision Analysis



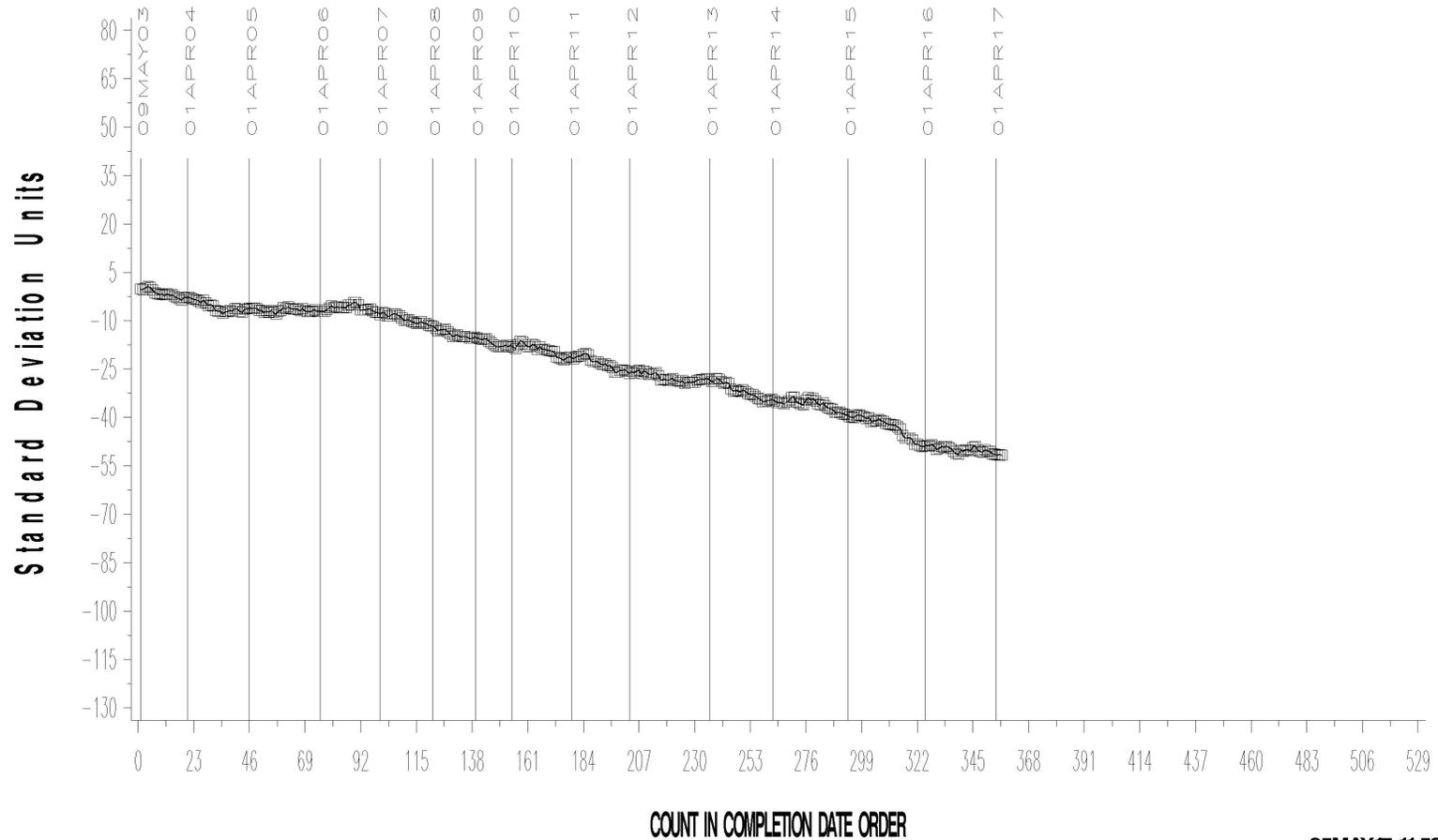
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIDGING

CUSUM Severity Analysis



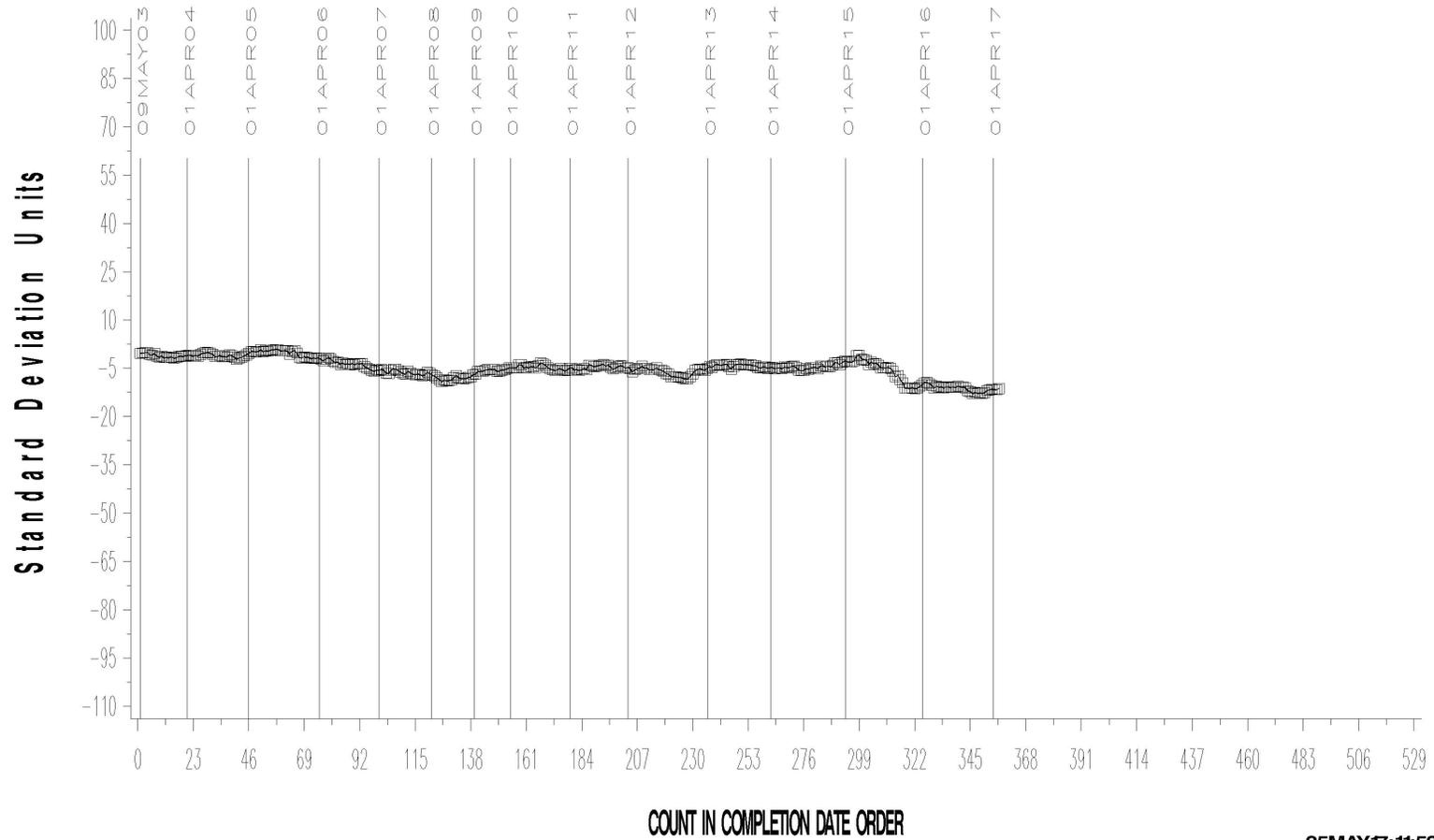
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIPPLING

CUSUM Severity Analysis



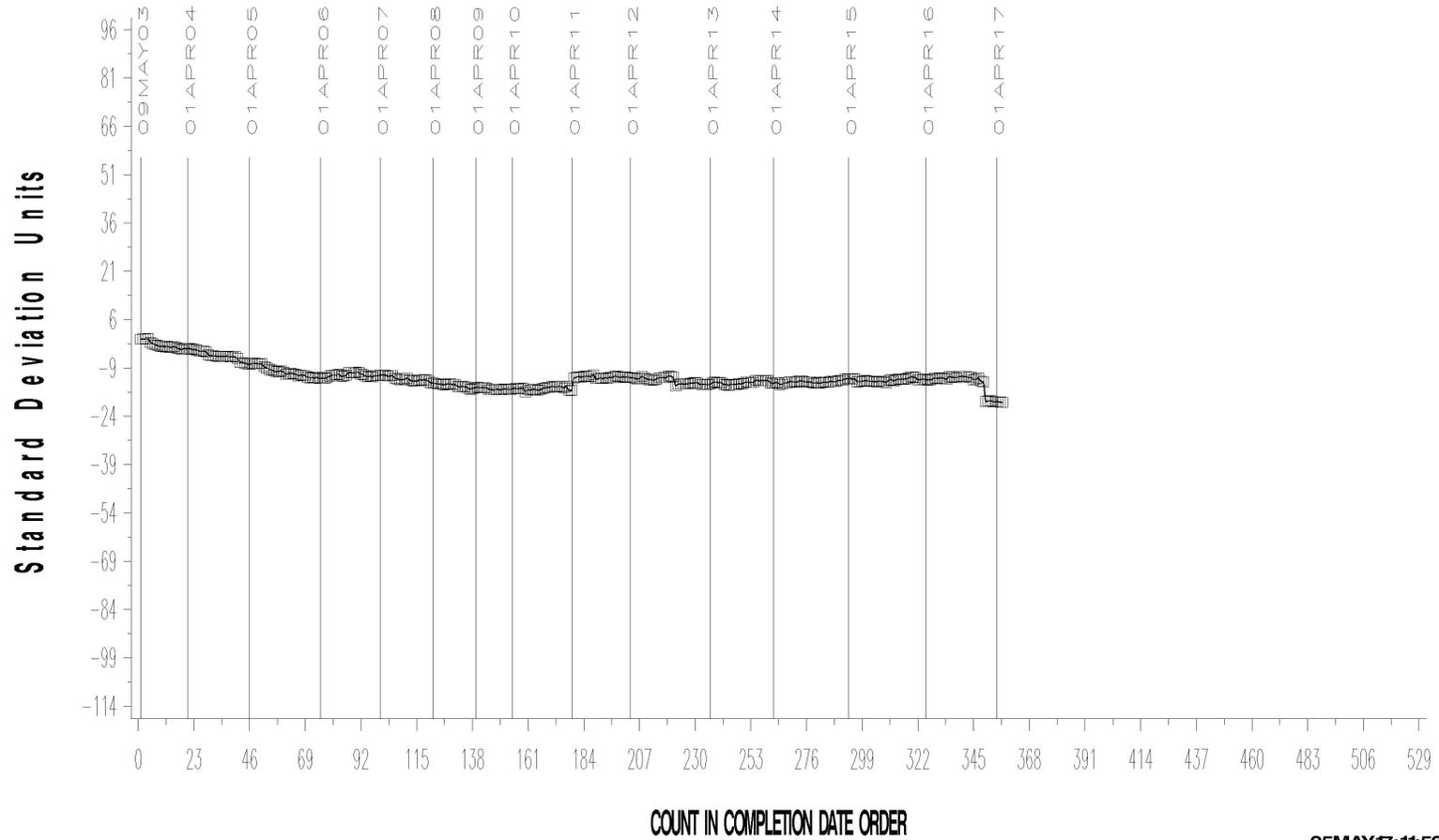
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

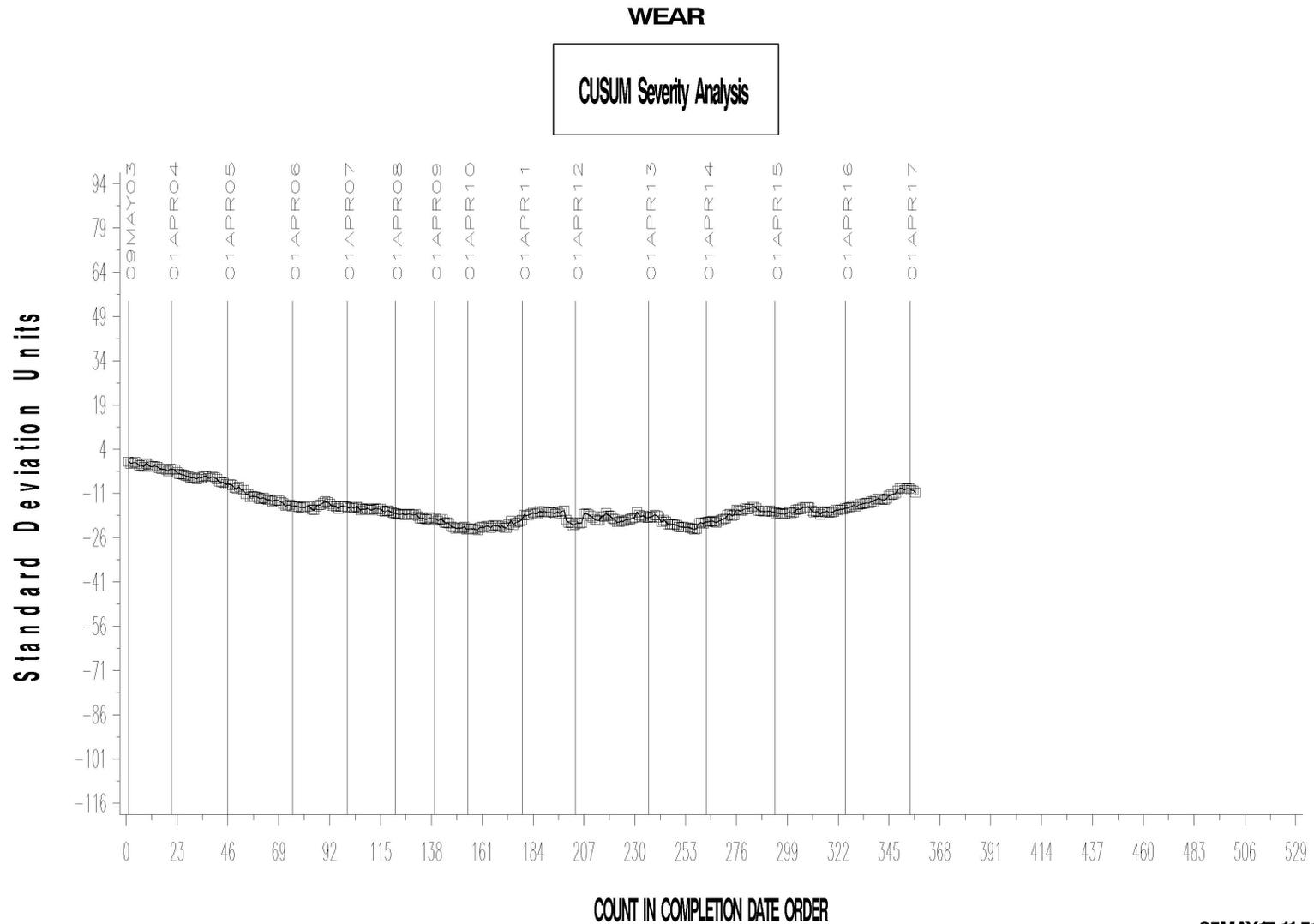
CUSUM Severity Analysis



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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA



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