



## Test Monitoring Center

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

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

MEMORANDUM: 16-037

DATE: November 3, 2016

TO: Leonard Orzech,  
Chairman, Ball Rust Test Surveillance Panel

FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*

SUBJECT: BRT Testing from April 1, 2016 through September 30, 2016

A total of 165 BRT tests were reported to the Test Monitoring Center during the report period from April 1, 2016 through September 30, 2016.

Please find attached a summary of testing activity this period.

MTK/mtk/astm1016.doc/mem16-037.mtk.doc

cc: F. M. Farber

J. A. Clark

BRT Surveillance Panel

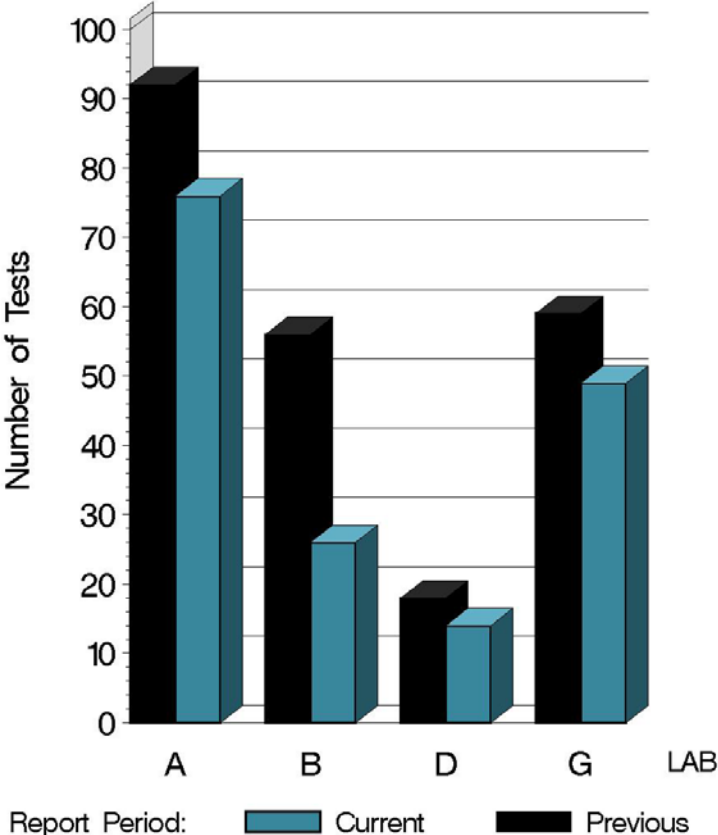
<ftp://ftp.astmtmc.cmu.edu/docs/bench/brt/semiannualreports/brt-10-2016.pdf>

Distribution: email

# BRT (D 6557)

	Reporting Data
Number of Labs	4

NUMBER OF TESTS REPORTED BY LAB AND REPORT PERIOD



13:25:13 03NOV2016

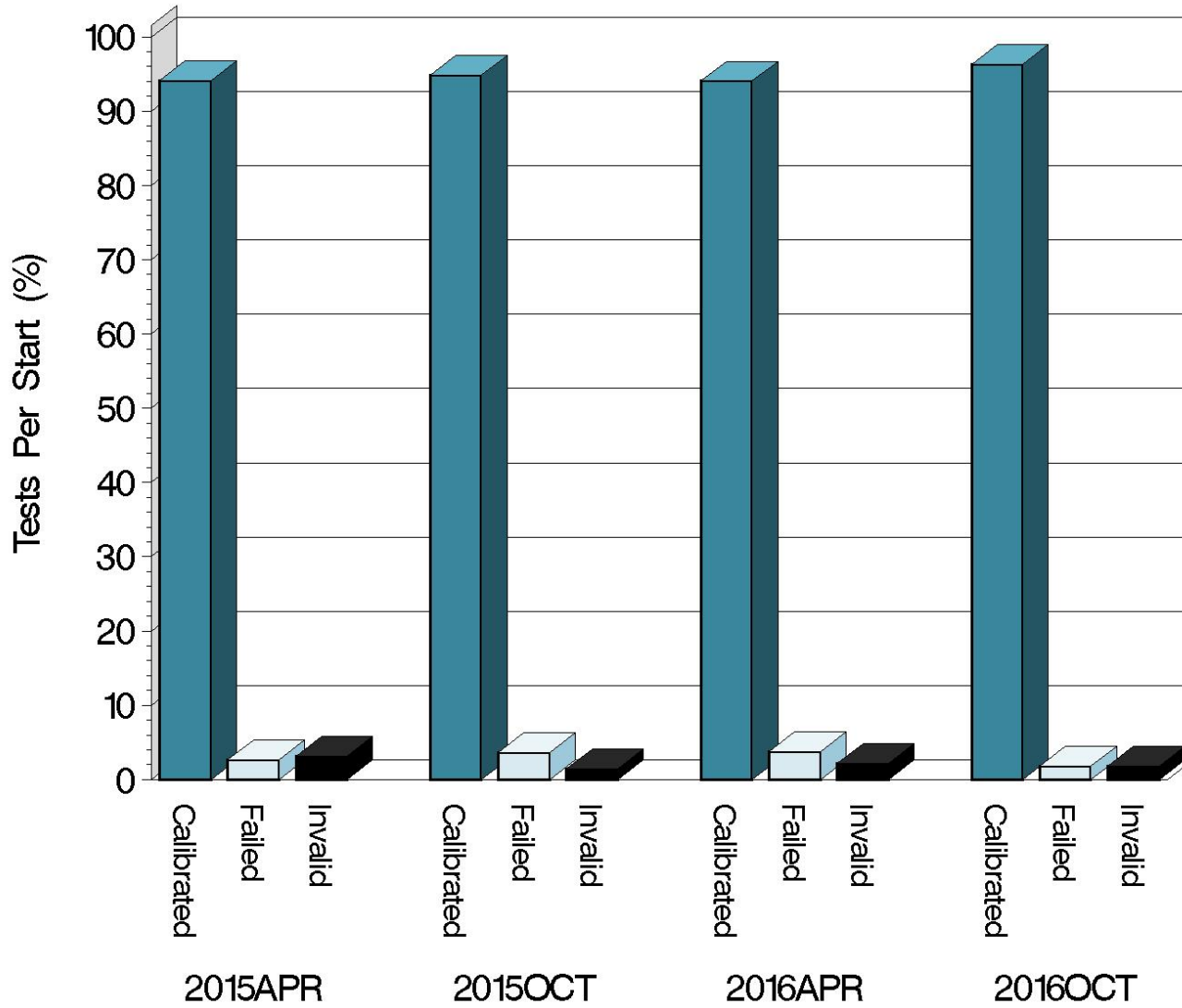
# BRT (D 6557)

## Test Distribution by Oil and Validity

						Totals	
		1006	81	82	82-1	This Period	Last Period
Accepted for calibration	AC	29	92	28	6	155	174
Rejected	OC	2	1	0	0	3	7
Invalidated by Lab	LC	0	1	2	0	3	1
Invalidated by TMC	RC	0	0	0	0	0	1
Aborted	XC	0	0	0	0	0	2
Hardware Approval run	NI	0	0	0	4	4	35
Invalid Hardware Approval run	LI	0	0	0	0	0	4
Unacceptable Approval run	MI	0	0	0	0	0	1
<b>Total</b>		<b>31</b>	<b>94</b>	<b>30</b>	<b>10</b>	<b>165</b>	<b>225</b>

# BRT (D 6557)

## CALIBRATION ATTEMPT SUMMARY



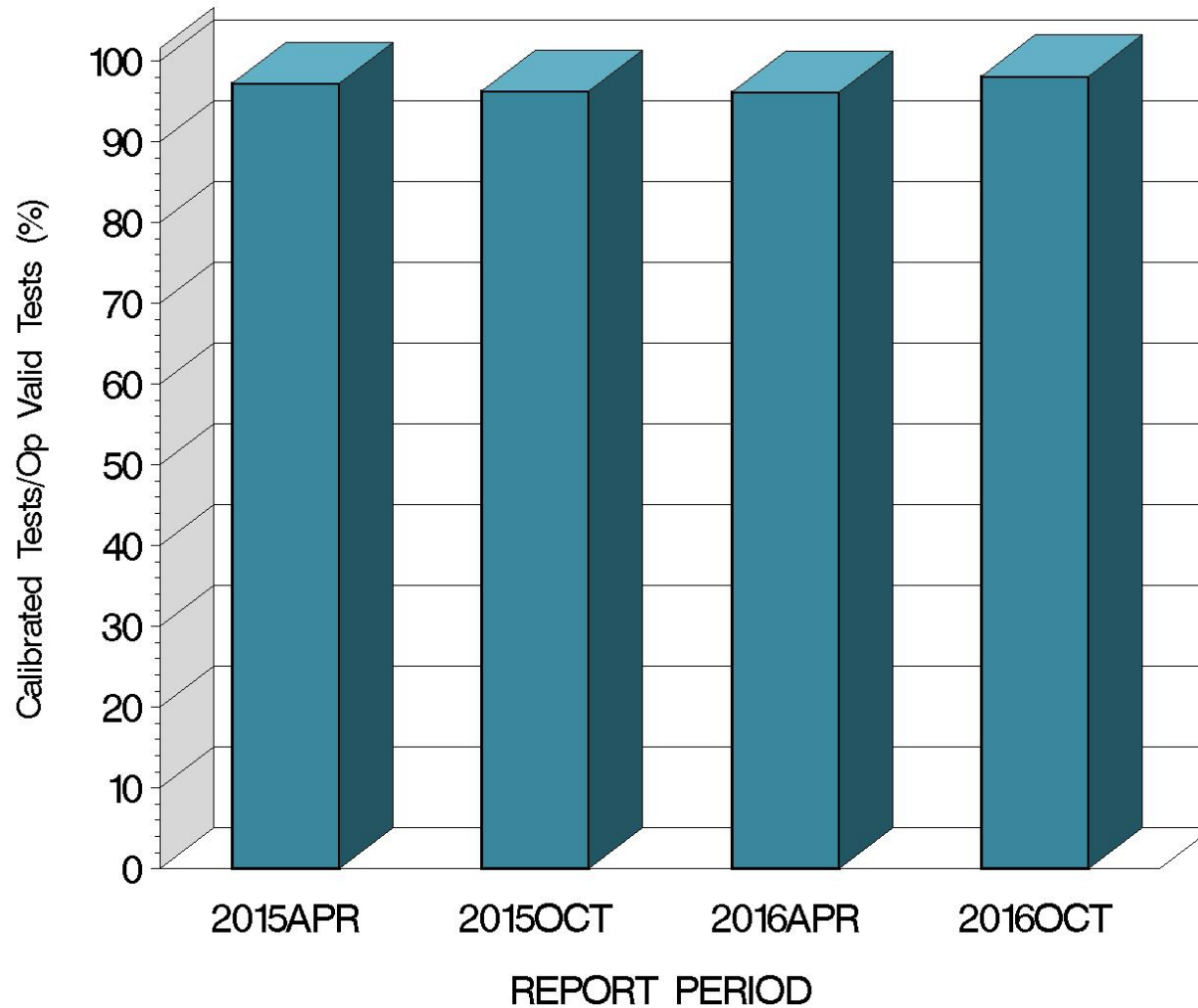
Resolution

Report Period

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# BRT (D 6557)

OPERATIONALLY VALID TESTS  
MEETING ACCEPTANCE CRITERIA



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# BRT (D 6557)

## CAUSES FOR LOST TESTS

Lab	Cause	Oil			Validity			Loss Rate		
		1006	81	82	LC	RC	XC	Lost	Starts	%
A	Airflow Control Problem	0	0	1	1	0	0	1	76	1.3
G	Shaker Table Failure	0	1	1	2	0	0	2	49	4.1
	Lost	0	1	2	3	0	0			
	Starts	31	94	30	158	158	158			
	%	0.0	0.1	6.7	1.9	0	0			

Lost tests are calibration attempts that were either aborted or operationally invalid

# BRT (D 6557)

Average $\Delta/s$ By Laboratory		
Lab	n	AGVYI
A	75	0.838
B	25	0.426
D	14	-0.019
G	44	0.235
Industry	158	0.529

Individual test results can be found on the TMC Web Page at the following link:

<ftp://ftp.astmtmc.cmu.edu/refdata/bench/brt/data/>

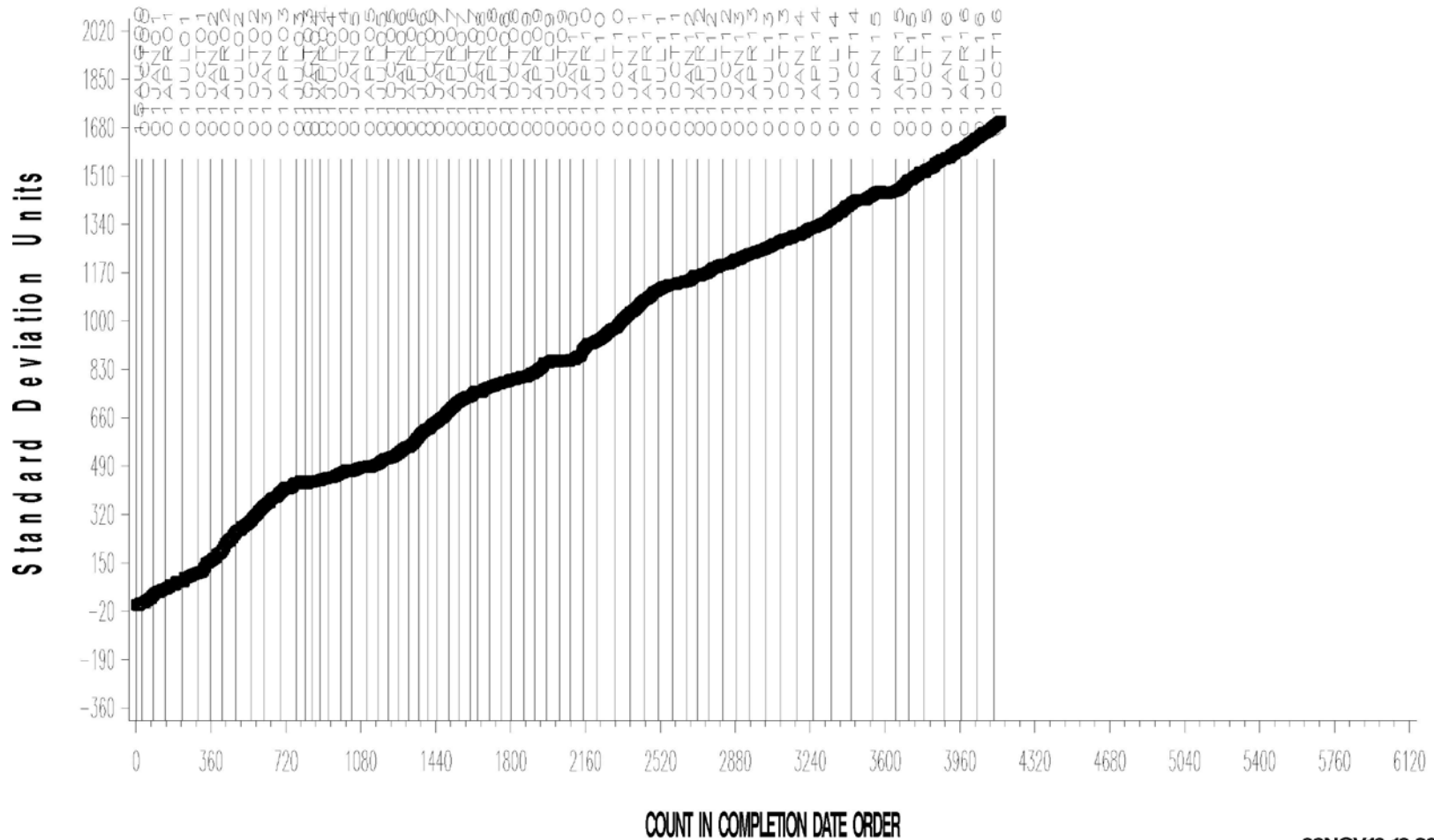
# BRT (D 6557)

BALL RUST TEST INDUSTRY OPERATIONALLY VALID DATA



REFERENCE AVERAGE GRAY VALUE

CUSUM Severity Analysis



03NOV16:13:20

**Test Monitoring Center**  
<http://astmtmc.cmu.edu>

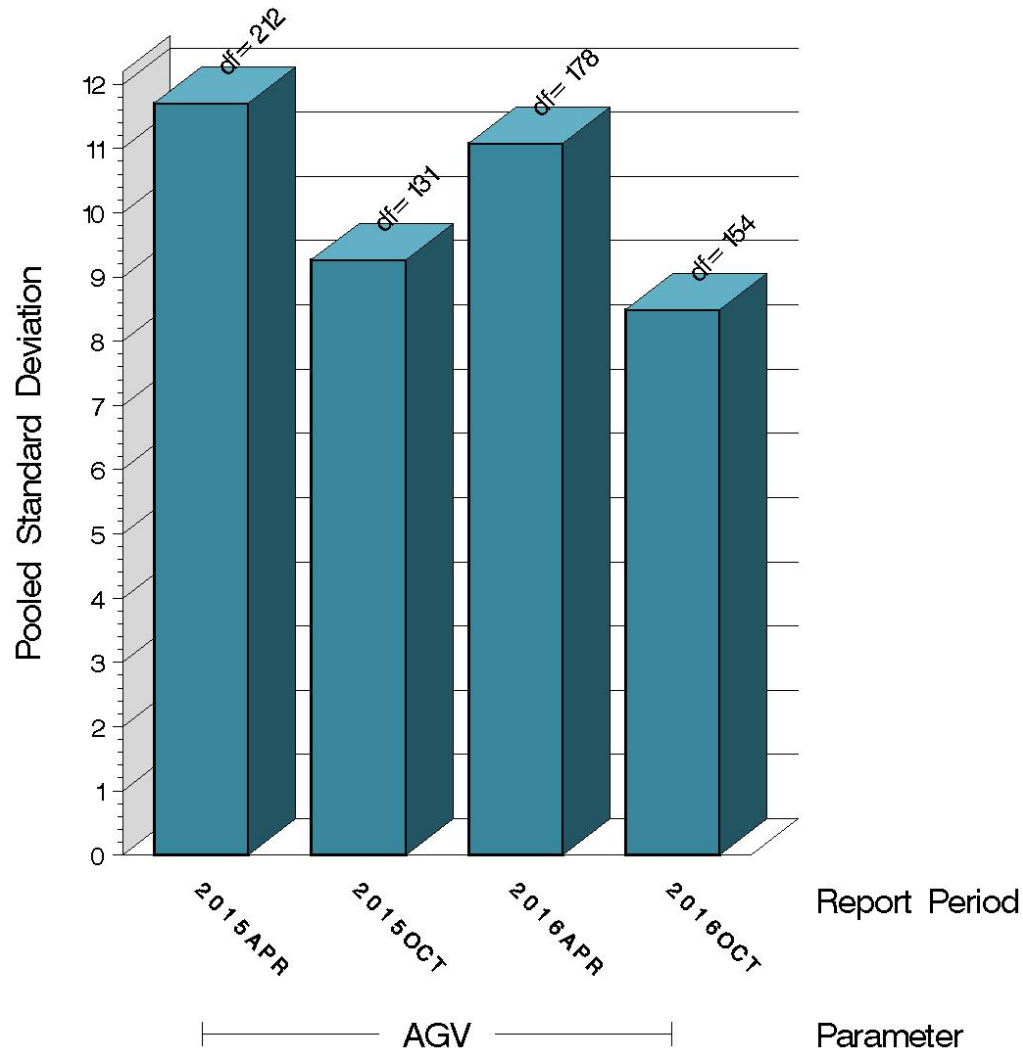




# BRT (D 6557)

## TEST PRECISION

POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD



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# BRT (D 6557)

## SUMMARY OF SEVERITY & PRECISION

### Severity

Over the course of this report period, AGV severity, as measured by CUSUM plotting, continued the mild trend that has existed since the inception of the test.

### Precision

Pooled  $s$  for this period is 8.50.

Precision, as measured by pooled standard deviation, is better than the previous period, but still in line with overall historical performance.

# BRT (D 6557)

## INFORMATION LETTERS

No Information Letters were issued this period.

# BRT (D 6557)

## STATUS OF REFERENCE OIL SUPPLY

Oil	Samples @ Labs	@ TMC	
		Samples (30 mL)	Gallons
1006	39	3962	31.7
81	59	500	4.0
82	13	0	0.0
82-1	74	1137	9.1
Total	185	5599	44.8