A Program of ASTM International

**Test Monitoring Center**

*Carnegie Mellon University*
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*http://astmtmc.cmu.edu*
*412-365-1000*

MEMORANDUM: 10-054

DATE: November 22, 2010

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

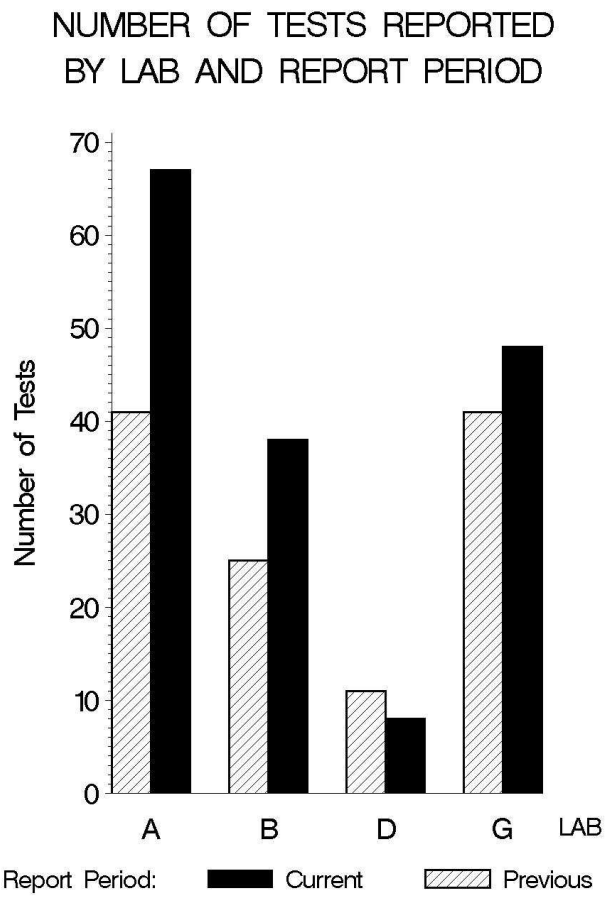
FROM: Michael T. Kasimirsky

SUBJECT: BRT Testing from April 1, 2010 through September 30, 2010

A total of 161 BRT tests were reported to the Test Monitoring Center during the period from April 1, 2010 through September 30, 2010. Following is a summary of testing activity this period.

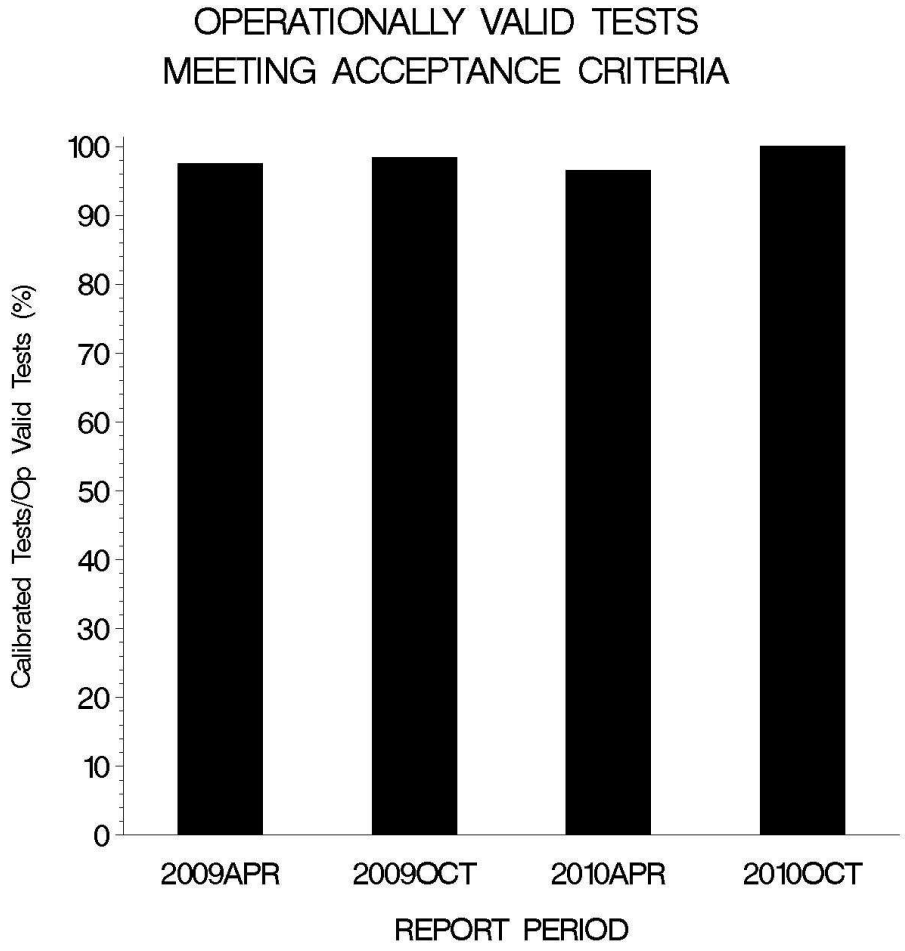
| | Reporting Data |
|---|---|
| Number of Labs | 4 |

Tests reported this period were distributed as shown below:



**Test Distribution by Oil and Validity**

| | | | | | Totals | |
|---|---|---|---|---|---|---|
| | | **1006** | **81** | **82** | This Period | Last Period |
| Accepted for Calibration | AC | 48 | 65 | 40 | 153 | 110 |
| Hardware Qualification Run | NI | 0 | 0 | 0 | 0 | 0 |
| Unacceptable for Calibration | OC | 0 | 0 | 0 | 0 | 4 |
| Operationally Invalid (lab) | LC | 1 | 2 | 1 | 4 | 3 |
| Operationally Invalid (lab/TMC) | RC | 0 | 0 | 1 | 1 | 0 |
| Aborted Calibration | XC | 1 | 1 | 1 | 3 | 1 |
| Total | | 50 | 68 | 43 | 161 | 118 |




The above chart shows the percentage of accepted operationally valid tests. No tests failed to meet the acceptance criteria this period.

Lost Tests per Start by Lab and Oil

| | 1006 | | | 81 | | | 82 | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab | Lost | Starts | % | Lost | Starts | % | Lost | Starts | % | Lost | Starts | % |
| A | 0 | 21 | 0 | 0 | 26 | 0 | 1 | 20 | 5 | 1 | 67 | 1 |
| B | 1 | 11 | 9 | 2 | 16 | 13 | 1 | 11 | 9 | 4 | 38 | 11 |
| D | 0 | 3 | 0 | 0 | 4 | 0 | 1 | 1 | 100 | 1 | 8 | 13 |
| G | 1 | 15 | 7 | 1 | 22 | 5 | 0 | 11 | 0 | 2 | 48 | 4 |
| Total | 2 | 50 | 4 | 3 | 68 | 4 | 3 | 43 | 7 | 8 | 161 | 5 |

Lost tests are those that were aborted or operationally invalid.

Causes for Lost Tests

| | | Oil | | | Validity | | | Loss Rate | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab | Cause | 1006 | 81 | 82 | LC | RC | XC | Lost | Starts | % |
| A | Incorrect Test Length | | | ● | ● | | | 1 | 67 | 1 |
| B | Incorrect Test Length | | ● | | ● | | | 1 | 38 | 3 |
| | Incorrect Temperature | | ● | | ● | | | 1 | | 3 |
| | Shaker Table Failure | ● | | ● | | | ● | 2 | | 5 |
| D | Incorrect Machine Calibration | | | | | ● | | 1 | 8 | 13 |
| G | Power Failure | ● | ● | | ● | | ● | 2 | 48 | 4 |
| | Lost | 2 | 3 | 2 | 4 | 1 | 3 | | | |
| | Starts | 50 | 68 | 43 | 161 | 161 | 161 | | | |
| | % | 4 | 4 | 5 | 3 | 1 | 2 | | | |

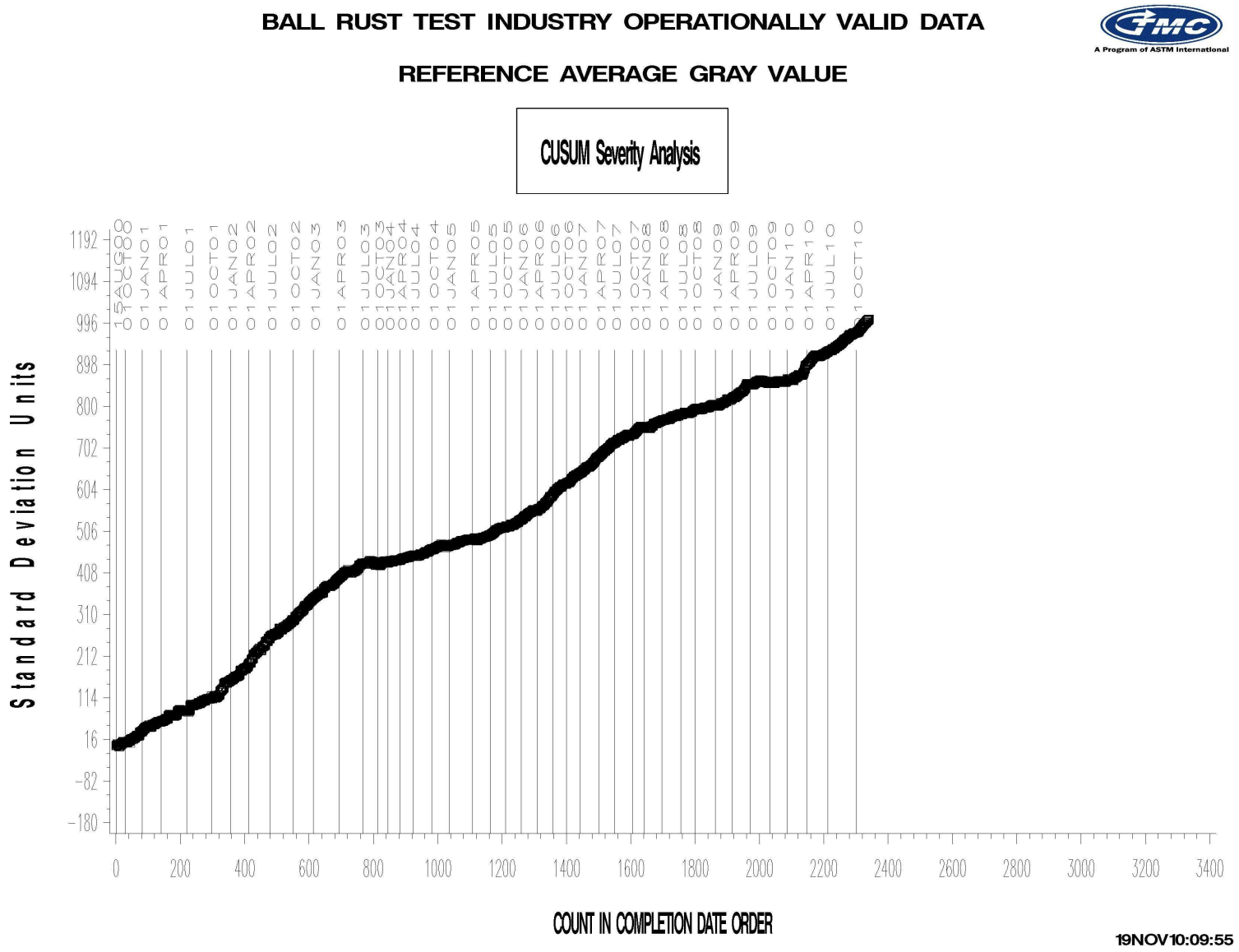
Average Δ/s by Lab

| Lab | n | AGVYI |
|---|---|---|
| A | 66 | 0.557 |
| B | 34 | 0.719 |
| D | 7 | 0.972 |
| G | 46 | 0.192 |
| Industry | 153 | 0.502 |

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

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

CUSUM PLOT


BALL RUST TEST INDUSTRY OPERATIONALLY VALID DATA
REFERENCE AVERAGE GRAY VALUE
CUSUM Severity Analysis
A Program of ASTM International
Standard Deviation Units
1192
1094
996
898
800
702
604
506
408
310
212
114
16
-82
-180
15AUG00
01JAN01
01APR01
01JUL01
01OCT01
01JAN02
01APR02
01JUL02
01OCT02
01JAN03
01APR03
01JUL03
01OCT03
01JAN04
01APR04
01JUL04
01OCT04
01JAN05
01APR05
01JUL05
01OCT05
01JAN06
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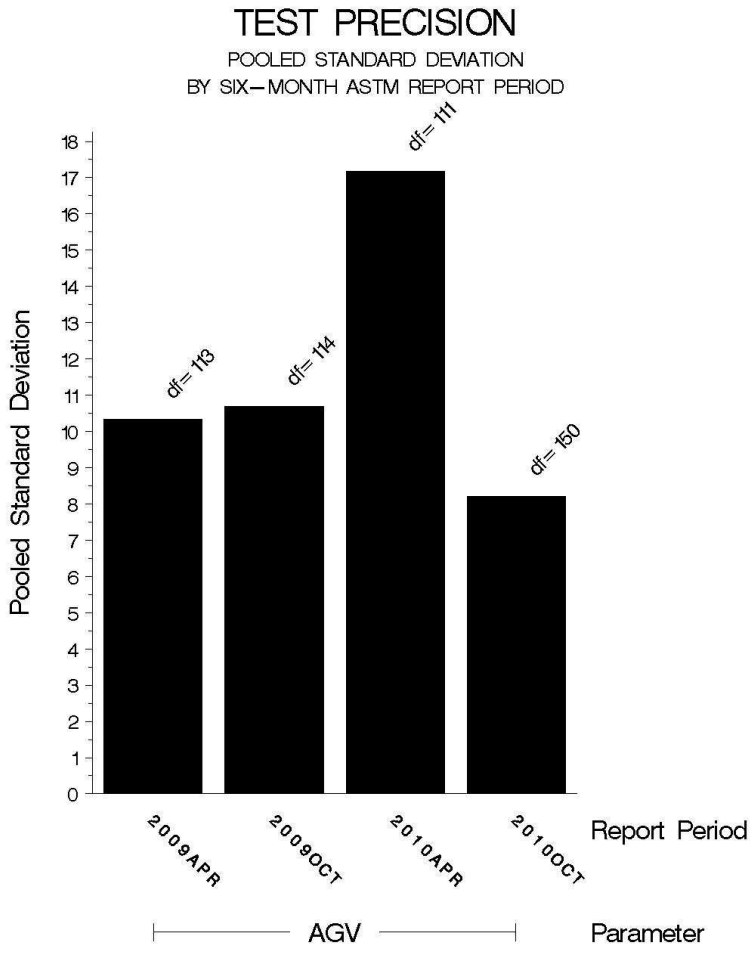
01OCT06
01JAN07
01APR07
01JUL07
01OCT07
01JAN08
01APR08
01JUL08
01OCT08
01JAN09
01APR09
01JUL09
01OCT09
01JAN10
01APR10
01JUL10
01OCT10
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400
COUNT IN COMPLETION DATE ORDER
19NOV10:09:55

POOLED S:

Pooled s for this period is 8.19. Shown below is a bar chart comparing the pooled s values for AGV over the last four report periods.



STATUS OF REFERENCE OIL SUPPLY:
At the end of this report period, the testing oil supply stood as outlined in the following table:

| | | @ TMC | |
|---|---|---|---|
| Oil | Samples @ Labs | Samples (30 mL) | Gallons |
| 1006 | 51 | 4887 | 39.1 |
| 81 | 60 | 1550 | 12.4 |
| 82 | 41 | 812 | 6.5 |
| 82-1 | 8 | 1225 | 9.8 |
| Total | 97 | 8474 | 67.8 |

INFORMATION LETTERS:
No information letters were issued this period.

SUMMARY

- 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 as measured by pooled standard deviation is better than previous periods.

MTK/mtk/astm1010.doc/mem10-054.mtk.doc
c: F. M. Farber
J. A. Clark
BRT Surveillance Panel
ftp://ftp.astmtmc.cmu.edu/docs/bench/brt/semiannualreports/brt-10-2010.pdf

Distribution: email