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Meeting Minutes: Surveillance Panel Conference Call – April 5, 2016, 10:00 am – 11:00 am CDT

Participating Members:

Angela Trader, Intertek
Dale Smith, Intertek
Eric Donovan, Afton
Wes Venhoff, Lubrizol
Matt Umerley, Lubrizol
Rebecca Warden, SwRI
Scott Parke, TMC

- Scott Parke (TMC) presented precision data for the K2XX hardware and compared it to historical Dana V01.1 data. The data indicates that the K2XX hardware is performing 0.6 merits severe on the 123-2 reference fluid but only 0.1 merits severe for the 155-1 reference fluid.
- SP asked for feedback on whether 0.6 merit correction factor is acceptable:
 - LZ agreed that testing shows at least 0.4 merits correction is required.
 - Afton agreed that testing showed at least 0.5 merits correction is required.
- Discussion was tabled pending further investigation.
- Rating template drawings were presented and discussed. Labs are to provide to raters and ask for feedback for the next conference call in 2 weeks.
- The topic of whether to create a new test procedure or update the current D7038 was again discussed. Since the current approach is to apply a correction factor to adjust the final rust value to meet historical performance, it was decided that we should introduce the new K2XX hardware into the current D 7038 procedure as a hardware change and abandon the idea of a new procedure. This also speeds the process to having an approved test. The following motion was made by Rebecca Warden:
 - To revert from creating a new test method and move forward as a hardware change to the current ASTM test procedure.
 - Motion seconded by Eric Donavan and passed unanimously.
 - New procedure discussion was tabled based on the motion. The current procedure will be updated for the next meeting.
- Another conference call will be scheduled around April 18 to discuss correction factor approval.

Meeting adjourned

Respectfully,

L33-2 Surveillance Panel Meeting

Conference Call
April 5, 2016
10:00am – 11:00am CDT



Agenda



Valued Quality. Delivered.

- L33-2
 - Matrix Test Results
 - Template Update
 - Procedure Updates
- New/Open Issues

Matrix Test Results



Valued Quality. Delivered.

TMC Oil Code	Rating Location										Final Rust	
	1	2	3	4	5	6	7	8	9	10		
155-1	9	10	9	8	10	9	10	10	10	10	10	9.4
155-1	10	8	8	10	10	9	10	10	10	10	10	9.3
155-1	10	8	8	9	10	10	10	10	10	10	10	9.3
155-1	10	8	8	9	10	10	10	10	10	10	10	9.3
155-1	10	8	8	8	10	10	10	10	10	10	10	9.1
155-1	10	8	8	10	9	10	10	10	10	10	10	9.3
155-1	10	8	8	8	10	10	10	10	10	10	10	9.1
155-1	10	8	8	10	10	10	10	10	10	10	10	9.4
155-1	10	8	8	8	10	10	10	10	10	10	10	9.1
123-2	8	9	8	8	8	8	10	8	8	8	8	8.3
123-2	8	5	5	8	8	8	8	8	9	8	8	7.2
123-2	5	8	8	8	8	8	8	9	8	8	8	7.8
123-2	8	8	8	8	8	8	8	8	8	8	8	8.0
123-2	10	8	8	9	9	8	8	10	9	9	9	8.8
123-2	9	8	8	8	8	8	8	9	9	8	8	8.2
123-2	10	8	8	8	8	8	8	8	8	8	8	8.2
123-2	10	8	8	8	8	8	8	9	8	8	8	8.3
123-2	10	5	8	8	8	8	8	9	8	8	8	7.7
123-2	8	8	8	8	8	8	8	8	8	8	8	8.0

AAM Data
155-1 Mean: 9.26
123-2 Mean: 8.05

Current v01.1 Targets
155-1 Mean: 9.580 **Std. Dev.: 0.250**
123-2 Mean: 8.740 **Std. Dev.: 0.260**

TMC Severity Shift Analysis



Valued Quality. Delivered.

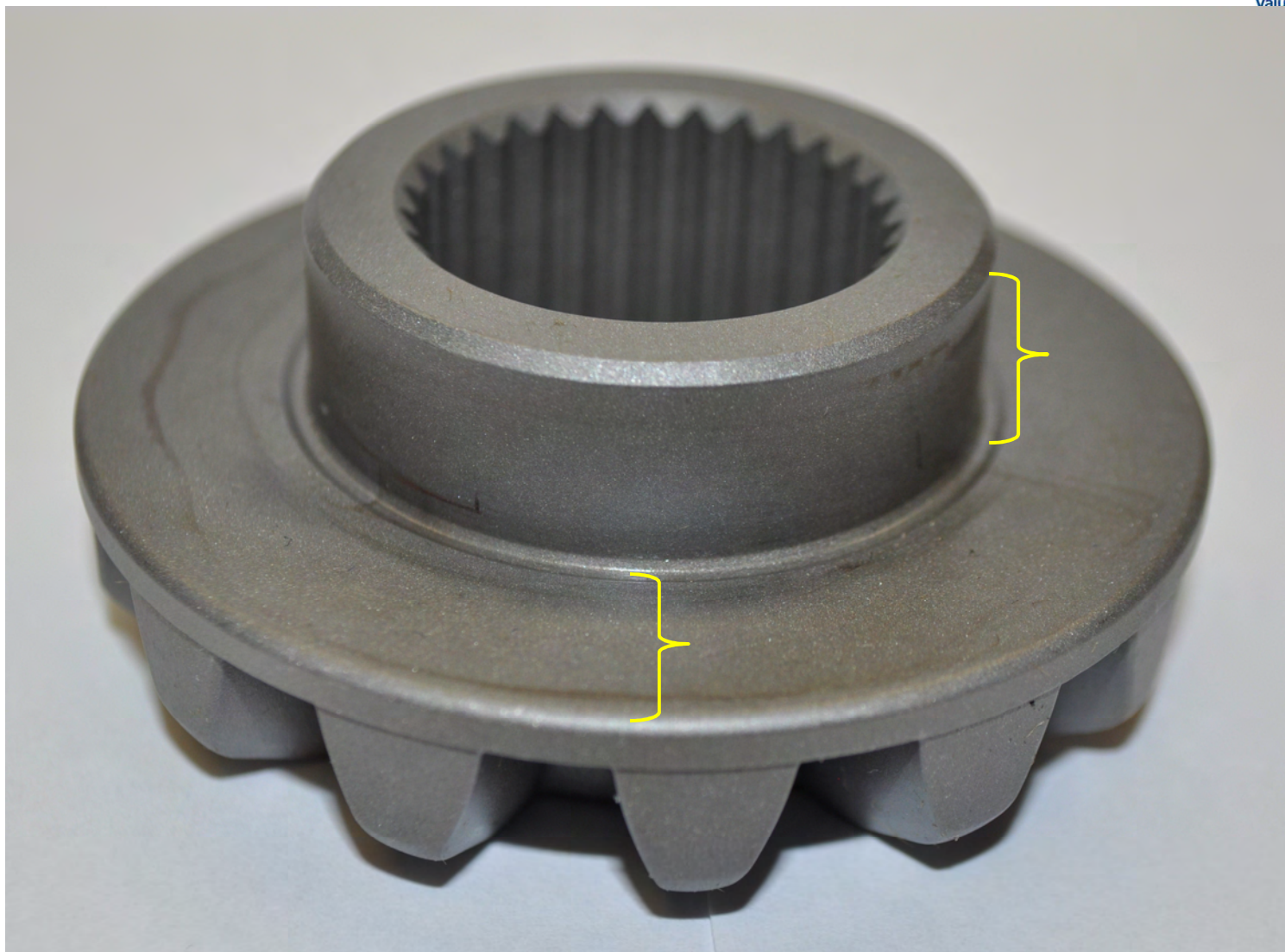
- Industry Oil 123-2:
 - AAM mean – 8.1 (N = 13)
 - Dana mean – 8.67 (N = 98)
 - Severe shift of about 0.6

- Industry Oil 155-1:
 - AAM mean – 9.35 (N = 11)
 - Dana mean – 9.42 (N = 29)
 - Severe shift of < 0.1

Area 3 – Diff. Gears (side)



Valued Quality. Delivered.



Differential Gear Contact Machined Surface



Valued Quality. Delivered.



Rating Template Update



Valued Quality. Delivered.

- Measured K2XX surface
- AAM 1% areas are 1.5 - 2 times larger than current 1% area for v01.1
- Need to confirm if we will continue to use entire machined surface in diff gear contact area 2 or only the mating surface area (total machined area is larger).
- Templates look the same as before but with new dimensions

Have received a draft back from facilitator

- Need precision data
- Need to update figures A5.2 and A5.14
- New definition for rust
- New procedure will use SI units
- Majority of changes are in “Section 9 Preparation of Apparatus”

Do we still want to go with a new procedure?

- Can probably use existing test as a hardware change and have ready sooner

New/Open Issues



Valued Quality. Delivered.

Anything new business?

Intertek

Thank You!

Comparison of AAM results to Dana results irrespective of oil

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The TTEST Procedure

Variable: RUSTYI

AXEL	N	Mean	Std Dev	Std Err	Minimum	Maximum
AAM	24	-1.7467	1.4781	0.3017	-5.9231	0.8800
Dana	127	-0.3460	1.1548	0.1025	-3.6154	2.9231
Diff (1-2)		-1.4007	1.2104	0.2694		

AXEL	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
AAM		-1.7467	-2.3708 -1.1225	1.4781	1.1488 2.0734
Dana		-0.3460	-0.5488 -0.1432	1.1548	1.0282 1.3174
Diff (1-2)	Pooled	-1.4007	-1.9330 -0.8683	1.2104	1.0872 1.3653
Diff (1-2)	Satterthwaite	-1.4007	-2.0528 -0.7485		

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	149	-5.20	<.0001
Satterthwaite	Unequal	28.544	-4.40	0.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	23	126	1.64	0.0904

Comparison of AAM results to Dana results irrespective of oil

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Obs	VARIABLE	CLASS	N	MINIMUM	MAXIMUM	MEAN	STDDEV
1	RUSTYI	AAM	24	-5.9231	0.8800	-1.7467	1.4781
2	RUSTYI	Dana	127	-3.6154	2.9231	-0.3460	1.1548

IND=123-2

The TTEST Procedure

Variable: RUST

AXEL	N	Mean	Std Dev	Std Err	Minimum	Maximum
AAM	13	8.1000	0.3830	0.1062	7.2000	8.8000
Dana	98	8.6724	0.3092	0.0312	7.8000	9.5000
Diff (1-2)		-0.5724	0.3182	0.0939		

AXEL	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
AAM		8.1000	7.8686	8.3314	0.3830	0.2746	0.6322
Dana		8.6724	8.6105	8.7344	0.3092	0.2712	0.3598
Diff (1-2)	Pooled	-0.5724	-0.7586	-0.3863	0.3182	0.2810	0.3669
Diff (1-2)	Satterthwaite	-0.5724	-0.8097	-0.3352			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	109	-6.10	<.0001
Satterthwaite	Unequal	14.152	-5.17	0.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	12	97	1.53	0.2503

IND=155-1

The TTEST Procedure

Variable: RUST

AXEL	N	Mean	Std Dev	Std Err	Minimum	Maximum
AAM	11	9.3545	0.2464	0.0743	9.1000	9.8000
Dana	29	9.4207	0.2484	0.0461	9.0000	9.8000
Diff (1-2)		-0.0661	0.2479	0.0878		

AXEL	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
AAM		9.3545	9.1890	9.5201	0.2464	0.1722	0.4325
Dana		9.4207	9.3262	9.5152	0.2484	0.1971	0.3359
Diff (1-2)	Pooled	-0.0661	-0.2438	0.1115	0.2479	0.2026	0.3195
Diff (1-2)	Satterthwaite	-0.0661	-0.2497	0.1174			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	38	-0.75	0.4558
Satterthwaite	Unequal	18.226	-0.76	0.4591

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	28	10	1.02	1.0000

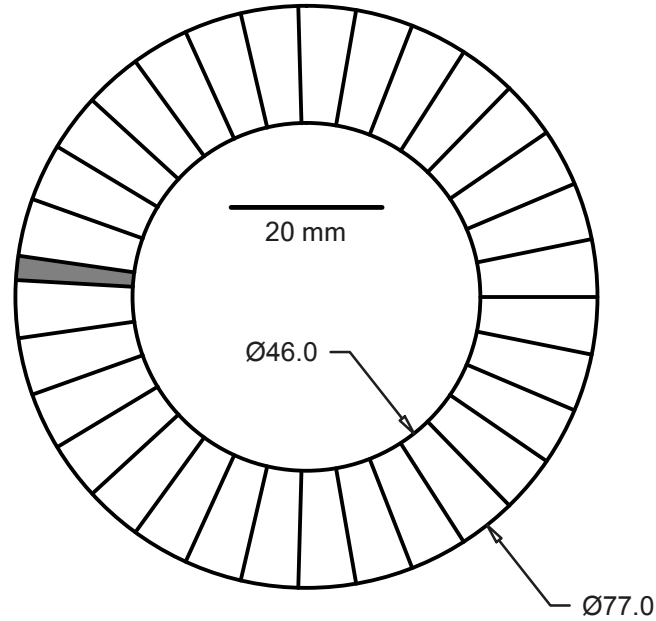
Comparison of AAM results to Dana results on oils 123-2 and 155-1

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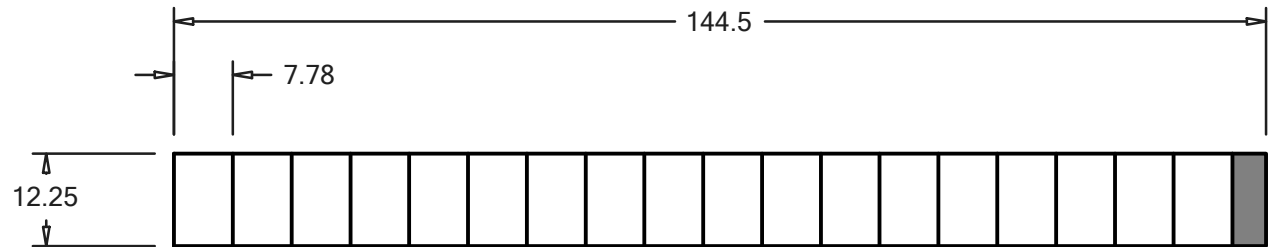
Obs	IND	VARIABLE	CLASS	N	MINIMUM	MAXIMUM	MEAN	STDDEV
1	123-2	RUST	AAM	13	7.2000	8.8000	8.1000	0.3830
2	123-2	RUST	Dana	98	7.8000	9.5000	8.6724	0.3092
4	155-1	RUST	AAM	11	9.1000	9.8000	9.3545	0.2464
5	155-1	RUST	Dana	29	9.0000	9.8000	9.4207	0.2484

1% Area Template

Surface Areas:		
Horizontal	(2)(2994.7)	5989.4 mm ²
Vertical	(2)(1770.1)	3540.2 mm ²
Total Area		9529.6 mm²
1% Area		95.3 mm ²
5% Area		476.5 mm ²



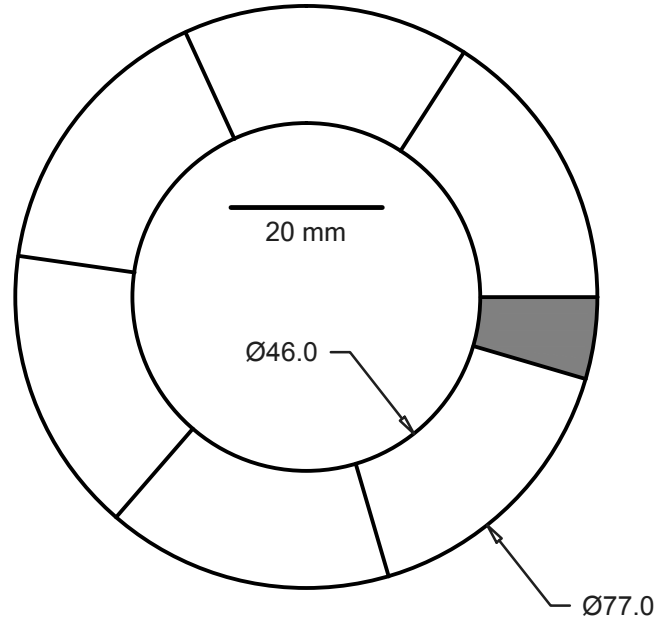
31 Sections = 95.3 mm² @ 11.456°



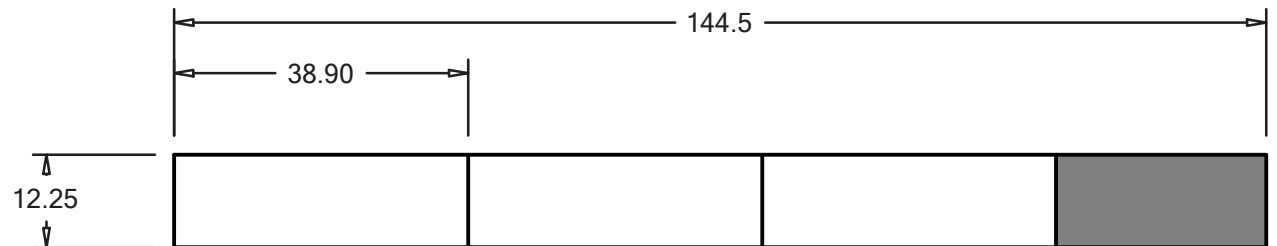
18 Sections = 95.3 mm² @ 7.78 mm

5% Area Template

Surface Areas:		
Horizontal	(2)(2994.7)	5989.4 mm ²
Vertical	(2)(1770.1)	3540.2 mm ²
Total Area		9529.6 mm ²
1% Area		95.3 mm ²
5% Area		476.5 mm ²



6 Sections = 476.5 mm² @ 57.28°



3 Sections = 476.5 mm² @ 18.90 mm