Sequence III Surveillance Panel Meeting

Teams
Wednesday January 28, 2026 1:00 – 2:30 PM CST

Agenda

1.0) Attendance

2.0) Approval of minutes

3.1) Minutes from 9/3/2025 & 10/29/2025 Meetings
No objections, approved

3.0) Executive Summary

- There were 547 engines in storage as of December 1, 2025, not counting engines at labs,
  - **February 12, 2026 update: 367 engines in storage**
- IMTS is working on the build manual for IMTS test kit assembly
- Probable engine build combinations,
  - IMTS block with OHT pistons/rings
  - IMTS block with IMTS pistons/rings
- Prove-out plan is high priority
  - Commonize cylinder bore oversizes
- Statisticians to define test matrix
- Sequence III O&H to provide Gantt chart for IIIH rebuild program to completion
- Contract group to complete RFQ for test kit components

4.0) IIIH Action Items

4.1) Fuel Update – Haltermann

- 90,000 gallons intank with a 6-load emergency supply. Will build a new fuel batch in late February

4.2) CPD Update: There were 547 engines in storage Dec 1, 2025, not including engines at the labs

4.3) O&H Panel update: W. Murdock still planning to meet to finalize rebuild parts list

4.4) IMTS update – S. Clark

- Working on putting parts together for an IMTS build.
  - Pistons and rings, working on crankshaft tunnels
- Planning to run a test on the new kit in February
- Writing rebuild manual

4.5) Honing concerns – R. Stockwell

- R. Stockwell: Are the specs for stones, fluid change, etc. sufficiently defined for the IIIH to carry over to the IIIH Rebuild?
- B. Campbell: The data is in LTMS, so it can be studied to look for correlations to hone data to results.

- P. Lang: IIIH SP has written the book on honing.
    - We could narrow or widen specs based on the data collected.
- T. Dvorak offered to summarize the existing IIIH cylinder finish data for the IIIH SP
    - R. Affinito and J. Martinez may also be able to assist
- B. Buscher: This is an opportunity to align the VIG hone procedure with IIIH so that they don't contradict each other

5.0) Rebuild discussion

5.1) Pistons

- OHT expects 10 sets of two sizes of oversize pistons in a couple of weeks
- They are the same pistons as currently used in the IIIH

Rebuild Parts Prove-out
P. Lang: How do we prove out the parts?
R. Stockwell: We will have the statisticians recommend a matrix.

- The IMTS engine build includes the bearings and other parts to build an engine
- If not, you need RFQ the other parts
- B. Campbell: The blocks are coming from the same place
- Vendors should include batch size, i.e. 2 month vs. 4 years
- There will be several different workstreams

J. Bowden:

- We should put a timeline together.
- Initial prove-out, then a test matrix timing and funding, there are a lot of changes.
- Need prove-out matrix+ final batch precision matrix.

B. Campbell:

- There are 2 possible outcomes: We run a batch and then it looks good. Otherwise, we need a new matrix and targets, which hopefully, doesn't make it a new test
- Then fund it with an MOA, with AOAP & ILSAC input
- Currently, there are 3 engine build options
    - IMTS block with OHT pistons/rings
    - Different block prep with OHT pistons/rings
    - IMTS block with IMTS pistons/rings

A. Rohlfing:

- Prove-out and then see what is viable.
    - Run IMTS block with IMTS pistons/rings
    - Run IMTS block with OHT pistons/rings
- Less ambiguity if we use the IMTS block for both types of pistons.
- Timeline for blocks and test kits.
- Pull the contract team meeting up a week earlier

5.2) Cylinder blocks

B. Campbell: Can IMTS get 2 blocks at all the labs?

- S. Clark: We only working our blocks, not the lab blocks.

- B Campbell: Is IMTS going to leave the bores small enough to have the labs perform the final hone for the pistons they have? Yes

R. Stockwell:
- Block prep is more than boring, it's tunnel aligning, bearing clearances, to get the block right, but it's not ready and will be another 2 months to get it ready.
- IMTS is still going through the details, but they are getting close.

D. Passmore agreed with that description.

B. Campbell:
- If the lab wants to punch out a block and run it, it needs to be asterisked, but it may useful

D. Passmore: IMTS will make the blocks available as soon as commercially possible
- IMTS has done some for their own use, but have not released any outside of IMTS

Tim Cushing:
- Will IMTS have an inspection report, like the GMOD block?
- GMOD blocks come with a post-machining inspection report

S. Clark:
- The machine shop keeps that info, but IMTS may be able to provide it.
- IMTS will be able to prepare 60-70 blocks/month.

T. Cushing:
- Would that be a batch?

D. Passmore:
- There will be dedicated fixtures and machines preparing blocks and cylinder heads. IMTS will keep an inventory the blocks and heads to ensure there are no supply issues.
- IMTS will be re-working the heads. The engines have heads and they are being re-worked too.
- IMTS will have to prove out each size piston, we have to re-measure the block after the 1st run with the smaller bore
- IMTS has gauges to check the blocks after running them
- B. Buscher: Will IMTS have GO/NO GO gauges to check the blocks? Yes

5.3) Rebuilt Engine Prove-out

P. Lang: What is the definition of prove-out?
- We need to define prove-out both sizes of blocks
- Both sizes of pistons from each supplier

S. Clark: We will run 2 precision matrices and then send RFQ
- We need to orchestrate what we are running and define success.
- Objective: Run both sets of pistons

6.0) <u>RFQ Process</u>

Does the III O&H have a target date to send RFQ out?

A. Rohlfing:
- Tightening up the part list and doesn't have an idea of what TMC needs to send the RFQ.

B. Campbell:
- This is on the contract team to finalize specs for the RFQ.
- Timing is critical.
- The SP can send the RFQ out now and then test the pistons

- If one set doesn't work out, then the contract is worked out with the supplier that meets the SP's requirements
- Purchase agreements between labs and suppliers, then order batches of each parts
- In parallel, an inventory of blocks to run at Afton
- Need to have test runs and if one of the options produce unacceptable results, we stop and move to the next option

- IIIH O&H to provide a timeline including,
- Prove-out HW availability
- Prove out definition and duration
- RFQ timing
- Final batch
- Precision matrix duration. Prove out duration : purchase orders. Delivery time for large batches.

- If we finished a prove-out in June, it takes 6-months to get batch pistons and then run a precision matrix, say 3 months, we could be ready by April '27.

- IMTS is the primary path for the rebuilt blocks and heads
- The test kits, pistons, rings, ancillary build parts will go out for RFQ

- W. Murdock & A. Rohlfing will work out Gantt chart for IIIH rebuild approval.

7.0) <u>Allocating Remaining Engines in Storage</u>

- The SP needs to have an engine allocation plan
- The goal is to have each of the labs run out of engines at the same time
- B. Buscher: Have AER send alarm notifications for every 50 engines shipped

G. Szappanos:

- Are labs limited from over buying and limiting their allocation to their historic run rate to prevent labs from over buying?

J. Bowden: OHT has limited labs from buying more than their historic consumption rate.

8.0) <u>Next Meeting</u>

TBD

9.0) <u>Meeting Adjourned</u>

Meeting Adjourned 2:30 PM CST

ASTM Sequence III Surveillance Panel (19 Voting members) date: 20260128

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2/14/2025

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Other Attendees:

✓ EMMANUEL NWOYE

2/14/2025