

# ENGINEERING REPORT

**Subject:** Oil Depletion Study vs. Ball Oil Absorption Rate

**Date:** 6/26/17

**Place:** International Training & Research Center

**Present:** Danny Speranza

**Purpose:**

Throw a fast and slow oil absorbing ball with the same RG and differential RG and see how it affects the oil pattern.

**Summary:**

Slightly less moves were required with the slow oil absorbing ball to continue to hit the strike pocket as the ball track developed in the oil pattern.

**Data:**

**Test:**

- Test each ball without stopping (no time delays in the middle of the test) – afraid the oil pattern might change during a time delay
- Test a slow and fast oil absorption balls
- Do not wipe oil off ball
  - How long to wait between shots, one minute
- Throw fast oil absorbing ball first
  - Count all shots (including practice)
  - Only move when you must (ball goes high)- note when you move (which shots) and try to minimize the moves
  - Number of total shots to be determined as test progresses
    - Want to make a few moves before stopping
    - Take lane tapes immediately after finishing bowling
- Re-oil and repeat test with slow oil absorption ball
  - Throw same number of shots
  - Move only when needed
- Goal – determine oil depletion with both balls
  - Determine what we learn
  - Determine oil depletion for each ball
  - Determine how to improve test if we want to repeat in the future

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Result summary:

Subject	Fast oil absorbing ball	Slow oil absorbing ball
Ball	Ball 1	Ball 2
Oil absorption rate (min)	4.7	38.2
RG/diff RG	2.494/ .057	2.490/ .052
Starting position: feet /target	19/12	19/12
- 10 <sup>th</sup> shot	19/12	19/12
- 20 <sup>th</sup> shot	20/12	20/12
- 30 <sup>th</sup> shot	20/12	20/12
- 40 <sup>th</sup> shot	21/13	20/12
- 50 <sup>th</sup> Shot	23/14	22/14
- 60 <sup>th</sup> shot	25/16	22/14
- 70 <sup>th</sup> shot	25/16	23/15
- 80 <sup>th</sup> shot	26/16	24/16
Total moves: feet / target	7/4	5/4
Reaction at end of test	Ball wanted to hook early, would slide on oil inside and hooked high if got to dry too early, reaction looked bad at end (over-under reaction)	Ball wanted to hook high because too much backend (as oppose to hooking early), reaction looked good at end (not over-under reaction) still smooth ball reaction at end
Bowler's comments	Shot 45-47 could have moved more than 1:1	Noticeably more oil on the ball surface
	Shot 63- 69 ball reaction is sharp on backend	Less overall movement of feet and target
	Shot 71- 80 shots need to be too exact	Pattern held up well & ball motion was predictable

The lane graphs below show about the same amount of oil being removed with both balls, except the fast oil absorbing ball has the oil removed deeper inside at 15 feet due to playing deeper at the end of the test.

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