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Improved hohlraums for high foot implosions[1] D.E. HINKEL, L.F. BERZAK HOPKINS, J. RALPH, M.B. SCHNEIDER, Lawrence Livermore Natl Lab, J.L. KLINE, None, D.P. TURNBULL, D.A. CALL, O.A. HURRICANE, Lawrence Livermore Natl Lab — Recent High Foot implosions[1] at the National Ignition Facility (NIF), where the laser power is high early in time, have resulted in record neutron yields. In these implosions, there is evidence of low mode radiation drive asymmetries impacting both in-flight and hot spot symmetry. Simulations suggest these asymmetries reduce neutron yield 2-4x, and thus improving the hohlraum should ameliorate implosion performance. To improve symmetry, a hohlraum 1.18x larger with a lower gas fill density has been designed and is being tested. This larger hohlraum with intermediate fill density has performed well for the shorter pulse lengths driving implosions with high-density carbon (HDC) ablators [2]. The challenge here is to maintain the predictability shown by simulation at the longer pulse lengths necessary for plastic ablators. Upcoming shots provide the first tests of drive symmetry and deficit as well as laser backscatter in these larger hohlraums with an intermediate gas fill density using the longer High Foot pulse. Results will be presented and compared to design.

[1] Hurricane *et al.*, *Nature* **506**, 343-348 (2014).
[2] P. A. Amendt, D. D. Ho, O. S. Jones, *et al.*, submitted to Phys. Rev. E, 2015.

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