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Helical Striation Pattern Generation and Axial Field Compression in Aluminum Liner Experiments at 1 MA[1] LEVON ATOYAN, TOM BYVANK, JOHN GREENLY, BRUCE KUSSE, SERGEI PIKUZ, WILLIAM POTTER, TANIA SHELKOVENKO, DAVID HAMMER, Cornell University — Awe *et al.* [*Phys. Plasmas 21*, 235005, 2014] found on the 20 MA Z machine that applying an externally generated axial magnetic field to an imploding liner produces a helical plasma pattern near the surface of the liner. Here we show that this phenomenon is also observed using 10 mm long cylindrical metal liners having 16 mm diameter and 3 to 6 μm wall thickness on the 1 MA, 100-200 ns COBRA pulsed power generator [T. A. Shelkovenko et al, *Rev. Sci. Instrum. 77*, 10F521, 2006]. The magnetic field in these experiments is created using a 150 μs rise time Helmholtz coil, and the pattern is observed using extreme ultraviolet imaging. Moreover, using B-dot probes we show that there is a 4-8% axial magnetic field compression relative to the initially applied B_z. Using a visible light framing camera, we show that this compression begins before the outside surface of the liner has become a visible light emitting plasma.

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