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Magneto-Rayleigh-Taylor Instability Experimental Progress on Thin Foils Driven by a 1-MA LTD* J.C. ZIER, Y.Y. LAU, M.R. GOMEZ, W.W. TANG, M.A. FRANZI, D.M. FRENCH, R.M. GILGENBACH, U of Michigan, M.G. MAZARAKIS, M.E. CUNEO, M.R. LOPEZ, B.V. OLIVER, T.A. MEHLHORN, Sandia National Labs — Foils may soon become necessary to achieve the required mass for higher current-driven x-ray sources. They may also offer useful options for x-ray pulse shaping and as imploding liners for magnetized target fusion. This paper reports our latest design and experimental progress on the dominant instability, the magneto-Rayleigh-Taylor instability (MRT). Planar Al foils as thin as 400 nm driven by the 1-MA linear transformer driver (LTD), MAIZE, at the U of Michigan, are used as the dynamic loads for this investigation. A higher inductance feed will be used to lengthen the current drive to achieve >10 e-foldings of MRT growth for observation with a laser backlighter. Inductance considerations, schlieren and interferometry diagnostics, and experimental progress will be presented along with MRT theory. *This work was supported by US DoE through Sandia National Labs award numbers 240985 and 76822 to the U of Michigan. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the US DoE's NNSA under Contract DE-AC04-94AL85000. JCZ was supported by a NPSC fellowship through Sandia National Labs. MRG was supported by a SSGF fellowship through NNSA.

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