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Ignition and Growth Modeling of Detonating TATB Cones and Arcs* CRAIG TARVER, STEVEN CHIDESTER, Lawrence Livermore National Laboratory — Abstract. The Ignition and Growth reactive flow model for the detonating triaminotrinitrobenzene (TATB)-based explosives LX-17 and PBX 9502 is applied to recent experimental data on converging conical charges plus confined and unconfined arc charges. The conical charges are at first overdriven by the converging flow and then fail to detonate as the radial rarefaction wave slows the reaction rate. Unconfined TATB arcs detonate more slowly than cylindrical charges on the inner surface and exhibit large phase velocities on the outer surface. Confinement reduces but does not eliminate these effects. The model calculations reproduce these features and agree well with experimental detonation velocity and arrival time data. *This work was performed under the auspices of the U. S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48.

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