1009-01-14 **Alan Gluchoff*** (`alan.gluchoff@villanova.edu`), Department of Mathematical Sciences, Villanova University, Villanova, PA 19085-1699. *The Contributions of Four "Mathematical People" to the Mathematical Ballistics of the World War I Era in America. Preliminary Report.* Preliminary report.

By 1917 the American mathematical community was quite diverse and stratified, comprising, among others, world-class researchers, university and college instuctors, some applied mathematicians, and students with Masters and Bachelors degrees who found various uses for their talents. This work discusses the contributions of four such "mathematical people" (Gilbert Ames Bliss, Forest Ray Moulton, Roger Sherman Hoar, and Philip Schwartz) to the "New Ballistics" of the World War I era. Their efforts included a revision of the approach to calculating trajectories by the introduction of numerical integration, a tying of the new methods to the newly emerging research area of functional analysis, an organization of this mass of material into a coherent, presentable form with some physical motivation of required formulae, and a critical and experimental look at the resulting work. These efforts were characterized by an unusual emphasis on mathematical rigor which is in some ways analogous to the movement in sophistication from calculus to advanced calculus, but also included instuctional activites geared to making the new methods accessible to its users. (Received June 08, 2005)