1023-49-1182 **David W. Carter*** (`dcarter@draper.com`) and **Steve Tavan**. *Dynamic Programming and the Dragonfly Guided Airdrop System.* Preliminary report.

The Dragonfly is a 3500 square foot, ram-air precision airdrop system for payload weights up to 10,000 lb. The system, which includes an innovative main canopy, hardened airborne guidance unit, and autonomous guidance, navigation, and control algorithms, has been developed for the U.S. Army by a multi-contractor team managed by the Army Research, Development and Engineering Command at the Natick Soldier Center in Massachusetts. Dragonfly's onboard guidance algorithms and flight software were developed at Draper Laboratory. To minimize real-time computer loading, terminal guidance is implemented as a table-lookup, using a large family of precomputed trajectories stored in inexpensive flash memory. This presentation will show how we used dynamic programming to generate the trajectory tables used for Dragonfly terminal guidance. (Received September 25, 2006)