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North American Eagle F-104 Jet Car Land Speed Record High Speed Parachute System

Randy Thomas
Paratech Parachutes, Fairbanks, Alaska 99708

Dr. David Thomas
Thomas Aerospace Corporation, Fairbanks, Alaska 99708

Figure 1: Full side view of the North American Eagle F-104 jet car with high speed aluminum wheels on display with Mount Rainer in the background in Washington State which is the home of this project.

Abstract:

This paper describes the design, development and successful flight testing of a prototype high speed conical ribbon parachute system for the North American Eagle F-104 jet car in the quest to achieve 800 mph to break the Land Speed Record. This prototype conical ribbon parachute system was designed from scratch, and fabricated from readily available unconventional materials by the primary author. This parachute system was successfully deployed and flight tested with high speed test runs on the El Mirage dry lake bed in June 2008. Further high speed parachute deployment testing conducted in 2009 further expands the parachute deployment envelope to fully flight qualify it for the world record speed runs. This parachute system constructed of nylon and Kevlar materials is designed to handle the high internal material stresses when deployed at the upper limit of 800 mph. Complete technical design analysis documentation supports calculations to verify the structural integrity of this parachute system. These parachutes will be the fastest parachutes on the surface of the Earth when deployed for the actual land speed record runs, and will play a part in achieving a new supersonic Land Speed Record.

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