Terrier Oriole (45.XXX)

General

The Terrier Oriole is a two-stage, unguided, fin stabilized rocket system which utilizes a Terrier first stage booster and an Oriole rocket motor for the second stage propulsion. The Terrier motor has four equally spaced fins, and the Oriole motor has four fins on the aft end arranged in a cruciform configuration to provide stability.

Figure F.10-1: Terrier Oriole

Vehicle Performance

The Terrier motor is 155 inches long with a principal diameter of 18 inches. There is a 14 inch interstage adapter which allows for drag separation after Terrier burnout. Typically, the Terrier booster will utilize two spin motors to reduce dispersion and also serve as drag plates. Each Terrier fin is 4.8 square feet in area. Normally, the fins are canted to provide two revolutions per second spin rate at Terrier burnout. The weight of the Booster system is 2,207 pounds.

The Oriole is 22 inches in diameter and 155 inches long. The Oriole fins are normally canted to provide for four revolutions per second spin rate at burnout.

Payload

The standard payload for the Terrier Oriole has a principal diameter of 22 inches and utilizes a 19º total angle nose cone, although an Ogive cone can also be flown. The envelope of payload lengths that can be flown has not been established yet. The rocket system will carry a 800 pound payload to 340 kilometers and a 1500 pound payload to 184 kilometers when launched from sea level at an 85 degree launch angle. Standard hardware includes a nose cone and a capacitive discharge ignition system. Separation systems can be provided to separate the payload from the motor during ascent.

Performance:

The Terrier Oriole launch vehicle configuration and apogee altitude and impact range at various launch elevation angles and payload weights are presented in Figure F10-2.

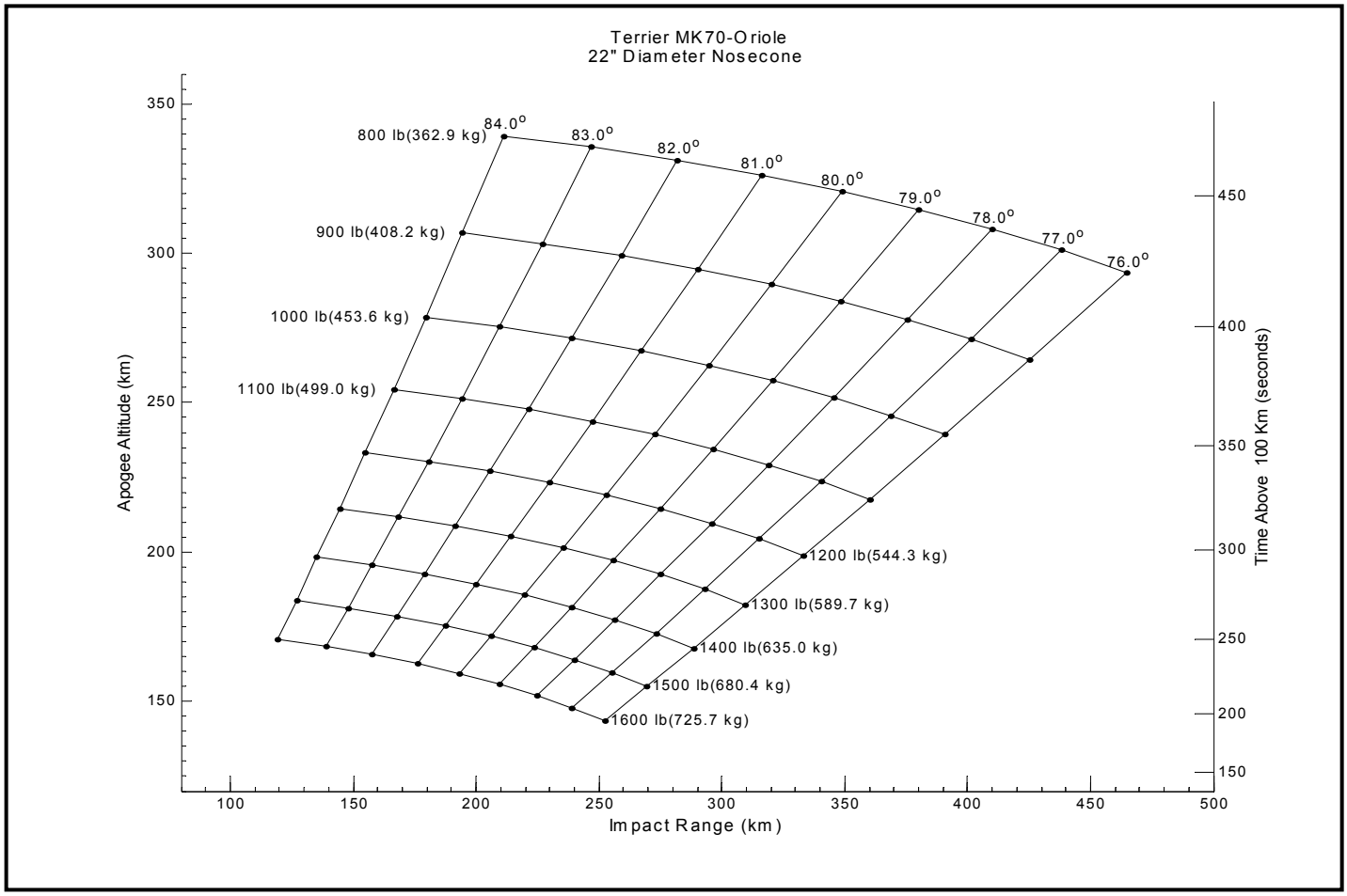

Figure F.10-2: Terrier Oriole Motor Vehicle Predicted Performance