Terrier Lynx (42.XXX)

General

The Terrier Lynx is a two-stage, unguided, fin stabilized rocket system which utilizes a Terrier mk70 first stage booster and a Lynx rocket motor for the second stage propulsion. The Terrier mk70 motor has four equally spaced modified Ajax fins, and the Lynx motor has four modified Orion fins on the aft end arranged in a cruciform configuration to provide stability. Figure F.9-1 shows the Terrier Lynx vehicle.

Figure F.9-1 Terrier Lynx Launch Vehicle

Vehicle Performance

The basic Terrier MK70 motor is 155 inches long with a principal diameter of 18 inches. There is a 3 inch interstage adapter which allows for drag separation at Terrier burnout. Typically, the Terrier booster will utilize two spin motors to reduce dispersion and also serve as drag plates. Each Terrier fin is 4.6 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 2,288 pounds.

The Lynx is 14 inches in diameter and 110 inches long. The Lynx fins are normally canted to provide for four revolutions per second spin rate at burnout.

Payload

The standard payload for the Terrier MK70-Lynx has a principal diameter of 14 inches and utilizes a 3:1 ogive nose cone, although an 11 deg total angle cone can also be flown. The envelope of payload lengths that can be flown has not been established yet, however, it is expected to be similar to the boosted Orion family. The rocket system will carry a 250 pound payload to 378 kilometers and a 500 pound payload to 254 kilometers when launched from sea level at an 85 degree launch angle.

Standard hardware includes a 3:1 ogive nose cone and a capacitive discharge ignition system. Separation systems can be provided to separate the payload from the motor during ascent.

Performance Graph

The Terrier mk70-Lynx launch vehicle configuration and apogee altitude and impact range at various launch elevation angles and payload weights are presented in Figure F.9-2.
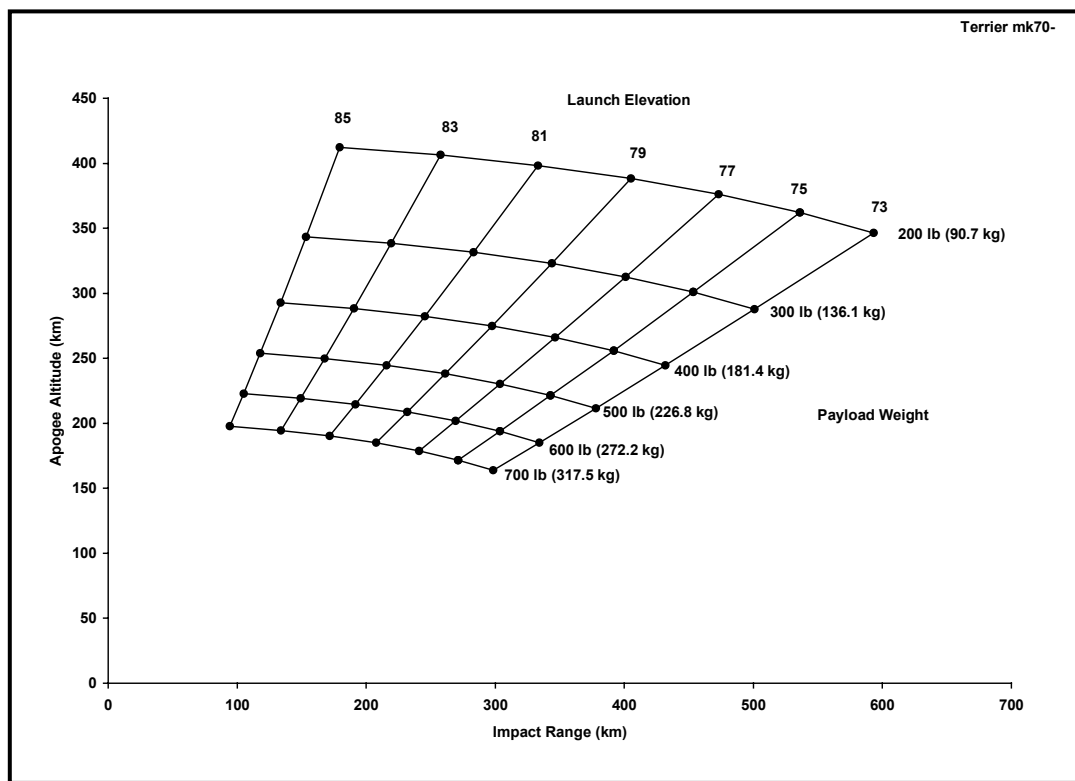

Figure F.9-2 Terrier Lynx Performance Graph