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The following data comes from _International Reference Guide to Space Launch Systems_ by Steven J. Isakowitz, 1991 edition.

Notes:

* Unless otherwise specified, LEO and polar paylaods are for a 100 nm orbit.

* Reliablity data includes launches through Dec, 1990. Reliabity for a familiy of vehicles includes launches by types no longer built when applicable

* Prices are in millions of 1990 $US and are subject to change.

* Only operational vehicle families are included. Individual vehicles which have not yet flown are marked by an asterisk (*) If a vehicle had first launch after publication of my data, it may still be marked with an asterisk.

Vehicle | Payload kg (lbs) | Reliability | Price | Launch Site

(nation) | LEO Polar GTO ||| (Lat. & Long.)

Ariane 35/40 87.5% Kourou

Atlas 213/245 86.9% Cape Canaveral

Atlas E -- 820 -- 15/17 $45m Vandeberg AFB

Atlas I5,580 4,670 2,250 1/1 $70m

Atlas II6,395 5,400 2,680 0/0 $75m

Atlas IIA6,760 5,715 2,810 0/0 $85m

* Atlas IIAS8,390 6,805 3,490 0/0 $115m

Delta 189/201 94.0% Cape Canaveral

(USA) Vandenberg AFB

Delta 69253,900 2,950 1,450 14/14 $45m

Delta 79255,045 3,830 1,820 1/1 $50m

Energia 2/2 100% Baikonur

(Russia) (45.6 N 63.4 E)

Energia 88,000 80,000 ??? 2/2 $110m

H series 22/22 100% Tangeshima

(Japan)(30.2 N 130.6 E)

Kosmos 371/377 98.4% Plestek

(Russia) (62.8 N 40.1 E)

Kosmos 1100 - 1350 (2300 - 3000) $??? Kapustin Yar

[400 km orbit ??? inclination] (48.4 N 45.8 E)

Long March 23/25 92.0% Jiquan SLC

(China) (41 N100 E)

* CZ-1D 720 ??? 200 0/0 $10m Xichang SLC

Taiyuan SLC

Pegasus/Taurus 2/2 100%Peg: B-52/L1011

(USA)Taur: Canaveral

Pegasus 455 365 125 2/2 $10m or Vandenberg

* Taurus1,450 1,180 375 0/0 $15m

Proton 164/187 87.7% Baikonour

(Russia)

Proton 20,000 ??? 5,500 164/187 $35-70m

SCOUT 99/113 87.6%Vandenberg AFB

(USA)Wallops FF

(600) (460) (120)San Marco

* Enhanced SCOUT 525 372 110 0/0 $15m

Shavit 2/2 100%Palmachim AFB

(Israel)( ~31 N)

Shavit ??? 160 ??? 2/2 $22m

Space Shuttle 37/38 97.4%Kennedy Space

(USA)Center

Shuttle/SRB 23,500 ??? 5,900 37/38 $248m (28.5 N 81.0 W)

* Shuttle/ASRM 27,100 ??? ??? 0/0

SLV 2/6 33.3%SHAR Center

(India) (400km) (900km polar)(13.9 N 80.4 E)

Titan 160/172 93.0%Cape Canaveral

(USA)Vandenberg

Titan II ??? 1,905 ??? 2/2 $43m

Titan III 14,515 ??? 5,000 2/3 $140m

Titan IV/SRM 17,700 14,100 6,350 3/3 $154m-$227m

Titan IV/SRMU 21,640 18,600 8,620 0/0 $???m

Vostok 1358/1401 96.9%Baikonur

(Russia) [650km]Plesetsk

Vostok4,730 1,840 ??? ?/149 $14m

Soyuz7,000 ??? ??? ?/944 $15m

Molniya1500kg (3300 lbs) in ?/258 $???M

Highly eliptical orbit

Zenit 12/13 92.3%Baikonur

(Russia)

Zenit 13,740 11,380 4,300 12/13 $65m