Mini Craft for Classic Traveller

By A.T. Pollard

These rules seek to combine the best features of Book 2 (B2), High Guard (HG) and Striker (ST) into a system for the quick and simple design of spacecraft from 1 dTon to 20 dTons, called Mini Craft.

MiniCraft Design Checklist

1. Select hull size. Hulls are listed in dTons and cubic meters (1 dTon = 14 cubic meters). Internal components are listed in cubic meters.
2. Select drives. Mini Craft require maneuver drives and power plants smaller than the HG minimum of 1 dTon each. The "Triplex Drive" combines the Maneuver Drive, Power Plant and Fuel into a single unit subject to the Striker minimum of 1 cubic meter. The listed Triplex Drive is able to provide 1G performance in the indicated hull. Use two drives for 2G performance, three for 3G performance, etc.
3. Fuel Tankage. Each drive requires the indicated amount of unrefined liquid hydrogen to operate for the listed duration. Fuel is also used to provide cooling in the Triplex Drive. (1 cu. meter fuel = Cr 8).
4. Cockpit. 8 cubic meters; Cr 1,000,000. Includes computer, avionics, flight control, pilot couch and life support. (A 2 person cockpit requires 14 cubic meters; Cr 1,500,000).
5. Passengers. A Small Craft couch requires 7 cubic meters and Cr 25,000 per passenger - provides room to sit and stand plus 1 cubic meter of luggage. A Mini Craft Couch require 3.5 cubic meters and Cr 25,000 per passenger - minimum room to sit with no place for luggage.
6. Armament. Mini Craft cannot mount weapons or armor.
7. Agility. For those who use High Guard, all Mini Craft have an agility equal to their acceleration (2G = agility 2).

MINI CRAFT HULLS

dTons[1]	Cubic Meters[1]	Cost MCr[2]	Const. Days[3]
1.0	14	0.11	3
2.0	28	0.22	6
3.0	42	0.33	9
4.0	56	0.44	12
5.0	70	0.55	15
6.0	84	0.66	18
7.0	98	0.77	21
8.0	112	0.88	24
9.0	126	0.99	27
10.0	140	1.10	30
11.0	154	1.21	33
12.0	168	1.32	36
13.0	182	1.43	39
14.0	196	1.54	42
15.0	210	1.65	45
16.0	224	1.76	48
17.0	238	1.87	51
18.0	252	1.98	54
19.0	266	2.09	57
20.0	280	2.20	60

[1] Ship size in dTons and cubic meters.
[2] Cost of in Millions of Credits
[3] Time required to construct ship.
[4] Drive ID based on size in cu. meters.

TRIPLEX DRIVE/POWER PLANT

Model[4]	Cubic Meters[5]	Cost MCr[6]	Fuel[7] cu.m./hrs.
BB	2	0.295	0.3 / 18
CC	3	0.442	0.4 / 24
DD	4	0.589	0.5 / 30
EE	5	0.737	0.6 / 36
FF	6	0.884	0.8 / 42
GG	7	1.031	0.9 / 54
HH	8	1.179	1.0 / 60
JJ	9	1.326	1.1 / 66
LL	11	1.621	1.4 / 84
MM	12	1.768	1.5 / 90
NN	13	1.915	1.6 / 96
PP	14	2.063	1.8 / 108
QQ	15	2.210	1.9 / 114
RR	16	2.357	2.0 / 120
SS	17	2.504	2.1 / 126
TT	18	2.652	2.3 / 138
UU	19	2.799	2.4 / 144
WW	21	3.094	2.6 / 156
XX	22	3.241	2.8 / 168
YY	23	3.388	2.9 / 174

[5] Drive size in cubic meters (for 1G).
[6] Drive cost of in Millions of Credits
[7] Fuel capacity and number of hours the drive will operate on a full tank.

Hull: Mini Craft use streamlined metal hulls identical to those used by other small craft. Custom hulls may be built any size/configuration at Cr 110,000 per dTon (fractional cubic meters are dropped).

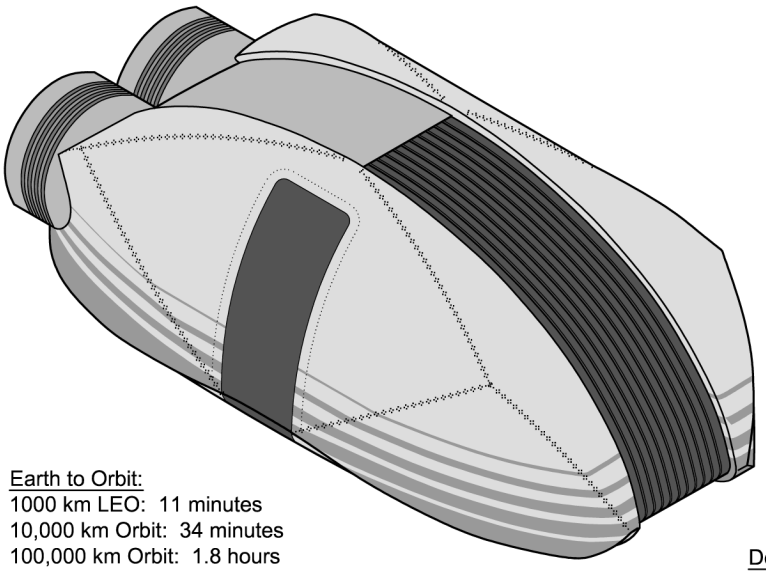
Triplex Drive: Combines the Maneuver Drive, Power Plant and Fuel into a single unit allowing greater balance and smaller individual components than HG, but meeting the 1 cubic meter minimum in ST. Each Triplex Drive provides 1G of performance and requires 3% of the ship for Maneuver, 4% for Power Plant and 1% for fuel (total of 8% of the ship). Triplex Drives are available in 1 cubic meter increments at MCr 0.147 per cubic meter. Mini Craft use the same Thruster Plate technology as other Small Craft for equal performance in/out of planetary gravity. Remember 1G of acceleration is lost to gravity during a liftoff, so a 4G liftoff is 3G of vertical acceleration (2G min. required for planetary landing). Duration has been reduced to 6 hours per 0.1 cubic meter of fuel.

G Tolerance: Mini Craft do not include artificial gravity or inertial compensation which limits the time passengers/crew can spend at greater than 1G. The average person can tolerate 2G for 100 minutes, 3G for 30 minutes and 4G for 10 minutes.

Cockpit and Computer: The size and cost of a cockpit are roughly based on half a Model 1 computer plus a pilot couch with life support. The cockpit combines Avionics, Crew Space, Life Support and Complex Cockpit from Striker with a Model 1 computer stripped down to run only Maneuver (Cap. 1/0).

Weapons: These are unarmed, civilian craft. They lack the surplus power to run weapon systems (even sand casters), sensors able to track targets, and a computer able to run target/launch. Military craft are designed with HG or ST.

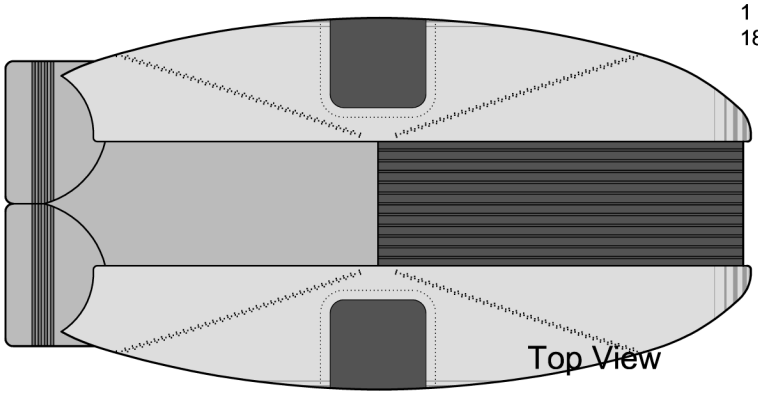
Passengers/Crew: Typically use the 0.5 dTon Small Craft Couch. The Mini Craft Couch is based on ST and the Emergency Low Berth.

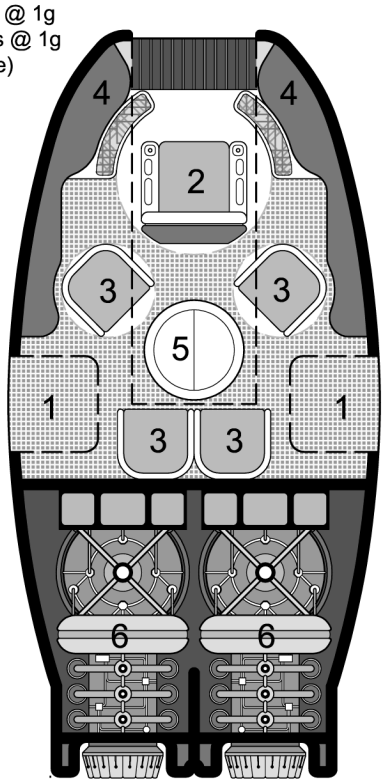


Tonnage:	2.0 dTons. 28 cubic meters
Dimensions:	6.0 m x 3.0 m x 2.0 m
Accommodations:	Pilot, Four Passengers.
Performance:	2G acceleration, 0.04 EP, Agility 2. Liquid hydrogen fuel (0.8 cu. meters, Cr 7) provides 24 hrs of operation.
Special Features:	Streamlined with integral fuel scoops. Able to fit into a 6.0 m x 3.0 m x 3.0 m space (equal to a standard cargo modules) - approx. 4 dTons.
Cost:	Cr 1,763,200 (1 week to build)

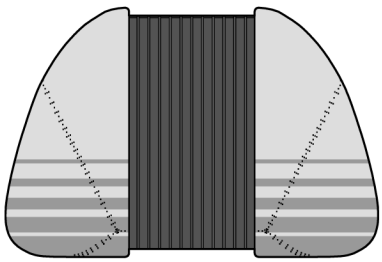
Earth to Orbit:
1000 km LEO: 11 minutes
10,000 km Orbit: 34 minutes
100,000 km Orbit: 1.8 hours
400,000 km (Moon): 3.5 hours

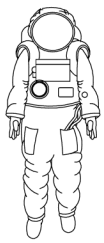
Deep Space Performance:
176,400 km: 100 min @ 2g
1 million km: 5.6 hours @ 1g
18 million km: 24 hours @ 1g
(maximum range)

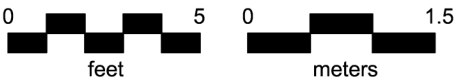




1. Access Hatches.
2. Pilot Control Couch.
3. Passenger Couches.
4. Computer, Avionics and Sensors
5. Docking Hatch.
6. Triplex Drive







The Midget is designed to provide personal transport between a planet's surface and low orbit.

COCKPIT (22 cu. meters): Includes a computer ("maneuver" software only), avionics, flight control, life support, pilot couch, 4 passenger couches. No artificial gravity/inertia compensation (max. 100 min. @ 2G).

ENGINEERING (6 cu. meters): Two Triplex Drives combine the maneuver drive, power plant and fuel into a single unit allowing greater balance between smaller individual components. Uses standard small craft Thruster Plate technology for equal performance in or out of the planetary gravity well.

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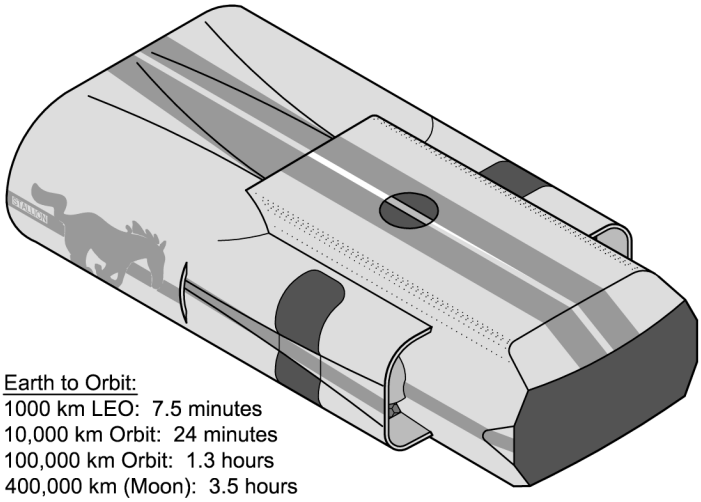
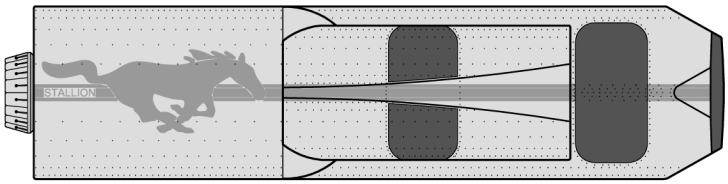
MIDGET CLASS RUNABOUT
2 dTon Small Craft

By: A.T. Pollard	13 NOV 06	Rev. 1



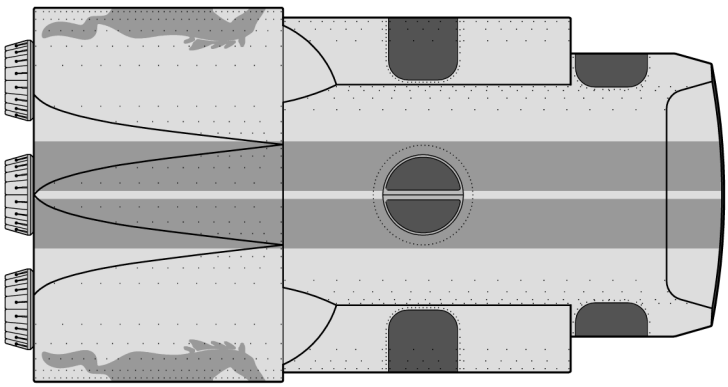
Earth to Orbit:
1000 km LEO: 7.5 minutes
10,000 km Orbit: 24 minutes
100,000 km Orbit: 1.3 hours
400,000 km (Moon): 3.5 hours

Tonnage:	2 dTons. 28 cubic meters
Dimensions:	5.8 m x 3.0 m x 1.5 m
Accommodations:	Pilot, 3 Passengers.
Performance:	3G acceleration, 0.06 EP, Agility 3. Liquid hydrogen fuel (1.2 cu. meters, Cr 10) provides 24 hrs of operation.
Special Features:	Streamlined with integral fuel scoops. Able to fit into a 6.0 m x 3.0 m x 3.0 m space (equal to a standard cargo modules) - approx. 4 dTons.
Cost:	Cr 2,096,800 (1 week to build)

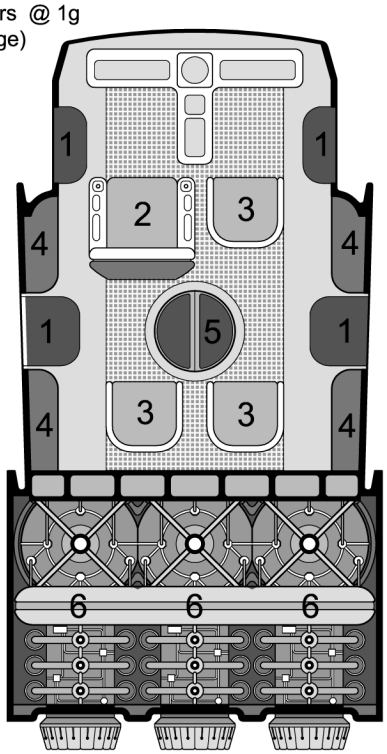


Side View

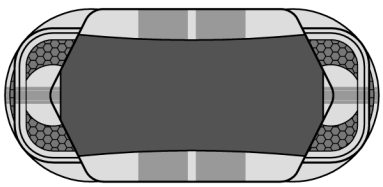
Deep Space Performance:
23,814 km: 30 min @ 3g
176,400 km: 100 min @ 2g
1 million km: 5.6 hours @ 1g
18 million km: 24 hours @ 1g
(maximum range)



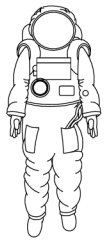
Top View

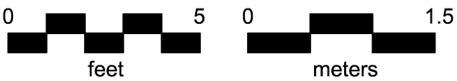


1. Access Hatches.
2. Pilot Control Couch.
3. Passenger Couches.
4. Computer, Avionics and Sensors
5. Docking Hatch (top and bottom)
6. Triplex Drive



Front View





The Stallion is designed to provide fast personal transport between a planet's surface and low orbit.

COCKPIT (19 cu. meters): Includes a computer ("maneuver" software only), avionics, flight control, life support, pilot couch, 3 passenger couches. No artificial gravity/inertia compensation (max. 30 min. @ 3G and 100 min. @ 2G).

ENGINEERING (9 cu. meters): Three Triplex Drives combine the maneuver drive, power plant and fuel into a single unit allowing greater balance between smaller individual components. Uses standard small craft Thruster Plate technology for equal performance in or out of the planetary gravity well.

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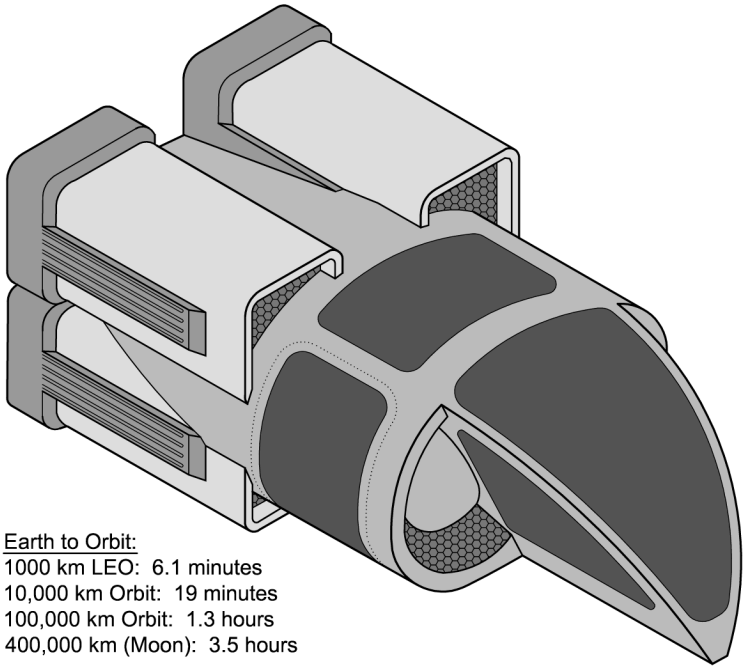
STALLION CLASS RUNABOUT
2 dTon Small Craft

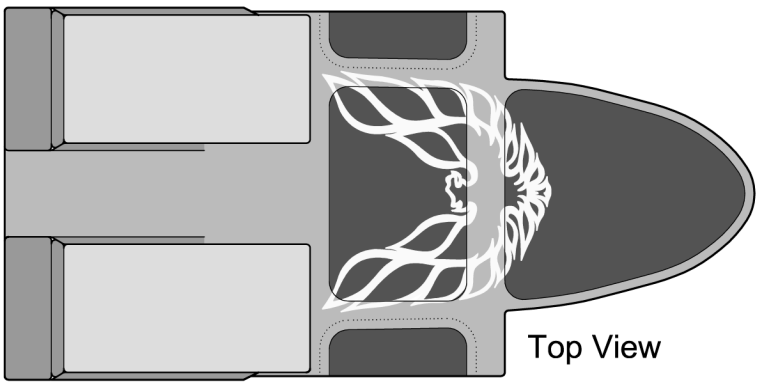
By: A.T. Pollard	13 NOV 06	Rev. 1



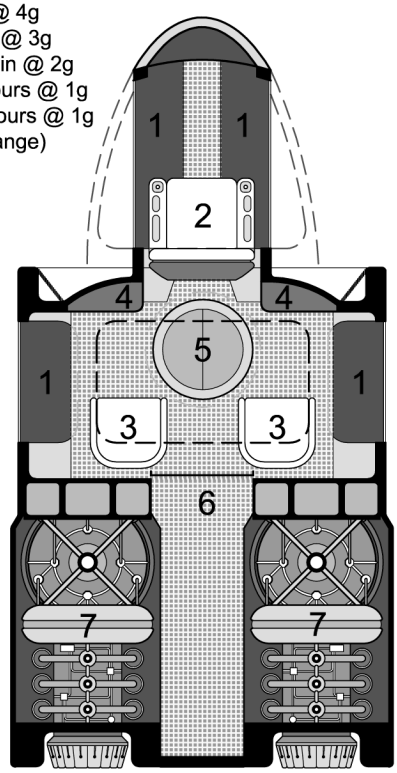
Earth to Orbit:
1000 km LEO: 6.1 minutes
10,000 km Orbit: 19 minutes
100,000 km Orbit: 1.3 hours
400,000 km (Moon): 3.5 hours

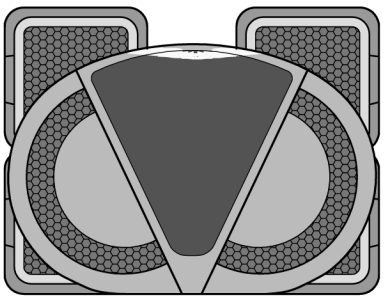
Tonnage:	2.0 dTons. 28 cubic meters
Dimensions:	6.0 m x 3.0 m x 2.3 m
Accommodations:	Pilot, Two Passengers.
Performance:	4G acceleration, 0.08 EP, Agility 4. Liquid hydrogen fuel (1.6 cu. meters, Cr 13) provides 24 hrs of operation.
Special Features:	Streamlined with integral fuel scoops. Able to fit into a 6.0 m x 3.0 m x 3.0 m space (equal to a standard cargo modules) - approx. 4 dTons.
Cost:	Cr 2,430,400 (1 week to build)

Deep Space Performance:
3,528 km: 10 min @ 4g
23,814 km: 30 min @ 3g
176,400 km: 100 min @ 2g
1 million km: 5.6 hours @ 1g
18 million km: 24 hours @ 1g
(maximum range)

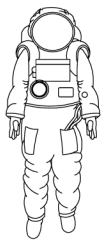


Top View





Front View



1. Access Hatches.
2. Pilot Control Couch.
3. Passenger Couches.
4. Computer, Avionics and Sensors
5. Docking Hatch.
6. Access Crawl Space
7. Triplex Drive

0 5 feet

0 1.5 meters

The Phoenix is designed to provide fast personal transport between a planet's surface and low orbit.

COCKPIT (15 cu. meters): Includes a computer ("maneuver" software only), avionics, flight control, life support, pilot couch, 2 passenger couches. No artificial gravity/inertia compensation (max. 10 min. @ 4G, 30 min. @ 3G and 100 min. @ 2G).

ENGINEERING (13 cu. meters): Four Triplex Drives combine the maneuver drive, power plant and fuel into a single unit allowing greater balance between smaller individual components. Uses standard small craft Thruster Plate technology for equal performance in or out of the planetary gravity well.

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PHOENIX CLASS RUNABOUT
2 dTon Small Craft

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