VEHICLE CONSTRUCTION KIT

Supplement 1: Tiny and Titanic

Very Small and Very Large Vehicles

For *Dungeons & Dragons* 5th Edition

Version 3.0

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This is supplemental material for the Vehicle Construction Kit, which can be found at the Dungeon Masters Guild: http://www.dmsguild.com/product/225337/Vehicle-Construction-Kit

The Vehicle Construction Kit allows you to build many kinds of vehicle for Dungeons & Dragons 5th edition, with rules for vehicular combat. This supplement provides additional rules for very small or very big vessels.

Credits

Version 3.0

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Smaller Vehicles

This chapter allows you to create vehicles with a laden mass between 0.02 tons (40 lbs) to 1 ton (2,000 lbs). Vehicles of mass *Siii* or lighter are unable to include a typical Medium-sized humanoid pilot. However, these categories may be useful for creating vehicles for Tiny creature, for toys, or for robots and other automata.

Body

A smaller vehicle's mass category is prefixed with an *S*. Each smaller category has 1-percent the mass that the Roman numeral normally specifies.

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Laden Weight (tons)	0.02	0.03	0.06	0.1	0.2	0.3	0.6	1
Damage Threshold	—	—	—	—	—	—	—	—
Hit Points	6	7	9	11	15	17	20	25
Dexterity	15	14	14	13	13	12	12	11
Size	S	S	M	M	M	L	L	L

Vehicle Options

Magic Augmentations. The base price of a magic augmentation is 200 gp regardless of size.

Statistics

Size Multiplier to Speed

Air and water vehicles have a reduction in speed as shown in the following table. Land speed is not affected.

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Multiplier (Air)	×0.46	×0.5	×0.56	×0.61	×0.68	×0.73	×0.82	×0.89
Multiplier (Water)	×0.6	×0.63	×0.68	×0.72	×0.77	×0.81	×0.87	×0.93

Stall Speed

This table is used by smaller vehicles with fixed wings or ornithopter wings. Speeds are given in mph. The normal divisors (1.9 for a biplane, 2.4 for a triplane) and reduction for Lift (one-third per Lift Point) apply.

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Stall Speed	15	17	22	25	30	35	45	55
Good Streamlining	16	18	23	27	35	40	50	60
Sleek Streamlining	17	19	24	28	35	40	50	60
Superior Streamlining	17	20	25	30	35	40	55	65
Excellent Streamlining	18	21	26	31	40	45	55	65
Extreme Streamlining	20	22	28	33	40	45	60	70

Components

The cost of *S* components are one-percent that of a component category eight steps larger, as follows:

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
×0.01 cost of	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*

For example, mass *Siv* wooden structure would cost 0.3 gp (since a mass *iv* wooden armor costs 30 gp).

Most other statistics are similarly scaled. For example, a mass *Sii* cargo hold's capacity is 3 lbs (since a mass *ii* cargo hold's capacity is 300 lbs).

Exceptions are noted as follows.

Arm

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Lift Multiplier	×0.02	×0.03	×0.06	×0.1	×0.2	×0.3	×0.6	×1

All smaller heavy arms have a Strength of 5 and a reach of 5 ft.

All smaller precision arms have a Strength of 2 and a reach of 10 ft.

Gasbag

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Cost (Hot Air)	2	3	5	7	10	15	20	30
Cost (Lifting Gas)	7	10	15	20	30	50	70	100
Cost (Vacuum)	70	100	150	200	300	500	700	1,000

Helm

Per the description in *VCK*, all helms of mass *i* or smaller require a workspace or small seat (see below) for the pilot in a seating component.

Legs (Modern)

Power Points	1/5	1/3	1/2	1	2	3	4	6	8
Components mass *Sviii*	1	2	3	4	5	5	6	–	–
Components mass *Svii*	1	2	3	5	7	8	–	–	–
Components mass *Svi* or smaller	1	2	3	5	10	–	–	–	–

Legs (Futuristic)

Power Points	1	2	3	4	5	6	8	9	10–12	14+
Components mass *Sviii*	2	3	3	3	3	4	4	4	5	6
Components mass *Svii*	3	4	4	4	5	5	5	6	6	7
Components mass *Svi*	3	5	7	7	8	8	8	9	9	10
Components mass *Sv*	3	5	8	10	–	–	–	–	–	–
Components mass *Siv* or smaller	3	5	8	10	–	–	–	–	–	–

Paddlewheel

Power Points	1/5	1/3	1/2	1	2
Components mass *Sviii*	2	3	4	7	9
Components mass *Svii* or smaller	2	3	4	8	–

Power Storage, Clockwork

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Winding Time	6 rounds	1 min	2 mins	3 mins	5 mins	10 mins	20 mins	30 mins

Winding Time shows how long it takes one person with Strength 10 to wind one small clockwork component.

Power, Magical (Mana Engine)

Smaller mana engines require more components to generate their rated power. The following table shows the number of components required, and includes the mana engines from *Wondrous Vehicles*.

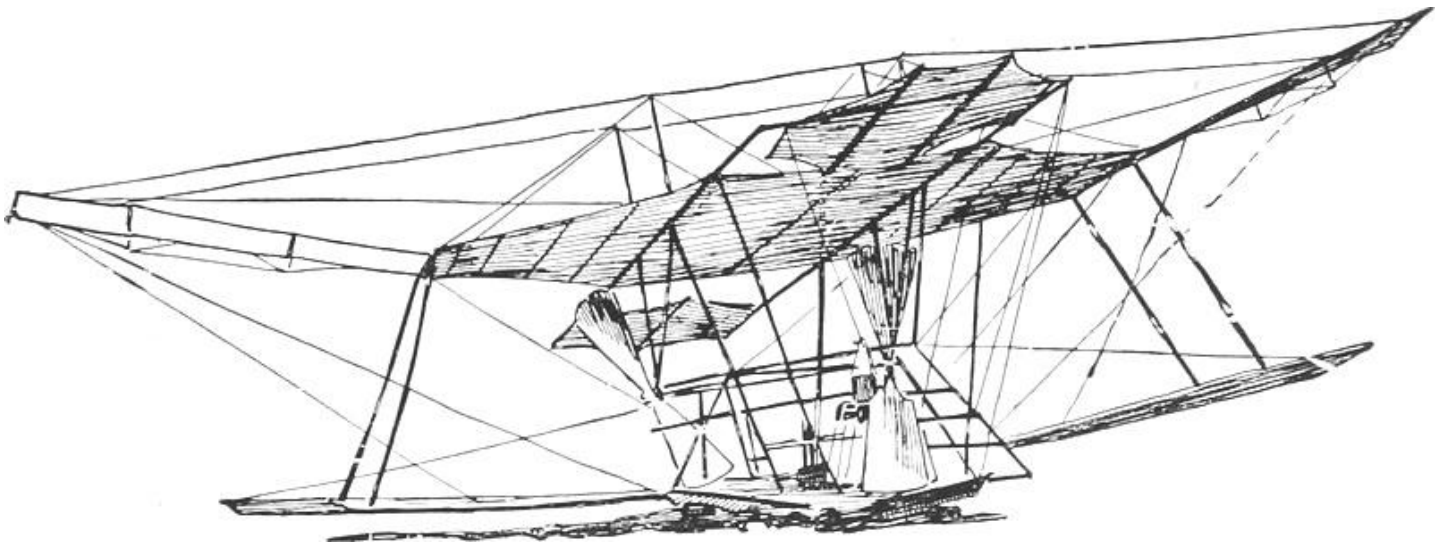
If "1 1/2" components are required, you must use one full component and one 1-step undersized component to generate the rated power.

Mass	*Siv* or smaller	*Sv*	*Svi*	*Svii*	*Sviii*
Components Mana Engine (1 PP)	2	2	2	2	2
Components Mana Engine (2 PP)	2	2	2	2	1 1/2
Components Mana Engine (4 PP)	2	2	2	1 1/2	1
Components Mana Engine (8 PP)	2	2	1 1/2	1	1
Components Mana Engine (16 PP)	2	1 1/2	1	1	1

Power, Steam Engine (Atmospheric Engine)

A smaller atmospheric engine requires more components to generate its rated power, as shown in the following table.

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Components Required for 1/5 PP	5	4	3	3	3	3	3	3



Propellers

An asterisk denotes that a lightweight component may be used for ×0.2 the cost of a normal propeller component.

Industrial Propellers

Power Points	1/3	1/2	1	2	3	4	6	8	10	12	16	20	24	28	32	36	40	44	48
Components mass *Sviii*	*	*	1/3	1/2	1/2	1/2	1/2	1	1	1	1	1	2	2	2	2	2	2	2
Components mass *Svii*	*	*	1/2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3
Components mass *Svi*	*	*	1/2	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3
Components mass *Sv*	*	*	1/2	1	2	2	2	2	2	2	2	2	3	3	3	3	3	3	4
Components mass *Siv*	*	*	1/2	1	2	2	3	3	3	4	4	4	4	4	4	4	–	–	–
Components mass *Siii* or lighter	*	*	1/2	1	2	2	3	3	4	–	–	–	–	–	–	–	–	–	–

Early Modern and Modern Propellers

Power Points	1/3	1/2	1	2	3	4	6	8	10	12	16	20	24	28	32	36	40	44	48
Components mass *Sviii*	*	*	1/3	1/3	1/3	1/3	1/3	1/2	1/2	1/2	1	1	1	1	1	1	2	2	2
Components mass *Svii*	*	*	1/3	1/2	1/2	1/2	1/2	1/2	1	1	1	1	1	1	1	2	2	2	2
Components mass *Svi*	*	*	1/3	1/2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Components mass *Sv*	*	*	1/3	1/2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
Components mass *Siv*	*	*	1/3	1/2	1	1	2	2	2	2	3	3	3	3	3	3	3	3	3
Components mass *Siii*	*	*	1/3	1/2	1	1	2	2	3	3	4	4	4	4	4	4	4	4	–
Components mass *Sii* or *Si*	*	*	1/3	1/2	1	1	2	2	3	3	4	–	–	–	–	–	–	–	–

Sail

On a smaller vehicle, the crew requirement for any number of sails of any type is 1.

Screw Propeller (Industrial)

Power Points	1/5	1/3	1/2	1	2	3	4	5	6
Components mass *Sviii*	1	1	2	3	4	4	–	–	–
Components mass *Svii* or lighter	1	1	2	3	4	–	–	–	–

Screw Propeller (Early Modern)

Power Points	1/5	1/3	1/2	1	2	3	4	5	6	7	8	10	12
Components mass *Sviii*	1/3	1	1	2	2	2	3	3	3	4	4	–	–
Components mass *Svii*	1/3	1	1	2	3	3	3	4	4	4	–	–	–
Components mass *Svi* or lighter	1/3	1	1	2	4	–	–	–	–	–	–	–	–

Screw Propeller (Modern)

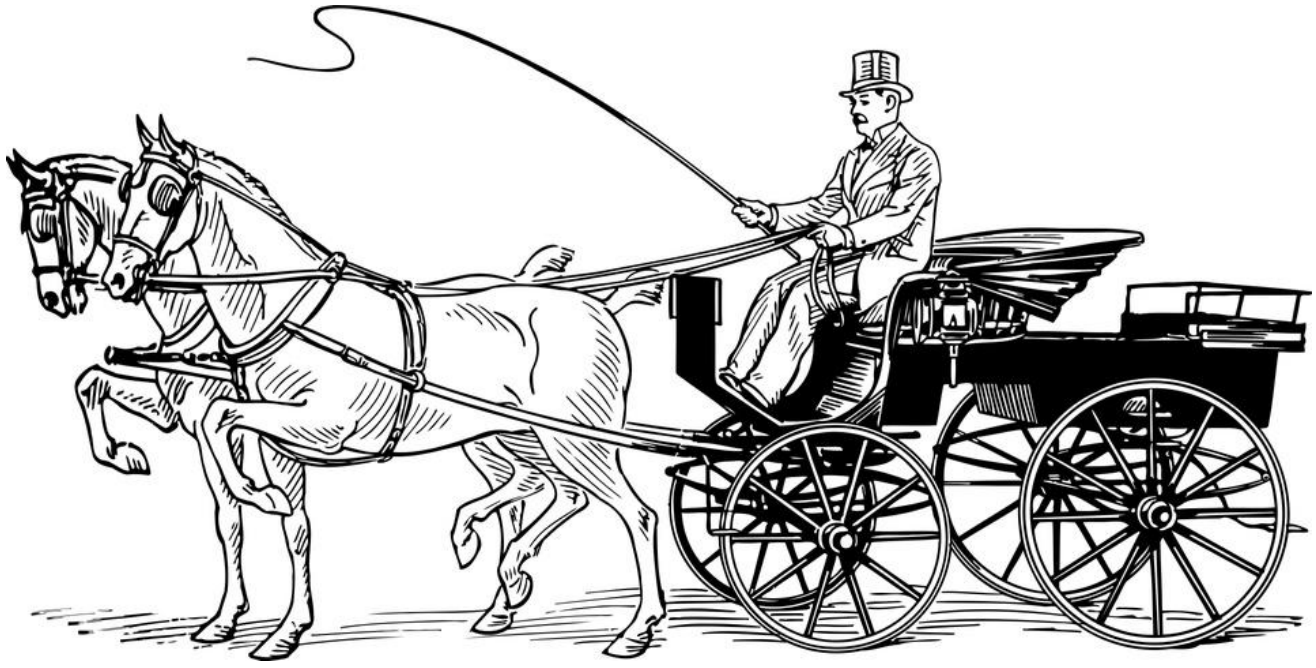
Power Points	3	6	12	15	18	21	24	27	30	36	42	48	54	60
Components mass *Sviii*	1/2	1	1	2	2	2	2	2	2	3	3	4	4	4
Components mass *Svii*	1	1	1	2	2	2	2	2	3	3	3	4	4	4
Components mass *Svi*	1	1	2	2	2	2	2	3	3	3	3	4	4	–
Components mass *Sv*	1	2	2	2	3	3	3	3	3	4	4	4	–	–
Components mass *Siv*	1	2	3	3	4	4	4	4	4	–	–	–	–	–
Components mass *Siii* or lighter	1	2	4	–	–	–	–	–	–	–	–	–	–	–

Seating

Small seating components of mass *i* smaller can hold a *small seat*. A small seat has a restricted weight limit as shown in the table below. It might represent a confined enclosed space or a saddle.

For example, a form-fitting mass *Sv* mechanical suit designed for a 120-lb elf would require 10 small seat components.

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*	*i*
Cost	0.01	0.1	0.2	0.3	0.6	1	2	3	6
Occupancy	1.2 lbs	1.8 lbs	3.6 lbs	6 lbs	12 lbs	18 lbs	36 lbs	60 lbs	120 lbs



Structure

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Extra Hit Points Multiplier	×0.7	×0.8	×1	×1.2	×1.5	×1.7	×2	×2.5

Weapon, Melee

All small melee siege weapons require 1 crew.

Mass	*Si*	*Sii*	*Siii*	*Siv*	*Sv*	*Svi*	*Svii*	*Sviii*
Damage	2	2.5	3	3.5	4.5	5.5	6.5	8
Reach	5 ft.	5 ft.	5 ft.	5 ft.	5 ft.	5 ft.	5 ft.	5 ft.
Long Reach	–	–	–	–	10 ft.	10 ft.	10 ft.	10 ft.
Grapple Size	–	–	–	–	T	T	T	T

Wheel Drivetrain (Renaissance)

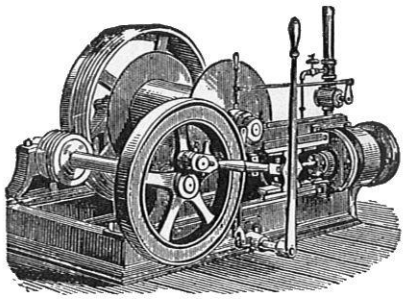
Power Points	1/5	1/3	1/2	1	2	3	4
Components mass *Sviii*	1	2	3	5	6	7	8
Components mass *Svii*	1	2	3	5	8	9	10
Components mass *Svi* or lighter	1	2	3	5	10	–	–

Wheel Drivetrain (Industrial)

Power Points	1/5	1/3	1/2	1	2	3	4	5	6	7	8
Components mass *Sviii*	1/2	1	2	2	3	3	4	4	5	5	6
Components mass *Svii*	1/2	1	2	3	4	5	5	6	6	7	7
Components mass *Svi*	1/2	1	2	3	5	7	8	8	9	9	10
Components mass *Sv* or lighter	1	1	2	3	5	8	10	–	–	–	–

Wheel Drivetrain (Early Modern)

Power Points	1/5	1/3	1/2	1	2	3	4	5	6	7	8	10	12	14	16
Components mass *Sviii*	1/3	1/2	1	1	2	2	2	2	3	3	3	4	4	5	5
Components mass *Svii*	1/3	1/2	1	2	2	2	3	3	3	3	4	4	5	5	6
Components mass *Svi*	1/3	1/2	1	2	3	4	4	4	5	5	5	6	6	7	7
Components mass *Sv*	1/3	1/2	1	2	3	4	5	6	6	6	6	7	7	8	8
Components mass *Siv* or lighter	1/3	1/2	1	2	3	4	5	7	8	9	10	–	–	–	–



Wing, Rotary, Lifting Rotor

Power Points	4	6	8	10	12	14	16
Components mass *Sviii*	2	2	2	3	3	3	3
Components mass *Svii*	3	3	3	3	4	4	4
Components mass *Svi*	4	4	–	–	–	–	–
Components mass *Sv* or lighter	–	–	–	–	–	–	–

Wing, Rotary (Early Modern)

Power Points	4	6	8	10	12	14	16	18	20	24	28	32
Components mass *Sviii*	1	1	1	2	2	2	2	2	2	2	3	3
Components mass *Svii*	1	2	2	2	2	2	2	2	2	2	3	3
Components mass *Svi*	2	2	3	3	3	3	3	3	3	3	4	4
Components mass *Sv*	3	3	3	4	4	4	4	4	4	4	–	–
Components mass *Siv* or lighter	–	–	–	–	–	–	–	–	–	–	–	–

Wing, Rotary (Modern)

Power Points	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60+
Components mass *Sviii*	1/2	1	1	1	1	2	2	2	2	2	2	2	3	3	3
Components mass *Svii*	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3
Components mass *Svi*	2	2	2	2	2	2	2	3	3	3	3	3	3	3	4
Components mass *Sv*	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4
Components mass *Siv*	2	3	4	4	4	4	4	4	4	–	–	–	–	–	–
Components mass *Siii* or lighter	2	3	–	–	–	–	–	–	–	–	–	–	–	–	–

Wing, Ornithopter (Modern)

Power Points	4	5	6	7	8	10	12	14	16
Components mass *Sviii*	1	1	2	2	2	2	3	3	4
Components mass *Svii*	1	2	2	2	2	3	3	3	4
Components mass *Svi*	2	2	2	2	2	3	3	4	4
Components mass *Sv*	2	2	2	2	3	3	3	4	4
Components mass *Siv*	2	2	3	3	3	4	4	–	–
Components mass *Siii* or lighter	2	2	3	3	3	4	–	–	–

Wing, Ornithopter (Futuristic)

Power Points	4	6	8	10	12	14	16	18	20	24	28	32
Components mass *Sviii*	1/2	1	1	1	2	2	2	2	2	3	3	3
Components mass *Svii*	1/2	1	1	1	2	2	2	2	2	3	3	4
Components mass *Svi*	1	1	1	2	2	2	2	2	3	3	3	4
Components mass *Sv*	1	1	2	2	2	2	2	2	3	3	3	4
Components mass *Siv*	1	2	2	2	2	2	3	3	3	3	4	4
Components mass *Siii*	1	2	2	2	3	3	3	3	4	4	4	–
Components mass *Sii* or lighter	1	2	2	2	3	3	3	4	4	–	–	–

Tiny Crew

Vehicles normally assume Small or Medium-sized crew and passengers. A vehicle can be designed for Tiny creatures.

Components

The crew, passenger and seat columns of the component tables are shifted one or more steps to the left. Since crew size is established on a component-by-component basis, a vehicle can mix-and-match (for example, a vehicle with a helm for Tiny creatures and passenger seating for Small and Medium passengers.) A component designed for Tiny creatures cannot be occupied by larger creatures.

Three steps are recommended for creature such as sprites, pixies and imps – that is, creatures with approximately 1/5 the mass of a Medium humanoid. Thus components for these Tiny creatures use the following values:

	Sviii	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	*xi*
Workspace	0	0	0	1	1	1	1	1	2	2	3	5
Crew (Oars)	2	3	6	10	20	30	60	100	200	300	600	1,000
Crew (1 Sail Components)	1	1	1	1	2	2	2	2	3	3	4	4
Crew (2 Sail Components)	1	2	2	2	2	3	3	4	4	5	6	6
Crew (3 Sail Components)	2	2	2	2	3	3	4	4	5	6	7	8
Crew (Siege melee)	1	2	4	6	12	20	40	60	120	200	400	600
Extra Controls (Helm)	–	–	+1	+1	+2	+2	+3	+3	+4	+5	+7	+9
Quarters Occupancy	–	1	2	3	6	10	20	30	60	100	200	300
Seating Occupancy	2	3	6	10	20	30	60	100	200	300	600	1,000

Notes

- This shift does not effect other columns such as cost.
- 1 ton of steerage cargo uses 10 occupancies in quarters components (instead of 2).
- 1 ton of steerage cargo uses 40 occupancies in seating components (instead of 8).
- Extra controls in helms designed for Tiny creatures cost 150 gp each (instead of 500 gp)
- A helm component of mass *i* or mass *ii* does not require an adjacent seating component for the pilot.

Supplies

One person-day of supplies supports four Tiny creatures. Thus, if the crew is exclusively Tiny, 1 ton of food and drink supports the crew for 1,200 Tiny-person-days. (On smaller vehicles, 100 lbs of food and drink supports 60 Tiny-person-days.) The cost is unchanged.

Artillery Weapons

It takes more Tiny creatures to operate a siege engine compared to Small or Medium creatures. Each Tiny creature is considered to be one-third a crewmember for the purpose of crewing an artillery weapon component.

Immense Vehicles

The Body table in the Vehicle Construction Kit can be expanded to represent the very largest warships or town-sized leviathans.

The category numeral for massive vehicles is prefixed with an *C*, to denote that the mass of that category is 100 times normal. For example, mass category *Cv* is 100 times heavier than mass category *v*.

For comparison, a ship of the line such as HMS Victory is mass *Civ*; modern-day Bagger excavators are mass *Cviii*; World War II-era battleships are mass *Cx*.

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Laden Weight (tons)	2,000	3,000	6,000	10,000	20,000	30,000
Damage Threshold	30	35	45	55	70	80
Hit Points	315	360	455	540	680	775
Dexterity	5	4	4	3	3	2

Statistics

If the vehicle qualifies for drag and streamlining, the vehicle has an increase in speed as shown in the following table.

Size Bonus to Speed

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Multiplier (Air)	×3.2	×3.4	×3.8	×4.1	×4.6	×5
Multiplier (Water)	×2.2	×2.3	×2.4	×2.6	×2.8	×2.9

Stall Speed

The following table shows the stall speeds for immense vehicles with fixed wings or ornithopter wings. Values are given in mph. The normal divisors (1.9 for a biplane, 2.4 for a triplane) and reduction for Lift (one-third per Lift Point) apply.

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Stall Speed	700	800	1,000	1,200	1,500	1,700
Good Streamlining	730	830	1,050	1,250	1,570	1,800
Sleek Streamlining	760	870	1,100	1,310	1,650	1,900
Superior Streamlining	800	910	1,150	1,370	1,720	1,970
Excellent Streamlining	830	950	1,200	1,430	1,800	2,060
Extreme Streamlining	900	1,030	1,300	1,550	2,000	2,230

Immense Components

Cost and Values

The cost of *C* components are 100 times that of a component eight steps smaller, as follows:

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
×100 cost of	*v*	*vi*	*vii*	*viii*	*ix*	*x*

Most values of immense components are similarly scaled. For example, an artillery weapon component for a mass *Cx* vehicle comprised of cannons costs 750,000 gp, requires 3,000 crew and holds 300 cannons.

Exceptions that do not fall into the "times 100" rule are noted below.

Crew

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Workspace	2	3	6	10	20	30
Crew (1 Sail Component)	15	20	25	35	45	60
Crew (2 Sail Components)	20	25	35	35	65	80
Crew (3 Sail Components)	25	30	45	60	80	100

Arm

All immense arms have a Strength score of 30. The table below shows the lift multiplier for all types of arm, and the epic multiplier for heavy and precision arms.

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Lift Multiplier	×32	×42	×52	×64	×84	×104
Epic Lift (Heavy)	×3	×4	×6	×8	×13	×16
Reach (Heavy)	25	25	25	30	30	30
Epic Lift (Precision)	–	×2	×3	×4	×5	×6
Reach (Precision)	50	50	50	60	60	60

Atrium

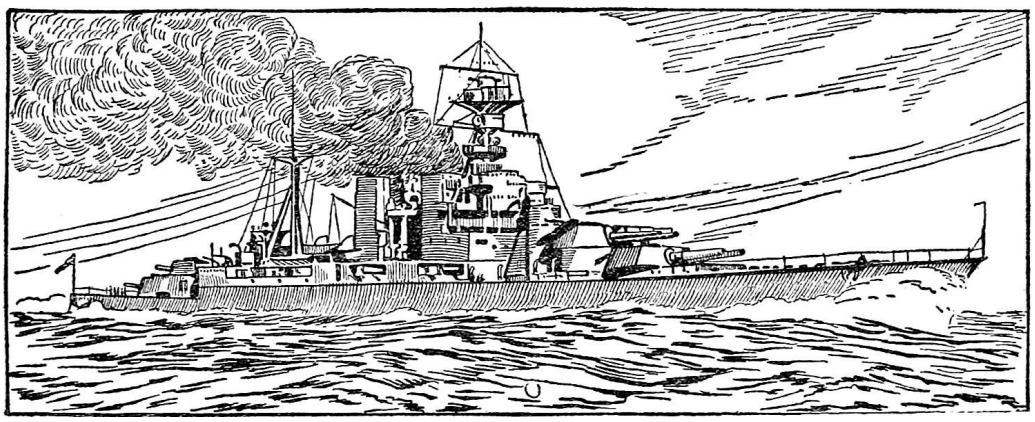
	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Cost (Atrium)	2,000	2,500	3,500	4,500	6,000	7,500
Capacity (Atrium)	200	250	350	450	600	750

Gasbag

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Cost (Hot Air)	5K	7K	10K	15K	20K	30K
Cost (Lifting Gas)	15K	20K	30K	50K	70K	100K
Cost (Vacuum)	150K	200K	300K	500K	700K	1M

Helm

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Extra Controls (Helm)	+4	+5	+7	+9	+11	+14



Structure

Immense vehicles use the following multipliers when calculating the extra hit points granted by armor components.

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Extra Hit Point Multiplier	×31	×36	×45	×53	×67	×77

Weapon, Melee

	Cv	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Damage	101	116	146	173	217	249
Reach	25 ft.	25 ft.	25 ft.	30 ft.	30 ft.	30 ft.
Long reach	50 ft.	50 ft.	50 ft.	60 ft.	60 ft.	60 ft.
Grapple/Swallow	G	G	G	C	C	C

Grapple/Swallow. "G" denotes a Gargantuan object or creature; "C" denotes a Colossal object (see below).

Damaging Immense Vehicles

Immense vehicles have so many hit points that it is nearly impossible to disable a component. However, it is common for immense vehicles to have slots that are comprised of undersized components. In this case, a lesser amount of damage may disable or destroy an undersized component.

Normally, it takes damage equal to 10-percent of the vehicle's maximum hit points to disable a full component. If a slot is comprised of components that are four-steps undersized (that is, 10 components to a slot) it takes 5-percent of the vehicle's maximum hit points to disable one of the components: roll a d10 to determine which.

If damage is equal to 25-percent of the vehicle's maximum hit points, two of the components are destroyed (and all the others are disabled as normal).

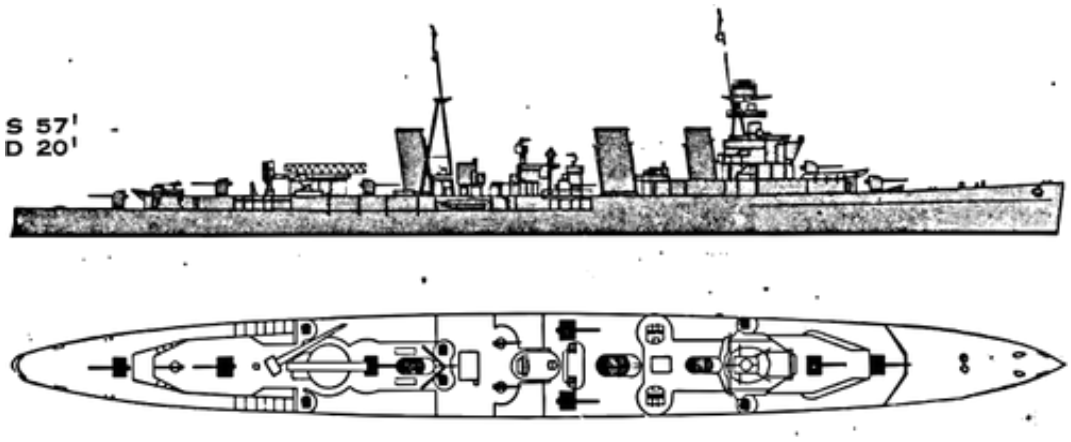
Example. The five-masted schooner has 1,500 hit points. It would take 150 damage to disable one slot.

If the slot 18 is struck (which is comprised of ten undersized components), it would take 75 damage to disable one of those components.

Larger Size Categories

The largest size category in D&D 5th edition is Gargantuan. When playing with vehicles, this is fine for most cases. However, if the campaign includes battles between immense warships three additional size categories – Colossal (c), Titanic (T), and Leviathanic (L) – can be used.

	x	*xi*	*xii*	*Cv*	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Size	C	C	C	T	T	T	L	L	L
Collision Damage	54 (12d8)	63 (14d8)	76 (17d8)	99 (18d10)	115 (21d10)	143 (26d10)	169 (26d12)	214 (33d12)	247 (38d12)



Appendix A: Siege Engines

The following weapons are adapted from *Vehicle Construction Kit Supplement 4: Artillery* and *Vehicle Construction Kit Supplement 5: Catapults*.

Small Siege Engines

Mass	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	*xi*	*xii*
Weapons	1	1*	3	5	10	15	30	50	100	150	300	500
Cost (Bombardelle)	30	30	100	150	300	500	1,000	1,500	3,000	5,000	10,000	15,000
Cost (Siege Crossbow)	45	45	150	225	450	750	1,500	2,250	4,500	7,500	15,000	22,500
Crew	1	1	3	5	10	15	30	50	100	150	300	500

Small siege engines take 1 round to load, aim and fire. In other words, they are considered to be weapons with the loading property: it takes a bonus action to load the weapon and an action to aim and fire it. They can be detached from their mount and used as a martial ranged weapon. When used in this way they have the heavy property and the attack is made with disadvantage.

A small siege engine is a Small objects with 5 hit points, and has damage immunity to poison and psychic damage. The bombardelle has AC 18 and the siege crossbow has AC 15.

Bombardelle, 4-pounder

A bombardelle is an early form of cannon that fires a 4-lb stone ball with a charge of serpentine powder.

Bombardelle Shot. *Ranged Weapon Attack:* +5 to hit, range 150/600 ft., one target. *Hit:* 16 (3d10) bludgeoning damage.

Ammunition. The component can hold 15 shots per weapon. Each stone ball and powder charge costs 5 gp.

Siege Crossbow, Light

The oxybeles, or siege crossbow, is a flexion catapult that shoots bolts.

Siege Crossbow Bolt. *Ranged Weapon Attack:* +6 to hit, range 100/400 ft., one target. *Hit:* 6 (1d12) piercing damage.

Ammunition. The component can hold 120 bolts per weapon. Each bolt costs 3 sp.

Immense Siege Engines

Mass	*Cv*	*Cvi*	*Cvii*	*Cviii*	*Cix*	*Cx*
Cost	30,000	30,000	100,000	150,000	300,000	500,000
Weapons	1	1*	3	5	10	15
Crew	75	75*	225	375	750	1,125

An immense siege angine is a Gargantuan object with 250 hit points, and has damage immunity to poison and psychic damage. The heavy trebuchet has an AC of 15.

Trebuchet, Heavy

A heavy counterweight trebuchet throws a 200-lb stone in a high arc, so it can hit targets behind cover. The 8-ton counterweight must then be raised by a team working a treadmill.

It takes 75 rounds (or 8 minutes) to load, aim and fire the heavy trebuchet.

Heavy Trebuchet Stone. *Ranged Weapon Attack:* +5 to hit, range 300/1,200 ft. (can't hit targets within 60 feet of it), one target. *Hit:* 71 (13d10) bludgeoning damage.

Ammunition. The component can hold 300 stones per weapon. Stones can be gathered from the environment or purchased for 4 gp each.

Appendix B: Example Vehicles

All the example vehicles presented below have damage immunity to poison and psychic damage.

Imp Flyer

This fiendish contraption resembles a four-winged bat with a long tail, powered by a glowing chunk of hellstone. Mechanically-minded imps use flyers for transport and to harass enemies. Two helms allows one imp to concentrate on flying while the other operates the tail. Up to six other imps can hold on to railings along the sides of the fuselage.

An imp at the rudimentary helm can use a piloting maneuver to make the following attack.

Lashing tail. *Melee weapon attack:* +7 to hit, reach 5 ft., one target. *Hit:* 10 (3d6) piercing damage.

The imp will usually need to take the Ready action to perform this attack due to the speed of the flyer.

Design Notes: Mass *Svii* body (0.6 tons laden). No facing. Speed is calculated 72 mph (base) ×0.8 (size penalty). Stall speed is calculated 45 mph (base, no streamlining) minus (45/3)×0.1 (from ornithopter wing lift). The ornithopter wings and power melee weapon have an ×8 anachronistic modifier to cost.

Imp Flyer

Very rare large object

Armor Class: 16
Hit Points: 90
Speed: *Fly* 57 mph (500 ft.); *stall speed* 43 mph (380 ft.)
Dexterity: 17 (+3)
Cargo: —
Crew: 2 imp pilots, 6 imp passengers
Cost: 41,540 gp

Slot	Components
1	**Iron structure** (18 SP)
2	**Helm** (for pilot)
3	**Rudimentary Helm** (for weapon operator)
4	**Seating** (2 × 20 lb. small seats)
5–6	**Maneuvering Systems** (+2 Dexterity)
7–9	**Magic Engine** (+8 PP)
10–11	**Ornithopter wings** (-8 PP)
12–16	**Melee weapon, powered** (Lashing tail)
17	**Iron structure** (18 SP)
18–20	**Seating** (6 × 20 lb. small seats)

Steel Battlesuit

Resembling a form-fitting steel suit of armor, this battlesuit provides the wearer with an impressive mobility and a wrist-mounted power saw for dismantling obstructions. The maximum weight of the pilot is 180 lbs. The pilot can use a piloting maneuver to make the following attack.

Wrist Powersaw. *Melee weapon attack:* +6 to hit, reach 5 ft., one target. *Hit:* 4 (1d8) slashing damage. The wrist saw deals double damage against objects.

Design Notes: Mass *Svi* body (0.3 ton laden). No facing. A 1-Power Point magic engine requires 2 components at mass *Sii*, so 1 such component provides 0.5 Power Points. Modern legs require 3 components to be driven by 0.5 Power Points. The melee weapon and legs have an ×8 anachronistic modifier to cost.

Steel Battlesuit

Very rare medium object

Armor Class: 19
Hit Points: 150
Speed: *Legs* 50 ft. The pilot may *dash*.
Dexterity: 15 (+2)
Crew and Passengers: 1 pilot
Cost: 21,840 gp

Slot	Components
1	**Helm**
2–11	**Small seat** (180 lbs)
12–13	**Melee Weapon** (wrist powersaw)
14–16	**Steel structure**
17	**Magic Engine** (+0.5 PP)
18–20	**Legs** (-0.5 PP, superior modern biped)

Mustela Fortune

This patrol boat was crafted by a pirate family of sapient weasels. It has a thin beaten steel hull, a fore-and-aft rig, and an adorable tiny ship's wheel. The front of the unfenced deck holds a 4-pounder bombardelle. Each weapon requires three Tiny creatures to operate. The ship carries 25 4-pounder shots, costing 20 gp. The total powder charge cost is 80 gp.

The quarters holds 30 days-worth of supplies for 3 Tiny creatures, costing 60 gp.

Design Notes: Mass *Sviii* body (1 ton laden)

Mustela Fortune

Large object

Armor Class: 19
Hit Points: 80
Speed: *Maximum:* 6 mph; *following*: 4.7 mph; *reaching*: 5.4 mph; *beating windward:* 1.8 mph
Dexterity: 13 (+2)
Cargo: 550 lbs
Crew: 3 Tiny creatures
Cost: 564 gp

Slot	Components
1	**Steel plating** (front) **Shot locker** (10 shots)
2–3	**Artillery** (4-lb bombardelle; 15 shots)
4	**Sail** (lateen)
5–8	**Cargo hold** (400 lbs)
9	**Steel plating** (center) **Magazine** (50 lb)
10–15	**Quarters** (bunks for 3 Tiny)
16	**Helm** (rudimentary)
17	**Seating** (2 Tiny workspaces for helmsperson)
18	**Sail** (lateen)
19	**Cargo hold** (100 lbs)
10	**Steel plating** (rear) **Cargo hold** (50 lb)

Propcycle (Industrial)

The propcycle is little more than a cycle seat with a soarwood frame, mounted on a pair of canvas wings. A set of pedals drives a rear-mounted propeller. It can be piloted by a human child, or demihuman such as an elf or halfling, of weight no greater than 100 lbs. With a minimum Strength of 10, the propcycle flies at 17 mph. Otherwise, with a minimum Strength of 5, the propcycle flies at 13 mph (so must rely on updrafts).

The propcycle is most commonly found in valleys and shorelines where it benefit from an updraft.

Design Notes: Mass *Siv* body (0.1 tons laden). No facing. Speed is calculated 38 mph ×0.73 (monoplane drag) ×0.61 (size).

Propcycle

Common medium object (early modern)

Armor Class: 12
Hit Points: 17
Speed: 17 mph; *Stall:* 16 mph or 8 mph in updraft
Dexterity: 14 (+2)
Crew and Passengers: 1 pilot
Cost: 35 gp 5 sp

Slot	Components
1	**Helm**
2–18	**Small Seat** (100 lbs) *Fixed wings (monoplane)*
19	**Soarwood structure** (6 SP) *Small wheel*
20	**Muscle engine** (+1/3 PP, 10 effort) *Propeller (-1/3)*

Diving Bell

This bell-shaped iron vessel can be lowered into the ocean by a chain from a gantry. The winch team can lower and raise the diving bell at a rate of 10 feet per turn. The diving bell has an open floor, and can be used to explore the ocean bed, or to recover salvage from wrecked ships. The crew of three have air for 1 hour.

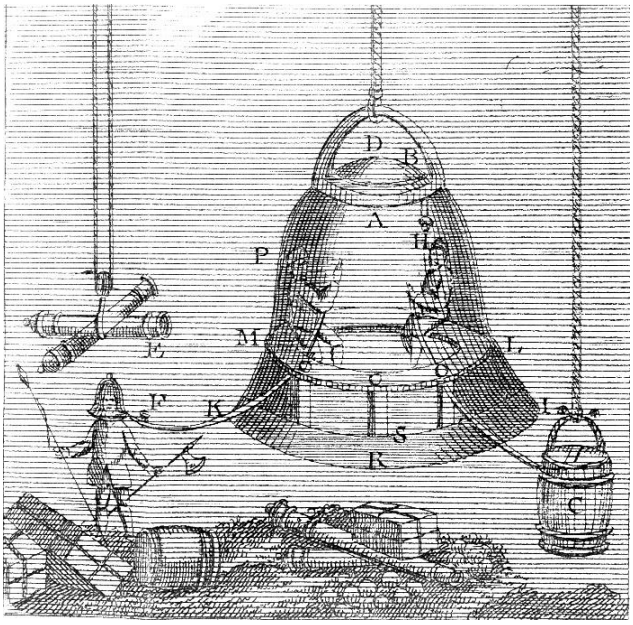
Design Notes: Mass *Sviii* body. No facing. Sealed.

Diving Bell

Large object

Armor Class: 19
Hit Points: 430
Speed: 0 ft., *Depth* 110 ft.
Dexterity: –
Cargo: 200 lb
Crew and Passengers: 2 passengers
Cost: 110 gp

Slot	Components
1–12	**Seating** (3 utilitarian)
13–18	**Iron structure**
19–20	**Cargo hold** (200 lb)



Clockwork Miniature Train

A brass clockwork automaton, the size of a dog, that follows a specially designed track around the mansion and garden of its creator. It takes 1 minute to wind the mechanism with a ratchet. The train then moves continuously until the clockwork winds down.

At key points in the mansion, the track slows the train down to 1 mph allowing servants to load and unload cargo – usually plates of confections and gifts to delight guests, or to deliver parts to the inventor's workshop. It can safely tow one miniature brass trailer.

Design Notes: Mass *Si* body (40 lbs laden). No helm.

Clockwork Miniature Train

Small object (renaissance)

Armor Class: 18
Hit Points: 65
Speed: *maximum* 4.5 mph (40 ft); *towing* 3 mph; *offroad* 1 mph (10 ft.)
Endurance: 10 minutes
Dexterity: 12 (+1)
Crew and Passengers: None
Cargo: 20 lbs
Cost: 15 gp

Slot	Components
1–6	**Brass structure**
7–16	**Cargo hold** (20 lbs)
17–18	**Clockwork** (1/5 PP for 10 minutes)
19	**Wheels, standard**
20	**Wheel drivetrain** (low-gear)

Miniature Brass Trailer

Small object

Armor Class: 15
Hit Points: 30
Cargo: 34 lbs
Cost: 2 gp 5 sp

Slot	Components
1–2	**Brass structure**
3–19	**Cargo hold** (32 lbs)
20	**Wheels, standard**

Five-Masted Sailing Ship

A steel-hulled cargo ship with five masts with full-rigged sails. Its hull is 440 feet long, with a 50-foot beam. It has two steel decks, a poop and forecastle deck, and a raised midship deck. The midship deck holds the crew acommodations and chart room, with the helm (a double rudder wheel) mounted atop. An emergency helm is mounted near the stern.

Two donkey steam engines are installed in a small deckhouse behind the foremast, driving the steam winches and steam rudder . Four lifeboats on davits are mounted above the main deck before the aftmost mast.

Design Notes: Mass *Cviii* body. Powered sails (see *VCK: Revolutionary Vehicles*).

Quarters. The quarters are a lightweight component in slot 11 containing: 4 cabins, 40 bunks, sailmaker's workshop, saloon (for 10), brig (for 4), steerage cargo (8 tons)

Berth. The berth is a lightweight component in slot 20 containing: 4 lifeboats (mass *iii*)

Minimum crew. 6 (sails), 2 (quarters), 2 (helm)

Watch crew (3 watches total). 12 (sails), 4 (quarters), 4 (helm)

Other crew. Captain, sailmaker, engineer

Five-Masted Sailing Ship

Gargantuan object (industrial)

Armor Class: 15
Hit Points: 3,000
Damage Threshold: 55
Speed: *Maximum*: 22 mph; *reaching* 17 mph; *beating windward* 4 mph
Dexterity: 4 (-3)
Cargo: 7,000 tons
Crew: 33
Cost: 5,111,000 gp

Slot	Components
1	**Steel structure** **Cargo hold** (250 tons)
2	**Sails** (full rig, aux power)
3–8	**Cargo hold** (3,000 tons)
9	**Steel structure** **Cargo hold** (250 tons)
10	**Sails** (full rig, aux power)
11	**Helm** (ship's wheel) *Quarters*
12–18	**Cargo hold** (3,500 tons)
19	**Steel structure** **Helm** (ship's wheel)
20	**Sails** (full rig, aux power) *Berth*

Landship

The landship is an immense iron shell resembling a cross between a tortoise and a slug, 200 feet long. It rumbles fowards on 18 dreadnaught wheels, cannons poking from gun ports on each side. The presence of a landship on the battlefield is enough to scatter the enemy, as it is impervious to musket fire and most artillery.

It takes 12 hours to build up the heat and pressure in the atmospheric engine.

Minimum Crew: 1 driver, 12 stokers, 12 steam engineers, 2 drivetrain engineers, 2 helm crew. In battle, the landship usually carries twice this number.

Other Crew: 400 gunners, 1 commander, 4 officers

Design Notes: Mass *Cv* body.

Land Ironclad

Gargantuan object (renaissance)

Armor Class: 19
Hit Points: 3,150
Damage Threshold: 30
Speed: 5 mph (30 ft.); ignores difficult terrain caused by mud, snow or sand
Endurance: *Coal:* 2 hours (firebox), 13 hours (bunker)
Wood: 40 mins (firebox), 4 hours (bunker)
Dexterity: 5 (-3)
Crew: 463
Cost: 582,000 gp

Slot	Components
1–2	**Iron structure** (front)
3	**Helm**
4	**Dreadnaught wheels**
5	**Bunker** (100 tons)
6	**Crew deck** (seating: 580 utilitarian, 10 standard)
7	**10 x cannons** (left, gun ports)
8	**10 x cannons** (right, gun ports)
9	**Dreadnaught wheels**
10–11	**Iron structure** (centre)
12–17	**Atmospheric Engine** (+3/5 PP)
18	**Wheel drivetrain** (low-gear)
19	**Bunker** (100 tons)
20	**Iron structure** (rear)

Flying Fortress

The mere sight of a flying fortress is enough to make armies scatter and castles surrender. Attacking with near impunity, the fortress boasts two forward-facing heavy trebuchet for bringing down walls, a ring of trebuchet to ward off aerial foes, and an underside array of ballista for cutting down troops on the ground.

The elemental engine contains one hundred captured CR 10 fire elementals, powering a flight enhancement threaded throughout the thick stone walls.

Minimum Crew. 1 (pilot), 10 (helm), 10 (maneuvering system), 10 (elemental engine), 48 (quarters), 2 (berth)

Watch Crew. (3 watches total) 2 (pilots), 20 (helm), 20 (maneuvering system), 20 (elemental engine), 96 (quarters), 4 (berth)

Other Crew. 3 extra pilots, 200 ballistae crew, 300 trebuchet crew, 150 heavy trebuchet crew, 18 artisans, 2 doctors, 2 clerics, 10 gardeners, 1 commander, 10 officers, 1 librarian. Additional crew might include pursers, entertainers, or officers-in-training.

Passengers. 1,200 soldiers, 40 cavalry

Berth. 100 tons (2 airships).

Magic Augmentations. Cloud keel (-24 PP);

Quarters

Quarters (upper). 12 luxury cabins (officers and guests), 22 cabins, 100 bunks, grand hall (for 100), 10 offices, library (for 20)

Quarters (center). 58 cabins, 650 bunkrooms (for artillery crew), chapel (for 30), hospital (for 30)

Quarters (lower). barracks (for 1200), 50 cabins, training hall (for 200), stables (80 horses), prison (for 40), 10 offices, armoury (10 tons)

Quarters (livestock). 500 tons steerage cargo

Quarters (workrooms). 2 mason's workshops, 2 carpenter's workshops, 2 smith workshops, 1 cobbler's workshop, 1 alchemist's workshop, 1 brewer's workshop, 36 cabins

Design Notes: Mass *Cviii* body. Vertical design. The elemental engine is de-rated (half power, half cost).

Flying Fortress

Legendary gargantuan object

Armor Class: 17
Hit Points: 1,200
Damage Threshold: 55
Speed: Fly 240 ft. (27 mph)
Dexterity: 4 (-3)
Cargo: 1,250 tons in cargo holds; 400 tons in iron vault; 500 tons steerage
Cost: 4,870,000 gp

Slot	Components
1–2	**Stone armor** (upper)
3	**Helm** (6 controls)
4	**Atrium** (gardens, capacity 400)
5	i. **2 × Heavy trebuchet** (300 ammunition each) ii. **Quarters (upper)** 100
6	**Vault** (iron, AC 18, 400 tons)
7	**Cargo** (500 tons)
8–9	**Stone armor** (center)
10	**Maneuvering System** (air)
11	**Quarters (center)**
12	**Elemental engine** (CR 1,000 captured, +24 PP)
13	i. **8 × trebuchet** (350 ammunition each) ii. **Cargo** (250 tons)
14–15	**Quarters (lower)** 3000
16	**Quarters (livestock)** 1000
17–18	**Stone armor** (lower)
19	**Cargo** (500 tons)
20	i.**100 × ballista** (60 ammunition each) ii. **Quarters (workrooms)** 300 iii. **Berth** (100 tons)