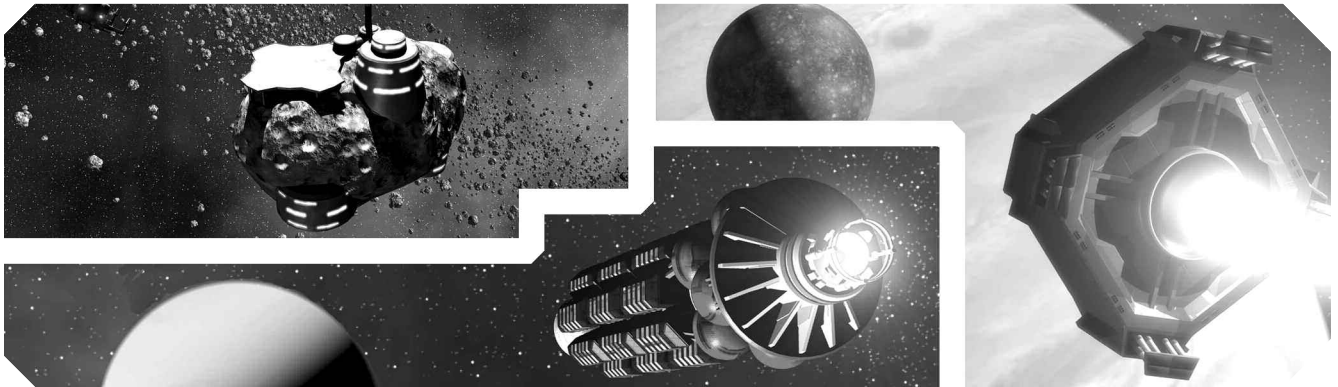


GURPS[®]

Fourth Edition

SPACESHIPS 8

TRANSHUMAN SPACECRAFT



Written by **DAVID L. PULVER**

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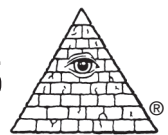
Illustrated by **JESSE DEGRAFF, MARCIO FIORITO, and CHRISTOPHER SHY**

An e23 Sourcebook for GURPS[®]

STEVE JACKSON GAMES

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CONTENTS

INTRODUCTION	3	Diaoche-Class TCAV (TL10)	16	SPACE DOMINANCE	
<i>About the Series</i>	3	Eurofighter Tempest		VEHICLES	29
Publication History	3	TCAV (TL9)	16	DFS-3C Archangel-Class	
About the Author	3	Mercury-Class HLV (TL10)	17	SDV (TL10)	29
About GURPS	3	Molniya-Class Ballistic		LSDV-5 Hermann Oberth-Class	
1. SPACECRAFT DESIGN		Ramjet TAV (TL9)	17	SDV (TL10)	30
AND OPERATION	4	Pegasus-Class TAV (TL10)	18	Königsberg-Class SDV (TL10) . .	30
<i>Transhuman Space Glossary</i>	4	SATV (TL10)	18	Riguang-Class SDV (TL10)	31
DESIGN GUIDELINES	5	HEAVY SPACE TRANSPORT		Salahudin Samboja-Class	
Tech Level	5	VEHICLES	19	Unmanned SDV (TL10)	31
Spacecraft Hulls	5	Lewis-Class HSTV (TL9)	19	SDV-90 (Resolution- and	
Smaller Systems	5	Parus-Class HSTV (TL9)	19	Gram-Classes) (TL10)	32
Larger Systems	5	Spokane-Class		Xingzhai-Class SDV (TL10)	32
Spacecraft Systems	5	HSTV (TL10)	20	STATIONS	33
<i>Converting Existing Vessels</i>	6	Zhongguang-Class		Asteroid Base (TL9)	33
Additional Systems	8	HSTV (TL10)	20	Cynosure-Class Station (TL10) . .	34
Design Features	8	MICROGRAVITY ASSAULT		Omnistar-Class Space	
Design Switches	9	VEHICLES	21	Platform (TL9)	34
ACTION	9	AC-425 Seminole-Class		Von Braun-Class	
Travel in the Solar System	9	MAV (TL10)	21	Station (TL10)	35
Combat Scales	9	MAV-IIB Puma (TL9)	21	Vulcan-Class Station (TL9)	35
Radiation	10	ORBITAL SPACECRAFT	22	UNUSUAL VESSELS	36
Economic Considerations	10	Bumblebee Work Pod (TL9)	22	Ernst Opik-Class (TL10)	36
2. SPACECRAFT	11	Kagoshima-Class OTV (TL9)	22	Nadezhda Bioship (TL10)	36
<i>Abbreviations</i>	11	Schaffer-Class OTV (TL9)	23	SEM-23B Peregrine Remote	
AUTONOMOUS KILL VEHICLES	11	Steptoe-Class Debris		Survey Vehicle (TL10)	37
Kupu-Kupu-Class AKV (TL9)	11	Recovery Vehicle (TL9)	23	Solaris (TL9)	37
Rajasi-Class AKV (TL10)	12	Tahmas-Class Interstation		X-92 AKV (TL10)	37
SIM-7 Predator-Class		Transport Pod (TL10)	24	UTILITY SPACE VEHICLES	38
AKV (TL10)	12	Usagi-Class “Hopper” Lunar		Golub-Class USV (TL9)	38
Zhengyang-Class AKV (TL10)	13	Transit Vehicle (TL9)	24	Mudlark-Class USV (TL10)	39
DEEP SPACE OPERATIONS		PASSENGER SPACE VEHICLES	24	Sudbury-Class USV (TL10)	39
VEHICLES	13	Meizi-Class PSV (TL10)	25	3. ALTERNATE	
Shepard-Class DSOV (TL10)	13	Mochi-Class PSV (TL10)	25	SETTINGS	40
Thule-Class DSOV (TL9)	14	SPACE CONTROL VEHICLES	26	Cyber Space 2100	40
EXECUTIVE SPACE VEHICLES	14	DCS-4 Grizzly-Class		Red Star, White Star	40
Mojave-Class ESV (TL10)	14	SCV (TL10)	26	Transhuman Stars	40
Sunlance-Class ESV (TL10)	15	Gang Lung-Class		<i>Interstellar Starships</i>	41
HEAVY LIFT AND		SCV (TL10)	26	<i>Downgrading the Computers</i>	41
TRANSATMOSPHERIC		Shengzi-Class SCV (TL9)	27	Imperial Earth	41
VEHICLES	15	SPACE DEFENSE PLATFORMS	27	The First Interstellar War	41
Chronos-Class TAV (TL10)	15	Avskèrmar SDP (TL10)	27	Galactic Federation	41

Additional Material: Phil Masters, Kenneth Peters, and Jonathan Woodward

Playtesters: Frederick Brackin, Roger Burton West, and Phil Masters

Extra-special thanks to Kenneth Peters for playtest contributions above and beyond the call of duty.

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INTRODUCTION

This book provides *GURPS Spaceships* conversions for the many spacecraft in the *Transhuman Space* series, and a guide to designing new vessels for it using the *GURPS Spaceships* rules.

Those who don't use *Transhuman Space* may still find this book useful as it presents a full range of TL9-10 military and civilian interplanetary spacecraft. With minor changes, they can be adapted to other interplanetary settings or converted to starships for an interstellar campaign.

PUBLICATION HISTORY

Most of the spacecraft in this book are adapted from the following works: *Transhuman Space* by David Pulver; *Transhuman Space: Deep Beyond* by David Pulver; *Transhuman Space: High Frontier* by John Snead, David

About the Series

Transhuman Spacecraft is the eighth book in the *GURPS Spaceships* series. This line supports *GURPS Space* campaigns by providing ready-to-use spacecraft descriptions and rules for space travel, combat, and operations. Each volume offers spacecraft descriptions and supplementary rules.

GMs need *GURPS Spaceships* to use this book, along with *Transhuman Space*. The supplement *Transhuman Space: Changing Times* is also recommended.

Pulver, Phil Masters, Dawn Elliot, Gene Seabolt, Jon F. Zeigler, and James Maliszewski; *Transhuman Space: In The Well* by Jonathan Woodward; and, most significantly, *Transhuman Space: Spacecraft of the Solar System* by Kenneth Peters.

About GURPS

Steve Jackson Games is committed to full support of *GURPS* players. Our address is SJ Games, P. O. Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! We can also be reached by e-mail: info@sjgames.com. Resources include:

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Bibliographies. Many of our books have extensive bibliographies, and we're putting them online – with links to let you buy the resources that interest you! Go to each book's web page and look for the "Bibliography" link.

Errata. Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata pages for all *GURPS* releases, including this book, are available on our website – see above.

Rules and statistics in this book are specifically for the *GURPS Basic Set, Fourth Edition*. Page references that begin with B refer to that book, not this one.

Last week we reported a mystery spacecraft sighting at Hyperion Proving Ground near Saturn.

– Deep Beyond

ABOUT THE AUTHOR

David L. Pulver is a freelance writer and game designer based in Victoria, British Columbia. He is the co-author of the *GURPS Basic Set Fourth Edition*, and author of *Transhuman Space*, *GURPS Mass Combat*, *GURPS Spaceships*, and numerous other gaming products.

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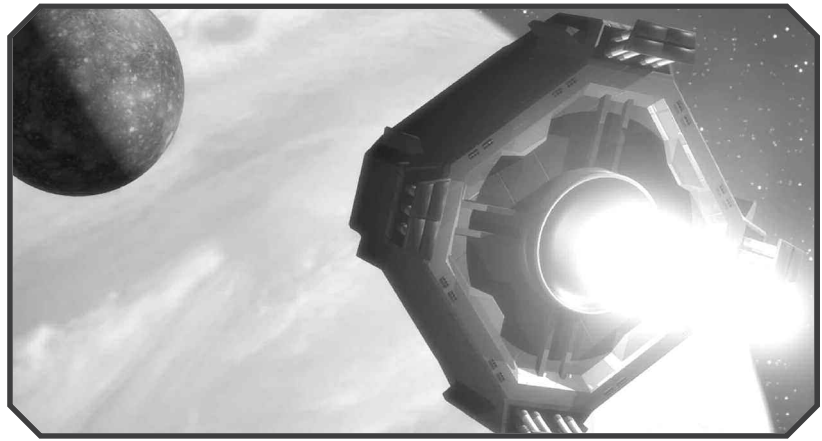
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ADDITIONAL SYSTEMS

Two additional systems are common in *Transhuman Space*:

Jet Engine, Fission Air-Ram (TL7) [Rear]

This uses an integral fission reactor to run a turbofan that sucks in air, heating it and expelling it for thrust. It operates for two years on an internal nuclear fuel supply. The exhaust is slightly radioactive. Each air-ram produces 0.2G (TL7), 0.4G (TL8), or 0.6G (TL9+) acceleration for calculating atmospheric speed.



Fission Air-Ram Table

SM	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
Workspaces	0	0	0	0	0	1	3	10	30	100	300
Cost (\$)	400K	1.2M	4M	12M	40M	120M	400M	1.2B	4B	12B	40B

Repair Skill: Mechanic (Aerospace).

Craft built to lift from Luna or Mercury usually use fission drive or laser rockets.

– Transhuman Space

Laser Rocket (TL9) [Rear]

Laser rockets use an off-board laser to heat a reaction mass – such as an ablative plastic lining the interior of the drive – which provides thrust. They require a large ground-based laser installation. Each engine provides 3G acceleration. Each fuel tank of ablative plastic provides 0.5 mps delta-V.

Laser Rocket Table

SM	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
Workspaces	0	0	0	0	0	1	3	10	30	100	300
Cost (\$)	60K	200K	600K	2M	6M	20M	60M	200M	600M	2B	6B

Repair Skill: Mechanic (High-Performance Spacecraft or Rocket).

DESIGN FEATURES

Many vessels use total automation. All other nonsuperscience features are in use on some designs, especially spin gravity.

Unavailable Features: All superscience features are unavailable.

Biomechanical

Experimental “bioships” that use a mix of living tissue and cybernetic implants are possible. Bioships are similar to other designs, but utilize organic armor on their hull and must have the total automation design feature, representing their onboard self-regulating qualities. In addition, they may have the following design features:

Biomechanical Self-Repair: The ship is capable of self-repair. If the spacecraft is reduced to -5 times its HP, it can no longer fix itself – there isn’t enough structure left. Otherwise, regeneration rate is 10% of the spacecraft’s dHP every day. This option costs \$0.02M per ton of mass, e.g., for an SM +7 (300 ton) spacecraft it costs \$6M.

Requires Nutrients: Current bioships require nutrient supplements to function properly. If they are not fed they are unable to heal, and starvation results in the craft falling apart (reduce HT by one per *day* of starvation). Nutrient requirement is one man-day times ST; nutrients cost and mass the same as human food (*GURPS Spaceships*, p. 47). For example, a ST 100 bioship requires the equivalent of 100 man-days of food per day (which would cost \$200 and mass 0.2 tons). They should be stored in cargo.

Methane and Ammonia Reaction Mass

Two common alternatives for reaction mass are ammonia and methane. Either may be used in fusion rocket and nuclear thermal rocket engines. Like water, these increase acceleration at the expense of greater fuel consumption (i.e., reducing the delta-V).

Ammonia: Use of ammonia multiplies acceleration by 2.9 but divides delta-V by 2.9.

Methane: Use of methane multiplies acceleration by 2.8 but divides delta-V by 2.8.

HEAVY SPACE TRANSPORT VEHICLES

The largest fusion-drive space transports, these super-freighters carry most commercial cargo across interplanetary distances. Some HSTVs are optimized for solid cargo, while others are tankers that carry volatiles (gases and liquids). They never land on planets, instead docking with asteroid bases or stations such as the *Von Braun* (p. 35) or *Vulcan* (p. 35). Despite their size, many HSTVs are unmanned or have only small crews.

LEWIS-CLASS HSTV (TL9)

DB, p. 141

The United States uses these robot-tanker spacecraft to transport He-3 from Saturn orbit to Earth-Lunar space. They ship 1,000 tons of fuel per trip. The *Lewis* has a spherical unstreamlined hull 100 feet in diameter (SM +10) massing 10,000 tons.

Front Hull System

[1]	Light Alloy Armor (dDR 15).
[2-3]	Fuel Tanks (500 tons He-3 cargo each).
[4-6]	Fuel Tanks (500 tons water providing 5.6 mps delta-V each).

Front Hull System

[core]	Smaller Systems (three at SM +9): one Control Room (C8 computer; comm/sensor 7, no control stations); one Medium Battery (two turrets with 3 MJ very rapid fire lasers; 50 tons cargo) [!]; one Fuel Cell (one small Power Point for Medium Battery).
--------	---

Central Hull System

[1]	Light Alloy Armor (dDR 15).
[2-6]	Fuel Tanks (500 tons water providing 6.4 mps delta-V each).

Rear Hull System

[1]	Light Alloy Armor (dDR 15).
[2-5]	Fuel Tanks (500 tons water providing 6.4 mps delta-V each).
[6]	Fusion Rocket (0.015G acceleration using water reaction mass).
[core]	Fuel Tank (500 tons water providing 6.4 mps delta-V).

It has total automation and exposed radiators. It is crewed by AIs.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
----	------------	--------	--------	----	------	------	------	----	-----	-----	-------	------

PILOTING/TL9 (LOW-PERFORMANCE SPACECRAFT)

9	<i>Lewis</i> -class	150	-5/4	12	0.015G/83.2 mps	10,000	50	+10	0	15	0	\$182.2M
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PARUS-CLASS HSTV (TL9)

SSS, pp. 13-14

The unmanned *Parus* (Russian for "sail") slowhauler was one of the first deep-space transports, and is no longer "heavy" by modern standards, although it is cost-effective. A half-dozen remain in service today, carrying low-priority cargo from Mars to the Belt and back. Its 100-ton (SM +6) unstreamlined 30-foot-long hull is dwarfed by its vast plasma sail.



The fusion reactor powers up briefly to initiate the plasma sail, but can be turned off afterward. As a result, the *Parus* does not use exposed radiators.

Front Hull System

[1]	Light Alloy Armor (dDR 3).
[2-6]	Plasma Sail (0.001G acceleration each).

Central Hull System

[1]	Light Alloy Armor (dDR 3).
[2]	External Clamp.
[3-6]	Cargo Holds (total 20 tons capacity).
[core]	Control Room (C7 computer; comm/sensor 4, no control stations).

Rear Hull System

[1]	Light Alloy Armor (dDR 3).
[2-6]	Cargo Hold (total 25 tons capacity).
[core]	Fission Reactor (one Power Point).

It is crewed by an AI.

TL	Spacecraft	dST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ	dDR	Range	Cost
----	------------	--------	--------	----	------	------	------	----	-----	-----	-------	------

PILOTING/TL9 (LOW-PERFORMANCE SPACECRAFT)

9	<i>Parus</i> -class	30	-3/4	12	0.005G/375 mps	100	45	+6	0	3	0	\$5.56M
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SPACE CONTROL VEHICLES

SCVs are military carriers that support planetary assaults. They carry a platoon- to battalion-sized force, plus a flight of TAVs and sometimes AKVs.

SCVs handle wars and other threats.

DCS-4 GRIZZLY-CLASS SCV (TL10)

SSS, pp. 38-40

This is a force-projection vessel operated by the USAF, but carrying U.S. Army spaceborne troops. It is an unstreamlined hull massing 30,000 tons (SM +11), 450 feet long. It is the largest spacecraft constructed with diamondoid armor thus far, giving it exceptional protection.

Front Hull System

[1-3]	Diamondoid Armor (Hardened; total dDR 300).
[4]	Hangar Bay (1,000 tons capacity).*
[5!]	Secondary Battery (four turrets with 100 MJ rapid fire ultraviolet lasers, six turrets with 10 MJ very rapid fire ultraviolet lasers).*

Front Hull System

[6]	Smaller Systems (three at SM +10): one Control Room (C10 computer, comm/sensor 9, and five control stations); one Multipurpose Array (comm/sensor 11); one External Clamp.†
[core]	Fusion Reactor (two Power Points).*

Central Hull System

[1-2]	Diamondoid Armor (Hardened; total dDR 200).
[3-6]	Fuel Tanks (1,500 tons nuclear pellets providing 12 mps delta-V each).
[core]	Habitat (50 bunkrooms, 10 cabins, three establishments, five-bed automed sickbay, minifac fabricator; 640 tons cargo).*

Rear Hull System

[1]	Diamondoid Armor (Hardened; dDR 100).
[2-5]	Fuel Tanks (1,500 tons nuclear pellets providing 12 mps delta-V each).
[6]	Fusion Pulse Drive (0.05G acceleration).*

* Three workspaces per system.

† One workspace each for control room and multipurpose array.

It has dynamic chameleon skin and exposed radiators. Crew consists of four bridge crew (commander, pilot, navigator, and weapons officer). Others include 17 technicians and 100 battlesuited troopers or other military personnel.

TL Spacecraft dST/HP Hnd/SR HT Move LWt. Load SM Occ dDR Range Cost

PILOTING/TL10 (LOW-PERFORMANCE SPACECRAFT)

10 Grizzly-class 200 -5/4 13 0.05G/96 mps 30,000 1,662 +11 220ASV 300/200/100 0 \$4,699.75M

GANG LUNG-CLASS SCV (TL10)

ITW, pp. 106-107

The enormous *Gang Lung* ("steel dragon") is China's most modern space control vehicle. It entered service with the PLAN deep-space fleet in 2090. It uses a 30,000-ton (SM +11) hull 450 feet long.

Front Hull System

[1-3]	Advanced Metallic Laminate (total dDR 150).
[4]	Smaller Systems (three at SM +10): one Tactical Array (comm/sensor 11); one External Clamp; one Hangar Bay (300 tons capacity).*
[5]	Hangar Bay (1,000 tons capacity).†
[6]	Habitat (Eight cabins and 20 bunkrooms with total life support; two 10-bed sickbay clinics; establishment; ops center; two fabricator minifacs; 550 tons cargo).†
[core]	Control Room (C10 computer, comm/sensor 10, eight control stations).†

The largest SCV currently in service.

Central Hull System

[1-2]	Advanced Metallic Laminate (total dDR 100).
[3]	External Clamp.
[4!]	Tertiary Battery (four turrets with 30 MJ rapid fire ultraviolet lasers, 10 turrets with 3 MJ very rapid fire ultraviolet lasers; 800 tons cargo).†
[5-6]	Fuel Tank (1,500 tons fuel pellets providing 12 mps delta-V each).
[core]	Fusion Reactor (two Power Points).†

Rear Hull System

[1]	Advanced Metallic Laminate (dDR 50).
[2-5]	Fuel Tank (1,500 tons fuel pellets providing 12 mps delta-V each).
[6]	Fusion Pulse Drive (0.05G acceleration).†

* One workspace each for tactical array and hangar bay.

† Three workspaces per system.

INDEX

- Abbreviations, 4, 11.
Ablative plastic, 10.
About the series, 3.
AC-425 Seminole-class MAV, 21.
Action, 9-10.
Additional systems, 8.
Advanced computers, 9.
Alternate settings, 40-41.
Alternate sizes for systems, 5.
Ammonia reaction mass, 8, 10.
Angry Schaffer OTV, 23.
Antimatter, *augmented design feature*, 7;
augmented fuel pellets, 10; *plasma rockets*, 7; *reaction engines*, 7; *reactors*, 6; *thermal rockets*, 7.
Archangel-class SDV, 29.
Armor, *equivalents*, 5; *smaller*, 5.
Assault boats, 21.
Asteroid bases, 33.
Autonomous kill vehicles (AKV), 4, 11-13.
Avskärmar SDP, 27-28.
Barricade-class SDP, 28.
Biomechanical features, 8.
Bioships, 36.
Book abbreviations, 11.
Bumblebee work pod, 22.
Campaign settings, 4, 40-41.
Chemical, *power plants*, 6; *rocket reaction engines*, 6.
Chihuahuan-class ESV, 14-15.
China, 4, 12; *ships*, 20, 28-29; *see also* PLAN-SF.
Chronos-class TAV, 15-16.
Clamps, external, 5, 6.
Combat scales, 9.
Computers, 9, 11, 41.
Control rooms, 5, 6.
Converting existing vessels, 6.
Cosmic rays, 10.
"Cyber Space 2100" setting, 40.
Cynosure-class station, 34.
Cyrano de Bergerac-class SDV, 30-31.
DCS-4 *Grizzly*-class SCV, 26.
Debris recovery vehicles, 23.
Deep space operations vehicles (DSOV), 4, 13-14.
Defensive ECM, 6.
Definitions, 4.
Design, *features*, 8-9; *guidelines*, 5-9; *switches*, 9.
DFS-3C *Archangel*-class SDV, 29.
Diamondoid armor, 5, 6.
Diaoche-class TCAV, 16.
Downgrading computers, 41.
Drives, 5, 6.
Duncanites, 4, 13; *ships*, 31-33, 39.
ECM, 6.
Economic considerations, 10.
Engines, 5-8.
Equatorial velocity of gas giants, 9.
Ernst Opik-class, 36.
Eurofighter *Tempest* TCAV, 16-17.
European Union, 4; *ships*, 12, 16-17, 21, 27.
Executive space vehicles (ESV), 4, 14-15.
Existing vessels, converting, 6.
Exposed radiators, 9.
External clamps, 5, 6.
Factories, 5, 6.
Fission, *air-rams*, 8; *reaction engines*, 6; *reactors*, 6.
France, *ships*, 30-31, 37.
Fuel, 5, 6, 10.
Fusion, *reaction engines*, 7; *reactors*, 6.
"Galactic Federation" setting, 41.
Gang Lung-class SCV, 26.
Gas giants and equatorial velocity, 9.
Germany, *ships*, 30-31.
Glossary, 4.
Golub-class USV, 38.
Gram-class SDV, 32.
Grizzly-class SCV, 26.
GURPS, 9, 11; **Space**, 3; **Spaceships**, 3-11, 41.
Gypsy Angels, 14.
Half-sized systems, 5.
Heavy lift vehicles (HLV), 4, 15-18.
Heavy space transport vehicles (HSTV), 4, 19-20.
HEDM rockets, 6.
Hermann Oberth-class SDV, 30.
Hoppers, 24.
Horus I, 13.
Hull sizes, 5.
"Imperial Earth" setting, 41.
India, *ships*, 28-30.
Interstation transport pods, 24.
Interstellar starships, 41.
"Interstellar War" setting, 41.
Italy, *ships*, 30.
Japan, *ships*, 15, 30.
Jet engines, 8.
Kagoshima-class OTV, 22-23.
Königsberg-class SDV, 30-31.
Kupu-Kupu-class AKV, 11.
Larger systems, 5.
Laser rockets, 8.
Lewis-class HSTV, 19.
LSDV-5 *Hermann Oberth*-class SDV, 30.
LSDV-6 SDV, 30..
Light space dominance vehicle (LSDV), 4, 30.
Lunar transit vehicles, 24.
MAV-IIB *Puma*, 21.
Meizi-class PSV, 25.
Mercury-class HLV, 17.
Methane reaction mass, 8.
Microgravity assault vehicles (MAV), 4, 21.
Missile launchers, 7.
Mochi-class PSV, 25.
Mojave-class ESV, 14-15.
Molniya-class Ballistic Ramjet TAV, 17-18.
Mudlark-class USV, 39.
Nadezhda Bioship, 36.
Nuclear, *fuel pellets*, 10; *pulse reaction engines*, 6-7.
Off-size systems, 5.
Omnistar-class space platform, 34.
Orbital space craft, 22-24.
Orbital transfer vehicles (OTV), 4, 22-24.
Organic armor, 5.
Pacific War, *ships* used in, 11-13.
Parus-class HSTV, 19.
Passenger space vehicles (PSV), 4, 24.
Pegasus-class TAV, 18.
Peregrine remote survey vehicle, 37.
Planetary radiation belts, 10.
PLAN-SF, 4; *ships*, 13, 16, 26-29, 31-33.
Political powers, 4.
Power plants, 5, 6.
Predator-class AKV, 12.
Protection Factor (PF), 10.
Publication history, 3.
Puma, 21.
Radiation protection, 10.
Rajasi-class AKV, 12.
Ramscoops, 6.
Reaction engines, 6-7.
Reaction mass costs, 10.
Reactors, 6.
"Red Star, White Star" setting, 40.
Rei-class ESV, 15.
Remote survey vehicles (RSV), 4, 37.
Requires Nutrients feature, 8.
Resolution-class SDV, 32.
Riguang-class SDV, 31.
Robot arms, 7, 9.
Rockets, 6-8, 10.
Rotation speed, 9.
Sails, 5.
Salahudin Samboja-class unmanned SDV, 31-32.
Saturn Autonomous Transatmospheric Vehicles, 18-19.
SATV, 18.
Schaffer-class OTV, 23.
SDV-90, 32.
Self-repair feature, 8.
SEM-23B *Peregrine* remote survey vehicle, 37.
Setting, *ideas*, 40-41; *of Transhuman Space*, 4.
Settlements in space, 4.
Shanzi-class SDP, 28-29.
Shengzi-class SCV, 27.
Shepard-class DSOV, 13-14.
SIM-7 *Predator*-class AKV, 12.
Smaller systems, 5.
Snarks, 12.
Soft-landing systems, 5.
Solar flares, 10.
Solaris, 37.

South Africa, ships, 25, 27, 37.
Space control vehicles (SCV), 4, 26-27.
Space defense platforms (SDP), 4, 27-29.
Space dominance vehicles (SDV), 4, 29-33.
Space drive conversions, 7.
Space platforms, 34.
Space sails, 7.
Spacecraft, 11-39; *glossary*, 4; *hulls*, 5; *systems*, 5.
Spain, ships, 30.
Spokane-class HSTV, 20.
Stations, 33-35.
Steptoe-class Debris Recovery Vehicle, 23.
Sudbury-class USV, 39.
Sunlance-class ESV, 15.
Superscience systems, 5.
Systems, 5-8, *alternate sizes*, 5.
Tahmas-class interstation transport pod, 24.

Tech level of setting, 5.
Telescoping robot arms, 9.
Tempest TCAV, 16-17.
Thule-class DSOV, 14.
Total conversion reaction engines, 7.
Transatmospheric combat air vehicle (TCAV), 4, 16-17.
Transatmospheric vehicles (TAV), 4, 15-18.
Transhuman Space, 3-11, 40, 41; *Changing Times*, 3; *Deep Beyond*, 3, 11; *High Frontier*, 3, 11; *In the Well*, 3, 11; *Spacecraft of the Solar System*, 3, 11; *glossary*, 4; *see also specific spacecraft*.
"Transhuman Stars" setting, 40-41.
Transpacific Socialist Alliance (TSA), 4; *ships*, 11-12, 31-32.
Travel in the solar system, 9.

United States, 4; *ships*, 12-16, 19, 21, 26, 29, 37-38.
United States Aerospace Force (USAF), 4; *ships*, 12, 13, 15-16, 26, 29, 37-38.
Unusual vessels, 36-38.
Usagi-class "Hopper" lunar transit vehicle, 24.
Utility space vehicles (USV), 4, 38-39.
Vacuum Cleaner vessels, 23.
Von Braun-class station, 35.
Vulcan-class station, 35.
Weapons and combat scales, 9.
Weapons batteries, 7.
Work pods, 4, 22-24.
X-92 AKV, 37-38.
Xingzhai-class SDV, 32-33.
X-ray laser munitions, 9.
YDSF-2 SDV, 29.
Zhengyang-class AKV, 13.
Zhongguang-class HSTV, 20.

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