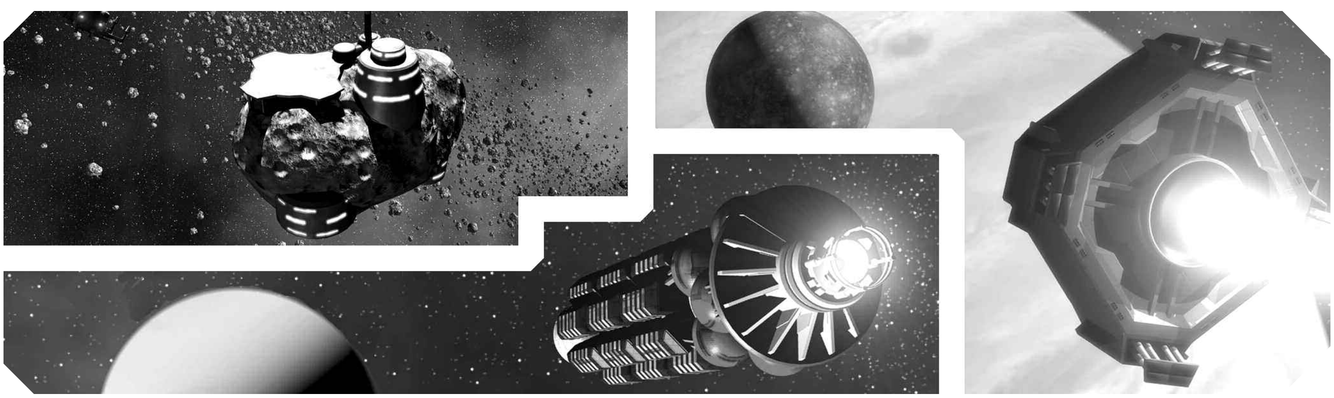
GURPS® Fourth Edition

SPACESHIPS 8

TRANSHUMAN SPACECRAFT™



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*An e23 Sourcebook for **GURPS**®*

STEVE JACKSON GAMES®

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Contents

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.

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.

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.

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 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:

New supplements and adventures. ***GURPS*** continues to grow – see what's new at **www. sjgames.com/gurps**.

e23. Our e-publishing division offers ***GURPS*** adventures, play aids, and support in PDF form . . . digital copies of our books, plus exclusive material available only on e23! Just head over to **e23.sjgames.com**.

Pyramid (**www.sjgames.com/pyramid**). Our monthly PDF magazine includes new rules and articles for ***GURPS***, systemless locations, adventures, and much more. Look for each themed issue from e23!

Internet. Visit us on the World Wide Web at **www.sjgames.com** for errata, updates, Q&A, and much more. To discuss ***GURPS*** with our staff and your fellow gamers, visit our forums at **forums.sjgames.com**. The ***GURPS Spaceships 8: Transhuman Spacecraft*** web page is **www.sjgames.com/gurps/books/spaceships/spaceships8**.

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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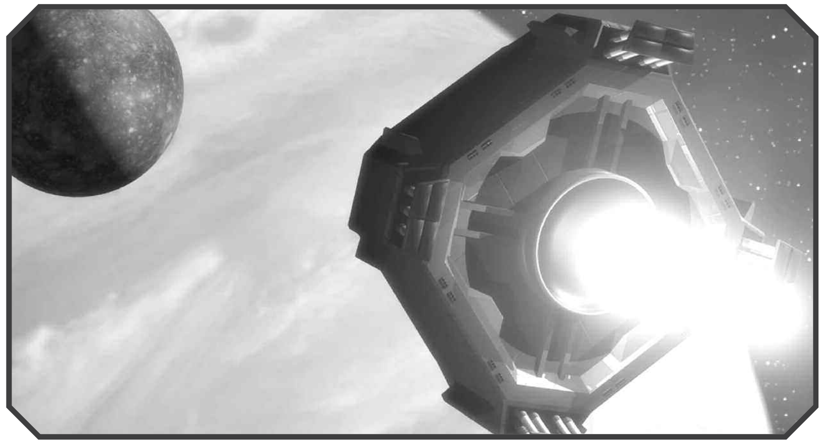
Additional Systems

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).
[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	*Lewis*-class	150	-5/4	12	0.015G/83.2 mps	10,000	50	+10	0	15	0	$182.2M

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	*Parus*-class	30	-3/4	12	0.005G/375 mps	100	45	+6	0	3	0	$5.56M

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).*
[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 largest SCV currently in service.

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).†
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.

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