

# TRANSHUMAN<sup>TM</sup> SPACE



POWERED BY  
GURPS<sup>®</sup>



Written by David Pulver  
Illustrated by Christopher Shy

STEVE JACKSON GAMES



# What is “human”?

In the year 2100, humanity faces its greatest challenge: settling the vast reaches of the solar system. Spacegoing transnationals develop technologies that governments fear to explore, while bizarre posthuman cultures bloom like exotic flowers. Will “human” cease to have any meaning in a world of genetic engineering and digital consciousness?

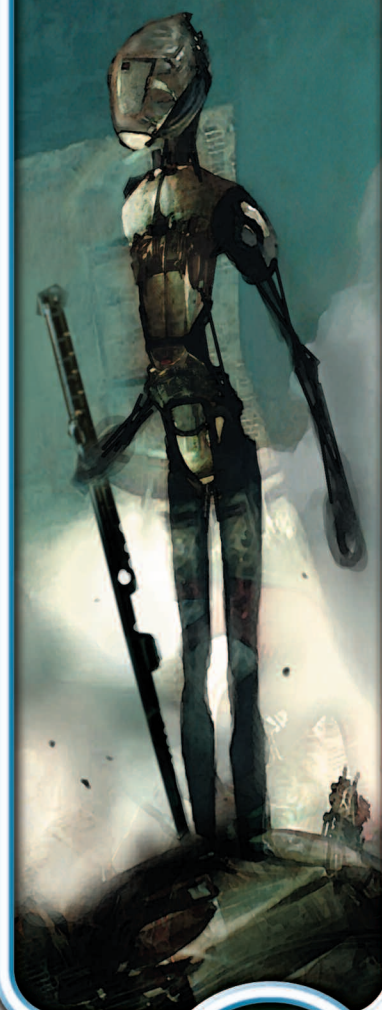
It is a time of wealth and adventure, of transformation and terror – the age of *Transhuman Space!* Within these pages, you’ll find:

- A future history of the next 100 years: the rise of China, the terraforming of Mars, and the birth of the first artificial intelligence.
- A gazetteer of the solar system, from Earth to the thriving colonies on Luna, Mars, and beyond.
- A detailed encyclopedia of transhuman space.
- Dozens of transhuman character templates, from space-adapted parahumans to digital infomorphs. Play an AI or an intelligent octopus!
- Complete rules for spacecraft design, travel, and combat.

This book contains a complete roleplaying game. *GURPS Basic Set, Third Edition* and *GURPS Compendium I: Character Creation* are helpful, but not required for full use of this book. *GURPS Bio-Tech* can provide additional options, but is not required.

*Transhuman Space* is the first in a comprehensive line of sourcebooks exploring a transhuman vision of the 22nd century, where biology and nanotechnology merge with interplanetary adventure.

**Welcome to our future!**



Written by David Pulver

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**STEVE JACKSON GAMES**

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# TRANSHUMAN<sup>TM</sup> SPACE

Written by David Pulver  
Illustrated by Christopher Shy

Editors: Andrew Hackard and Sean Punch

Additional material: Anthony Jackson,  
Kenneth Peters, Jonathan Woodward,  
and Jon Zeigler

Base map design: Nelson Cunnington

Stellar cartography: Heather Oliver

Special thanks: John Nowak, Sean Punch, Gene Seabolt

*GURPS* System Design ■ Steve Jackson

Managing Editor ■ Andrew Hackard

Creative Director ■ Philip Reed

*GURPS* Line Editor ■ Sean Punch

*Transhuman Space* Line Editor ■ David Pulver

Project Administrator ■ Monique Chapman

Production Manager ■ Heather Oliver

Production Artists ■ Philip Reed and Gene Seabolt

Print Buyer ■ Monica Stephens

*GURPS* Errata Coordinator ■ Andy Vetromile

Sales Manager ■ Ross Jepson

Lead Playtester: John L. Freiler

Playtesters: Anthony Jackson, James "Pip" Barrett, Frederick Brackin, Tony Chen, Mark Cogan, Peter Dell'Orto, Steven Ehrbar, Werner H. Hartmann, Jürgen Hubert, James Jones, Samuel Lindsay-Levine, M.A. Lloyd, Phil Masters, Nelson Cunnington, Robert O'Connor, Bowden Palmer, Shawn Penrod, Jeff Raglin, Thomas Schoene, John Snead, SwiftOne, Constantine Thomas, Christopher Thrash, Eric Ueber, Jonathan Woodward, Jon Zeigler.

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# INTRODUCTION



We live in the 21st century. In the coming decades, technologies such as genetic engineering, artificial intelligence, and nanotechnology are poised to transform humanity. Unfolding before us is a strange new world – nightmarish to some, utopian to others – in which we shall have the power to reshape our children’s genes, build machines that think, and perhaps even upload our minds into computers.

Simultaneously, we are emerging into an era where the colonization of space is at last becoming possible. Space tourism, mining the moon and asteroids, a settlement on Mars: all are dreams poised to take wing.

*Transhuman Space* is a synthesis of these two visions, a world in which they fuse to forge a new destiny for mankind. Neither utopia nor dystopia, it is a place of hopes, fears, and new frontiers. Welcome to 2100!



## THE TRANSHUMAN SPACE LINE

This book is the first in a line of world-books and adventures that will develop the *Transhuman Space* setting. It provides an introduction and overview of the setting, guidelines for creating characters, and rules for equipment and spacecraft. Supporting this core book are a series of world books focusing on different parts of the solar system, including *Transhuman Space: In the Well* (Mars, Venus, and Mercury), *High Frontier* (Luna, Earth orbit, and the Lagrange colonies), *Fifth Wave* (Earth), and *Deep Beyond* (the asteroid belt and outer solar system). Also available is the first *Transhuman Space* adventure, *Orbital Decay*.

### Additional Material

The *GURPS Basic Set* and *GURPS Compendium I* are helpful, but not required to use this worldbook. GMs will also find *GURPS Bio-Tech* a source of useful rules and ideas. Some (but by no means all) of the fictional vignettes in *Bio-Tech* take place in the *Transhuman Space* world; a few offer a glimpse of its future. *GURPS Compendium II*, *Ultra-Tech 2*, and *GURPS Vehicles, Second Edition* also have rules and gadgets that may be helpful to GMs, but neither they nor *Bio-Tech* are required.

On the Web, see [www.sjgames.com/transhuman/](http://www.sjgames.com/transhuman/) for more information on the whole *Transhuman Space* line.

## ABOUT THE AUTHOR

David L. Pulver is the creator and line editor of the *Transhuman Space* series. A writer, editor, and game designer, he was born in Canada, and lived in England and New Zealand. David is the author or co-author of over 40 books, including *GURPS Bio-Tech*, *GURPS Vehicles*, *GURPS Technomancer*, *BESM, Second Edition*, and *Big Robots, Cool Starships*. His interests include science fiction, anime, and history.

## ABOUT GURPS

Steve Jackson Games is committed to full support of the *GURPS* system. Our address is SJ Games, Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! Resources include:

*Pyramid* ([www.sjgames.com/pyramid/](http://www.sjgames.com/pyramid/)). Our online magazine includes new *GURPS* rules and articles. It also covers *Dungeons and Dragons*, *Traveller*, *World of Darkness*, *Call of Cthulhu*, and many more top games – and other Steve Jackson Games releases like *In Nomine*, *Illuminati*, *Car Wars*, *Toon*, *Ogre Miniatures*, and more. *Pyramid* subscribers also have access to playtest files online!

*New supplements and adventures.* *GURPS* continues to grow, and we'll be happy to let you know what's new. A current catalog is available for an SASE. Or check out our website (below).

*Errata.* Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata sheets for all *GURPS* releases, including this book, are available from SJ Games; be sure to include an SASE. Or download them from the Web – see below.

*Gamer input.* We value your comments, for new products as well as updated printings of existing titles!

*Internet.* Visit us on the World Wide Web at [www.sjgames.com](http://www.sjgames.com) for an online catalog, errata, updates, Q&A, and much more. *GURPS* has its own Usenet group, too: [rec.games.frp.gurps](mailto:rec.games.frp.gurps).

*GURPSnet.* This e-mail list hosts much of the online discussion of *GURPS*. To join, e-mail [majordomo@io.com](mailto:majordomo@io.com) with “subscribe GURPSnet-L” in the body, or point your web browser to [gurpsnet.sjgames.com](http://gurpsnet.sjgames.com).

The *Transhuman Space* web page can be found at [www.sjgames.com/transhuman/](http://www.sjgames.com/transhuman/).

### Get GURPS Free!

This book includes core roleplaying rules. It was designed for use with the *GURPS Basic Set* . . . but you can also use it with *GURPS Lite*, the condensed version of the core *GURPS* rules, found on pp. 207-238. We also offer *GURPS Lite* for free on our website! Just go to [www.sjgames.com/gurps/lite/](http://www.sjgames.com/gurps/lite/) to download the PDF version. Or, when you order anything from our website, you can request a free *GURPS Lite* with your order.

### Page References

Rules and statistics in this book are specifically for the *GURPS Basic Set, Third Edition*. Any page reference that begins with a B refers to the *GURPS Basic Set* – e.g., p. B102 means p. 102 of the *GURPS Basic Set, Third Edition*. Page references that begin with CI indicate *GURPS Compendium I*. Other references are BIO for *GURPS Bio-Tech*, CII for *GURPS Compendium II*, and VE for *GURPS Vehicles, Second Edition*.

For a full list of abbreviations, see p. CI181 or the updated web list at [www.sjgames.com/gurps/abbrevs.html](http://www.sjgames.com/gurps/abbrevs.html).



3

# ENCYCLOPEDIA OF TRANSHUMAN SPACE





*Vatican/TEN: Pope Zachary II, age 72, today announced his decision to eschew rejuvenation during an address to the Pontifical Commission on Human Longevity. He spoke of the inequalities in bionanotechnology between rich and poor nations, and urged an end to economic sanctions against the TSA. His parable of the bioroid and the octogenarian displayed the Pope's wicked sense of humor as well as the sensitivity to pan-sapient rights that has marked his office.*

*After lunch, the pontiff returned to more serious matters. "Transhumanist ideologies, which degrade Man by reducing him to an object while dissolving basic human rights, are an example of the worst abuse of science," he warned. He renewed the Vatican's firm opposition to the "singular or serial creation of mind without soul, at the service of Faustian ambition," and denounced cybergnosticism, condemning "those who wear the clothes of righteousness even as they bow before digital idols." This was likely aimed at the United States Congress, which next week votes on a health care bill with federal funding for clinics creating mind-emulation backups.*

*Zachary II's remarks attracted praise from several preservationist groups, including the Human Alliance, but were denounced as biochauvinism by the Church of Seventh Heaven, the largest Christian hyperevolutionist denomination.*

## CORE TECHNOLOGIES

Just as transistors, antibiotics, and airplanes affected the society of the late 20th century, certain technologies reshaped the world of 2100.

### ARTIFICIAL INTELLIGENCE

AIs are artificial intelligence software running on computers. AI refers to the capacity for sentience and intelligent action, but not necessarily self-awareness. AI labor is partially responsible for the increases in global productivity characteristic of the last half-century.

AIs in *Transhuman Space* differ from earlier *GURPS* concepts in being a function primarily of software rather than hardware. An AI can be housed in a machine body ("cybershell") or a living body controlled through computer implants ("bioshell").

There are three classes of AI:

*Nonsapient AIs* (NAIs) are capable of sentient behavior and can learn, but lack self-initiative, reasoning ability, empathy, and creativity.

*Low-Sapient AIs* (LAIs) are capable of self-initiative and a degree of empathy, but lack human-level creativity. Still, it can be hard to tell an LAI from a sapient AI just from conversation. There have been a few rare instances where an LAI (or gestalt of LAIs) evolved into a sapient AI.

*Sapient AIs* (SAIs) are capable of human-equivalent or higher sapience when run on appropriate hardware. This is sometimes referred to as "self-awareness." Sapient AIs are usually carefully raised by humans or human-programmed SAIs. This socialization process teaches them how to interact with humans. Most SAIs cultivate human-like personas. Sapient AIs almost always have names and many create human-like avatars (software images). Personal ownership of a sapient AI is licensed or restricted in many nations, and copying or modifying them without permission is generally illegal.

There are about as many AIs as people. Approximately one-third of the human population of Earth owns a nonsapient or low-sapient AI who serves as a constant personal companion, inhabiting a home computer or virtual interface (see *Augmented Reality*, below). The population of sapient AIs is smaller: there are fewer than 100 million in existence, primarily due to hardware costs and legal controls.

AIs are programmed to obey the law and their owners. NAIs and LAIs are generally seen as property, but views on sapient AI differ. The Islamic Caliphate considers SAIs to possess souls, and allows them to be citizens. The European Union and some space colonies also grant SAIs "human rights." Most other places disagree, and treat SAIs as property. Sapient AIs created outside the European Union or Caliphate are raised to agree with this view.

### AUGMENTED REALITY

This is the overlaying of virtual reality information onto a user's perception of the real world. Its basic element is a "virtual interface": smart glasses incorporating a computer, digital camera, visual head-up display, optical recognition software, cellular modem, and bone induction speaker, all controlled by an infomorph, typically a nonsapient or low-sapient AI.

The system recognizes objects (including faces) and situations, and provides a helpful stream of context-appropriate data, often as audio messages or text boxes in the user's visual field.

The user accesses the system through voice commands or a virtual reality screen (and when necessary, a keyboard) projected in front of him. Usually, the user just tells the AI what he wants it to do, or it anticipates his needs. However, the system's camera can also track the user's finger movements, allowing him to type, move objects, or simulate a mouse, trackball, or other controller in empty air. Virtual interfaces have rendered solid keyboards and computer terminals obsolete. With appropriate programs, the user can manipulate graphic images, or even use his finger as a pen or paintbrush. Infomorphs (AIs and mind emulations) use augmented reality without needing a virtual interface.



## Wetsurgeon

The governing structures of consciousness are sometimes called “wetware” in analogy to the software that controls computers. A *wetsurgeon* redesigns human and bioroid personalities. He may be a psychiatrist, neurosurgeon, or brainwasher. His tools include HyMRIs, brain implants, designer drugs, and brain bugs. A related specialty is the *identity architect*, who helps people suffering from amnesia, especially fragments, rebuild their past experiences . . . or create new ones. Useful skills include Biochemistry, Brain-Hacking, Electronics Operation (Medical), Memetics, Physician, Psychology, and Surgery.



## MUNDANE JOBS

Plenty of more “mundane” jobs exist. Some examples:

*Data Recycler:* Recovers obsolete electronic media and translates them into modern formats for archaeological study or profitable restoration.

*Genetic Counselor:* A social worker who helps bridge the generation gap between parents and their more radically modified children.

*He-Man:* Slang for a fusion tech, who works with nuclear fusion reactors, cryogenic fuels, dangerous magnetic fields, high pressures, liquid metal coolants, and so on.

*Pharmer:* An agronomist who specializes in raising genemod animals and crops.

*Synthespian:* An infomorph that can create a wide variety of roles in InVid productions. They are preferred to live actors in mass media, as they do not require salaries or other benefits.

*3D Printshop Manager:* An owner/operator of 3D printing shop or franchise.

*VT Worker:* An unskilled worker who uses augmented reality and virtual tags to perform skilled labor.

# Nonhuman CHARACTERS

*VESTA/TEN:* There has been a dramatic new development in the Exogenesis-Nanodynamics dispute. After last week’s standoff, when striking Exogenesis workers attempted to block the arrival of Nanodynamics’ “transition team,” the transnational has taken decisive action to restore control of their disputed property. The USV *Red Wing*, supposedly carrying a new negotiation team, docked at Vesta at 1800 hours GMT. The freighter instead disgorged a platoon of enforcers and RATS from the security firm Executive Decisions. Exogenesis workers were taken by surprise. The mercenaries fanned out through the station, securing vital areas and arresting known company dissidents. Scattered fighting was reported, but by 2100 hours, Exogenesis Station was in Nanodynamics hands.

None of the Exogenesis negotiation team could be reached for comment, but Nanodynamics spokesperson David Nakamura issued this statement: “The decision to hire Executive Decisions and take direct action was forced upon us. We believe that radical former Exogenesis workers were planning sabotage of the SAI macroframes, and possibly other areas of the station, such as life support. To save lives and protect property, we were forced to act.”

Nanodynamics’ takeover of Exogenesis assets was not complete, however. Six ex-Exogenesis spacecraft in deep space remain unaccounted for, and the status of outer-system outposts on Io and elsewhere is uncertain.

Humans, bioroids, uplifted animals, and infomorphs are all suitable as PCs. While clones, genetic upgrades, and parahumans are all considered “people,” the civil rights of infomorphs, bioroids, and uplifted animals remain unsettled. An entity acknowledged as human in one country might not be in another; see the *Pan-Sapient Rights Table* (p. 127).

## Cash and Points

If PCs upgrade or purchase new cybershells, infomorphs, or biomods during play, it’s up to the GM whether to require them to spend character points or to just increase their point value.

## RACIAL TEMPLATES

All characters other than “baseline” Earthborn humans have a racial template (see *Racial Generation*, pp. C1173-180), called a *model template* when referring to machines or software. Human racial templates are described on p. 115, bioroid templates on pp. 116-118, uplifted animal templates on p. 118, and infomorph model templates on pp. 119-120. (Infomorphs actually pick *two* templates: one for their digital mind, and one for the body that houses it.)



Each template comes with a point cost, attribute modifiers, and racial/model advantages and disadvantages, as explained on pp. CI173-180. Most templates also have *features*, which are worth no points but which may influence the character. An important feature of many templates is a *taboo trait* (p. CI176), which prevents the character from being created with certain advantages or disadvantages (unless already part of the template). Thus, a genefixed human with the taboo trait “genetic defects” couldn’t have Hemophilia.

Templates may include a date when they first became available and a dollar cost. The date limits the maximum age of the character. The dollar cost is not used when creating starting PCs, Allies, or Dependents; it’s for acquisitions during play, such as arranging to create a engineered child.

*New Templates:* More templates will appear in future *Transhuman Space* books. GMs may also create their own race/model templates using the rules on pp. CI173-180. Use the templates in this chapter as a guide to what is technically feasible. If more detail is desired, extensive guidelines on engineered, biomodified, and uplifted characters can be found in *GURPS Bio-Tech*. If using *Bio-Tech*, then modifications up to TL10 are available, with a few TL11-12 prototypes or experiments at the GM’s discretion; see *Experimental Procedures* (p. BIO127).

## HUMAN TEMPLATES

Baseline humans (who have *no* template) are common in Third Wave and not uncommon in Fourth Wave nations. In Fifth Wave nations, “baselines” are usually either immigrants from poorer countries or have the Age disadvantage.

### **Genefixed Human** **0 points**

**Features:** Taboo Trait (Genetic Defects). Add Taboo Trait (Unattractiveness) post-2035, and Taboo Trait (Mental Instability) post-2050.

**Date:** 2020.

At a minimum, most parents screen unborn children for any genetic “flaws” and, if they exist, have them fixed. A genefixed human is someone who has gone through this screening, even if no engineering was needed.

### **Floater** **-43 points**

**Attribute Modifiers:** ST -3 [-20]; HT -2 [-15].

**Advantages:** 3D Spatial Sense [10]; Free Fall +2 [2].

**Disadvantages:** Fragile (Not vs. bullets, -50%) [-10]; Social Stigma (Minority Group) [-10].

**Features:** Home gravity of 0 G. Height is 1’ greater than normal for his ST.

**Date:** 2028.

Floaters are baseline humans raised in zero-G or microgravity, but who lacked compensatory genemods (see *Tennin*, p. 117). Most grew up in poorer orbital or L5 communities.

They can also represent early Duncanites.

**I was born a  
baseline human,  
but I got better.  
– Raymond Garcia**

## HUMAN GENETIC-UPGRADE TEMPLATES

Genetic upgrades are the product of eugenic genetic engineering. A genetic upgrade is completely human, but his genes were selected to emphasize particular traits. Couples usually donate their own eggs and sperm, which are tweaked by the engineers and fertilized *in vitro*. Single, infertile, or gay parents can clone themselves or acquire needed eggs or sperm from gene banks. A child’s sex can be specified or left to chance. Once the upgraded, fertilized egg is ready, it can be implanted into a mother’s womb or raised in an exowomb. Two people sharing the same upgrade sequence are not twins: their gene donors determine unspecified traits such as facial structure and hair, eye, and skin color. A few representative templates are shown below. Dozens more exist. The dollar cost shown is what parents pay to create upgrade kids; the template can also be used for the children of two people with the same upgrade sequence. However, the process is delicate enough that if upgrades of different types mate with normal humans or each other, they’ll probably end up with a baseline human template.

### **Alpha Upgrade** **35 points**

**Attribute Modifiers:** DX +1 [10]; HT +1 [10].

**Advantages:** Attractive [5]; Disease-Resistant [5]; Longevity [5].

**Features:** No Appendix; Taboo Traits (Genetic Defects, Mental Instability).

**Date:** 2050. **Cost:** \$50,000.

The Alpha was the first commercially successful genetic upgrade certified to be error-free. It has been widely licensed and pirated. Careful eugeneering ensures an attractive, athletic, healthy individual. There are 40 million living Alphas.

*Olympian:* This upgrade possesses metabolic and glandular modifications to burn off excess fat and optimize crisis response. Add Combat Reflexes [15] and Very Fit [15]. **65 points** (2065; \$90,000).



# APPENDIX B: VEHICLES

## SPACECRAFT

Below are descriptions of some of the more common spacecraft in the *Transhuman Space* setting. See Appendix A for an explanation of design terms, statistics, and performance. Some additional notes:

**Crew:** These are standard crews rather than absolute requirements; some positions may be filled by cyber-shells or cyberswarms (which don't require cabins) – or a single highly skilled crew member may double up to perform multiple jobs.

**Facing:** This is noted parenthetically for armor, weapons, and fixed sensors. F is front, S is sides (combines right, left, top, and bottom), and B is back.

**Size Modifiers:** Two SMs are given for cylindrical hulls: the first is for width (vessel seen from front or back), the second is for length (seen from sides).

**Delta-V:** This was calculated using the simple formula (see p. 189).

### KAGOSHIMA-CLASS ORBITAL TRANSFER VEHICLE

The *Kagoshima* was built by Tenzan Heavy Industries in 2069, and is one of many workhorse OTV designs. Its powerful fission drive (using water for reaction mass) is capable of lifting the vessel from the moon's surface into lunar orbit with a typical load of 95 tons of cargo and 32 passengers. It can carry an extra load on its external cradles (but performance is calculated with them empty). It has a spherical hull 40' in diameter. Usual payload is 98.1 tons. The *Kagoshima* spacecraft are named after spaceports.

**Crew:** Commander/Pilot/Navigator (Astrogation, Electronics Operation (Communications), Electronics Operation (Sensors), Piloting (High-Performance Spacecraft)); Steward/Cargo Master (Freight Handling, Savoir-Faire).

**Design:** Sphere hull (64 spaces, metal-matrix composite, light frame); cDR/cPF 1/1 (titanium alloy armor).

**Modules:** Old cockpit; small PESA; small radar; 1 compact fission drive (water reaction mass); 38 tanks (water); 0.1 battery; 2 passenger seats; 1 external cradle (250 tons); 19 cargo (95 tons).

**Statistics:** EMass 155; CMass 538; LMass 823. Cost M\$11.58. cHP 38. Size Modifier +5. HT 12. Maintenance Interval: 5.88 hours. RRA 0.

**Performance:** sAccel: 0.23 G. Burn Endurance: 0.45 hours. Burn Points: 370. Delta-V: 1.14 mps. No air speed.

### MEIZI-CLASS PSU

The *Meizi* was designed by MAST in 2089 and entered service with Mars Interplanetary in 2091. It is now the most common commercial "fastliner" in service with space carrier fleets. The craft has proven extremely adaptable.

The *Meizi's* hull is a 200' × 50' cylinder. It has two 114' spin arms with attached 31.25' × 50' pods mounted near the vessel's front (providing 0.38 G spin gravity). The design can carry 295 tons of cargo and has two 141' × 141' radiator wings. Standard payload is 331 tons. Typical names include *Meifeng* (beautiful phoenix), *Meiling* (beautiful jade), *Meiping* (beautiful peace), *Meisong* (beautiful song), and *Meizhen* (beautiful pearl).

**Crew:** Commander/Pilot (Leadership, Piloting (Low-Performance Spacecraft)); Navigator/Co-Pilot (Astrogation, Electronics Operation (Communications), Electronics Operation (Sensors)); Ship's Doctor (Diagnosis, Physician); Engineer (Administration, Mechanic (Fusion Drive), Mechanic (Robotics), other Mechanic as appropriate); Stewards (Diplomacy, First Aid, Savoir-Faire); Recreation (Erotic Art, Performance). Typically, the crew is mostly bioroids.

**Design:** [Hull] Cylinder hull (800 spaces, foamed alloy, medium frame); cDR/cPF 6/5F, 1/1S, 1/1B (aluminum alloy armor). [Pod #1 and #2] Cylinder hull (125 spaces, carbon composite, medium frame); cDR/cPF 2/5F, 2/1S, 2/5B (foamed alloy armor). Hull radiators (20 ksf), radiator wings (40 ksf).

**Modules:** [Hull] New basic bridge; medium PESA; medium radar; 120 HI fusion pulse drive; 600 tanks (nuclear pellets); 2.5-MJ light laser tower [S]; 2.5-MJ light laser tower [S]; 4 cabin; minifac workshop; small entry module; large entry module; surgery; spacedock hangar (20' long, 20' wide, 25' high; 20 spaces); 35 cargo (175 tons). [Pod #1] 25 luxury cabin; 50 cabin; 2 hall; 5 cargo (62.5 tons). [Pod #2] 100 cabin; surgery; 19 cargo (57 tons).

**Statistics:** EMass 3,682; CMass 7,613; LMass 11,213. Cost M\$159.94. cHP [Hull] 540, [Pods] 135. Size Modifier [Hull] +6/+9, [Pods] +6/+5, [Radiators] +9. HT 12. Maintenance Interval: 1.58 hours. RRA 60.

**Performance:** sAccel: 0.06 G. Burn Endurance: 125 hours. Burn Points: 2,700. Delta-V: 82.5 mps. No air speed.



# GLOSSARY

The following specialized terms are used in the *Transhuman Space* setting.

## JARGON

**artificial intelligence (AI):** A computer program capable of intelligent behavior.

**augmented reality:** The use of virtual reality and wearable or implanted computer interfaces to overlay data on normal sensory perceptions.

**biogenesis:** Assembling a living thing using NANOTECHNOLOGY.

**biometrics:** The use of scanned physiological characteristics, such as DNA, the face, and finger-, voice-, and retina prints, for identification.

**biomod:** A biological modification added to a being after conception and (usually) after birth; e.g., NANOSYMBIONTS or a transplanted enhanced organ.

**bioroid:** A living humanoid that is assembled using BIOGENESIS.

**bioshell:** A biological body controlled by an INFOMORPH.

**bush robot:** A CYBERSHELL whose “fingers” branch into ever finer and smaller manipulators.

**Complexity:** Abstract rating of computer processing power. Each level represents a roughly tenfold increase.

**cryogenic:** Very cold; below -238°F.

**cybershell:** A physical body, larger than a MICROBOT, housing an INFOMORPH or capable of being teleoperated. Cybershells include various ROBOTS and computers.

**decerebrate:** Lacking higher brain functions.

**deep space:** Space beyond a planet’s or moon’s orbit.

**delta-v:** Velocity change; typically, the maximum speed a spacecraft can attain before exhausting its supply of reaction mass.

**downslink:** A brain implant that translates a digital copy of a person’s sensory experience back into a form that a human brain can perceive.

**emag:** Electromagnetic (gun).

**eugeneering:** Eugenic genetic engineering; the careful selection of specific traits to improve a species or correct defects.

**exowomb:** An artificial womb; a womb tank.

**farhauler:** A DEEP SPACE transport vessel, or one of its crew.

**fastliner:** A passenger spacecraft capable of rapid interplanetary journeys using fusion drive.

**fauxflesh:** Artificial, vat-grown meat.

**fragment:** An incomplete MIND EMULATION.

**genefixed:** A person born following a GENEFIXING process.

**genefixing:** EUGENEERING to fix hereditary defects or flaws.

**genemod:** Genetically modified.

**gengineering:** Genetic engineering.

**genetic upgrade:** EUGENEERING aimed at improving a person.

**ghost:** A MIND EMULATION program of an uploaded (human) personality.

**HyMRI:** Hypersensitive Magnetic Resonance Imaging.

**infomorph:** An AI or MIND EMULATION; a digital intelligence.

**inner system:** The solar system from the sun out to the orbit of Mars.

**InVid:** Interactive Video, a popular form of mass media.

**Lagrange Point:** Stable gravitational points created by the interaction of the Earth and the moon. L4 is 60° ahead of Luna’s orbit; L5 is 60° behind it.

**light-second:** The distance light can travel in one second: 186,000 miles, 300,000 kilometers, or 1/500 AU.

**Main Belt:** The asteroid belt between the orbits of Mars and Jupiter. (Sometimes known as simply “the Belt.”)

**meme:** The cultural analog of a gene. An idea, behavior, story, advertisement, or other concept that propagates from one person to another.

**memetic:** Pertaining to MEMES.

**microbot:** An insect-sized or smaller ROBOT.

**mind emulation:** An INFOMORPH that is a digital copy of a human mind; a FRAGMENT, GHOST, or SHADOW.

**nano:** Pertaining to NANOTECHNOLOGY. Also, NANOMACHINES.

**nanobot:** A cell-sized or smaller ROBOT. Most nanobots are engineered life forms rather than mechanical robots.

**nanofactured:** Manufactured using NANOTECHNOLOGY.

**nanomachine:** A NANOBOT or other cell-sized machine.

**nanosocialism:** A popular ideology advocating the ownership of patents, copyrights, and other information by the public rather than individuals.

**nanostasis:** A form of suspended animation.

**nanosymbionts:** NANOBOTS that perform beneficial services (such as cleaning arteries) within a living being.

**nanotechnology:** Technology pertaining to molecular-scale circuits, computers, ROBOTS, and engineered life forms.

**nanovirus:** A self-replicating form of NANOTECHNOLOGY designed for biological engineering.

**neurovirus:** A NANOVIRUS designed to affect the brain.

**nootropics:** Drugs designed to enhance intelligence.

**outer system:** The solar system beyond the orbit of Mars out to the Oort Cloud.

**panropy:** The reshaping of life forms to adapt them to other environments.

**parahuman:** A TRANSGENIC human.

**pharm:** Pharmaceutical; often applied to TRANSGENIC plants or animals ENGINEERED to manufacture drugs or other products within their bodies.

**posthuman:** An entity that has evolved beyond its humanity.

**puppeteer:** An INFOMORPH that takes control of a biological entity.

**rad:** A unit of radiation.

**robot:** A CYBERSHELL occupied by an AI.

**sapient:** Capable of reasoned thought, like a human.

**sapient uplift:** A nonsapient animal upgraded with BIOMODS or GENEMODS that make it SAPIENT.

**shadow:** An imperfect, nondestructive MIND EMULATION.

**slink:** Sensory link implant.

**slowhauler:** A DEEP SPACE transport designed for slow interplanetary journeys. Most slowhaulers are unmanned.

**specific impulse:** A measure of the performance of rocket engines; the number of seconds an engine operates on one pound of fuel while producing a thrust of one pound.

**teletrooper:** A soldier operating a remote-controlled military CYBERSHELL.

**transgenic:** Having genes from more than one species.

**transhuman:** A transitional state between human and POSTHUMAN.

**uplift:** The process of modifying a nonsapient animal to enhance its intelligence, communications abilities, or tool-using capabilities. Also used as a slang term for the resulting entity.

**upslink:** A brain implant that translates a person’s analog sensory experience into digital information.

**virtual interface:** A wearable or implant computer designed to house an INFOMORPH and use AUGMENTED REALITY.

**virtuality:** Virtual reality.



**v-tag:** A label linked to the WEB and viewable through AUGMENTED REALITY.

**Web:** The global data network, descended from the 20th-century Internet and named after the World Wide Web. Capitalized, it refers to Earth's Web.

**weblife:** An INFOMORPH that spends most of its time on the WEB, generally residing in an immobile computer body.

## SLANG

See *Jargon* (above) for definitions of technical terms.

**baumobot:** A nanny robot or an infomorph programmed to look after a child.

**belt:** The Main Belt.

**blackjacker:** A privateer, claim jumper, or space pirate operating in the Main Belt, Trojans, or Kuiper Belt. Derived from an incident in 2097 (see p. 16).

**Bollywood:** The heart of the global entertainment industry, in India.

**brainbug:** Popular term for nanodrugs that affect the user's brain chemistry.

**carbon rice bowl:** Derogatory reference to nanosocialist economies.

**cyberswarm:** A swarm of microbots.

**Deep Beyond:** All of space from the asteroid belt outward from the sun.

**elf:** A native of L5, or a poor immigrant to the outer system. From "L5."

**gunjing:** A cop or security guard.

**hir:** Address used for individuals of uncertain, neutral, dual, or polymorphic sexuality, including transgendered individuals, genderless AIs, and hermaphromorphs.

**kuang-shi:** A Chinese zombie; slang for bioshells.

**liumang:** Outlawed nanotechnology. Derived from a Chinese word for "biting insect," which also carries the connotation of "out-law."

**mangliu:** Martian slang for a migrant microgravity worker. Derived from a Chinese word for "floater" (in the sense of "itinerant").

**meat puppet:** Derogatory term for bioshells, especially those used as sex toys.

**memetically challenged:** Not with it.

**mobot:** Contraction of mobile robot.

**nanosoc:** A nanosocialist.

**postal:** Cutting edge – especially in regard to biological modification or genetic engineering. Derived from "posthuman."

**rabbit:** A native of Luna.

**shoumu:** Slang term for entering nanostasis. Derived from Chinese phrase for "wood of good fortune and long life," a euphemism for coffin.

**slinky:** A recording made of a slink experience.

**Tennin:** Japanese for "heaven people" or "angels." Used for individuals with calcium-hack species modifications in general, and *Tennin* parahumans in particular.

**Well, the:** The inner solar system from Mars to the sun.

**xox:** A mind emulation that is a copy of another mind emulation. Also used as slang for any form of copy. Pronounced "zox."

**xoxing:** Making multiple mind emulations of someone.

**xoxworkers:** A team of identical mind emulations working together.

**yuhangyuan:** Space navigator; Chinese term for space pilot.

**zhongdian renkou:** Chinese for "special population," a euphemism for bioroids.

## ABBREVIATIONS

See *Jargon* for definitions of technical terms.

**AI:** Artificial Intelligence.

**AKV:** Autonomous Kill Vehicle; a robot space fighter.

**ASIT:** Adjusted Sapience Intelligence Test.

**AU:** Astronomical Unit; 93,000,000 miles or 500 light-seconds.

**cDAM:** 100 hit points of damage. Thus, cDAM 3d is actually 300d.

**cDR:** 100 points of DR. Thus, cDR 3 is actually DR 300.

**cf:** Cubic feet.

**cPF:** Radiation protection factor (PF) effective against c-rads.

**CR:** Control Rating (see p. B249).

**c-rad:** Cosmic rays or other super-penetrating radiation.

**D:** Deuterium.

**DSOV:** Deep Space Operations Vehicle.

**ESA:** European Space Agency.

**ESV:** Executive Space Vehicle; a space yacht.

**E.U.:** European Union.

**G:** Gravity; a unit of 1 Earth gravity (e.g., 0.5 G is half Earth's gravity).

**GB:** Gigabyte; a measure of data storage equal to 1,000 megabytes.

**GEO:** Geosynchronous Earth Orbit.

**GMO:** Genetically Modified Organism (usually crops).

**He-3:** Helium-3.

**HEO:** High Earth Orbit.

**HSTV:** Heavy Space Transport Vessel; a large space freighter.

**Isp:** Specific impulse.

**kJ:** Kilojoule.

**kSF:** 1,000 square feet. Thus, 3 ksf is 3,000 square feet (sf).

**kW:** Kilowatt.

**L4:** The Earth-Lunar Lagrange 4 point.

**L5:** The Earth-Lunar Lagrange 5 point.

**LAI:** Low-sapient Artificial Intelligence.

**LC:** Legality Class (see p. B249).

**LEO:** Low Earth Orbit.

**M\$:** Million dollars.

**mps:** Miles per second. 1 mps = 3,600 mph.

**MW:** Megawatt.

**NAI:** Nonsapient Artificial Intelligence.

**NEA:** Near-Earth Asteroid. An asteroid whose orbit occasionally crosses Earth's orbit or which approaches within 1.3 AU of the sun.

**OTV:** Orbital Transfer Vehicle; a space bus or truck.

**PF:** Protection Factor (against radiation).

**PLAN-SF:** Peoples' Liberation Army Navy Space Force.

**PRA:** Pacific Rim Alliance (led by Australia, Japan, and Korea).

**PSV:** Passenger Space Vehicle; a liner.

**RSV:** Remote Survey Vehicle; a space probe.

**SAI:** Sapient Artificial Intelligence.

**SCV:** Space Control Vehicle; a deep space carrier.

**SDV:** Space Dominance Vehicle; a deep space cruiser.

**TAV:** Transatmospheric Vehicle; an aerospace plane.

**TB:** Terabyte; a measure of data storage equal to 1,000 GB.

**TCAV:** Transatmospheric Combat Air Vehicle; an aerospace fighter.

**TEN:** Telepresence Experience Network; a news network.

**TSA:** Transpacific Socialist Alliance (led by Indonesia and Peru).

**UCAV:** Uninhabited Combat Air Vehicle; a cybershell aircraft.

**USAF:** United States Aerospace Force.

**USV:** Utility Space Vehicle; a multipurpose space transport.



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