

Space Ship technology in Roaring Rockets

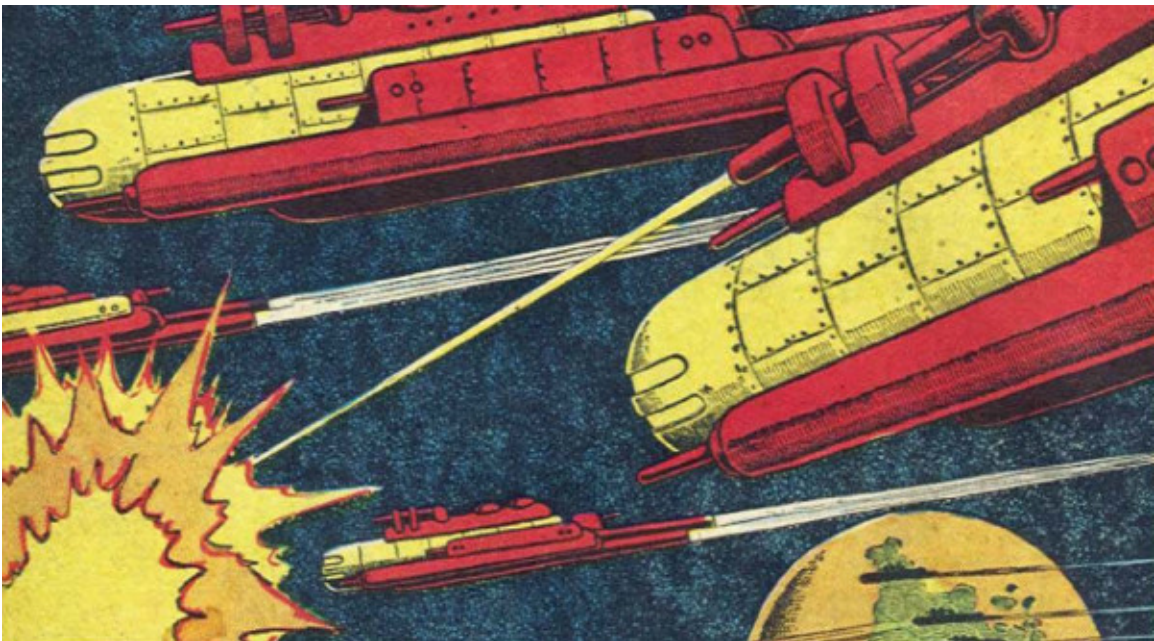
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Basic Systems

- **CREW:** SPACE TRAVEL IS WORK, MUCH LIKE FLYING AN AIRPLANE. ALL OF THE CHARACTERS MUST PULL 12-HOUR SHIFTS PILOTING, NAVIGATING, CHECKING THINGS, MAINTAIN THINGS, AND DOING HOUSEKEEPING LIKE COOKING & CLEANING.
- **STREAMLINING:** SPACESHIPS ARE STREAMLINED AND HAVE FINS FOR FLYING THROUGH ATMOSPHERE AT SEVERAL HUNDRED MILES PER HOUR. SPACE HAS THE OCCASIONAL HYDROGEN MOLECULE, SO USING THE OVERDRIVE IS QUITE LIKE FLYING THROUGH ATMOSPHERE. FAST SHIPS NEED TO BE MORE STREAMLINED, AND SLOW ONES LESS SO. THE LESS STREAMLINING, THE MORE SPACE IT HAS FOR THINGS LIKE CARGO. SPACE SHIPS NEED TO SLOW DOWN IN NEBULAS OR THEY WILL OVERHEAT.
- **POWER PLANT:** THE POWER PLANT GENERATES ENERGY FOR THE REST OF THE SYSTEMS.
- **FUEL:** SPACECRAFT DO NOT USE FUEL. THEIR POWER PLANTS TAKE A SMALL QUANTITY OF **RADIUM**, WHICH POWERS THEM FOR ABOUT A MONTH OF CONTINUOUS USE. A SPACECRAFT SITTING IDLE DOES NOT USE RADIUM. RADIUM SLOWLY DECAYS, AND YOU LOSE HALF OF THE REMAINING RADIUM EVERY 7 YEARS. A RADIUM RECHARGE INVOLVES A TEAM OF SKILLED MECHANICS SPENDING A DAY TAKING APART THE POWER-PLANT AND REBUILDING IT. THIS IS NOT SOMETHING THE CREW CAN DO ON THEIR OWN.
- **TESLA ENGINES:** THE ENGINES SHOOT SPARKS OUT THE BACK WHEN THEY OPERATE. THEY PUSH THE SHIP THROUGH SPACE.
- **FASTER-THAN-LIGHT:** INTERSTELLAR SPACECRAFT HAVE AN **OVERDRIVE** THAT LETS THEM COVER ABOUT A LIGHT-YEAR EVERY DAY. SOME VESSELS GO FASTER OR SLOWER THAN THAT. A FAST SPACECRAFT CAN GO 2 LIGHT-YEARS IN A DAY. THE OVERDRIVE IS CONNECTED TO THE ENGINES, AND CANNOT FUNCTION WITHOUT THEM.
- **GRAVITY & HOVERING:** SPACECRAFT HAVE ARTIFICIAL **GRAVITY GENERATOR** PLATES IN THEIR FLOORS. THEY LET THE CREW OPERATE IN NORMAL GRAVITY INSTEAD OF ZERO-G. ONCE THE POLARITY IS REVERSED, THE SHIP CAN HOVER NOISELESSLY OVER PLANETS WITH GRAVITY. THE POWER-PLANT MUST BE WORKING TO USE THE GRAVITY-PLATES.
- **SCOPE:** THE SCOPE IS LIKE A COMBINATION RADAR, FLIR, AND TELESCOPE ON A TV SCREEN. IT CAN DETECT OBJECTS IN SPACE LIKE A RADAR, AND IT CAN ZOOM IN ON THINGS LIKE A TELESCOPE. BUT NOT BOTH AT THE SAME TIME. FLIR MODE USES INFRA-RED TO PICK UP HEAT SIGNATURES. MOST SHIPS WITH A CREW OF MORE THAN 2 HAVE A SCOPE. IT IS USUALLY POSITIONED SO THE COPILOT CAN USE IT, OR A THIRD CREWMAN COULD USE IT INSTEAD.
- **INTERSTELLAR RADIO:** GOES 5-10 LIGHT YEARS AND PROVIDES INSTANTANEOUS COMMUNICATION. MOST MEDIUM AND LARGER SPACECRAFT HAVE ONE.
- **CYROCHAMBERS:** PUT SOMEONE IN COLD SLEEP. THEY ARE USED TO TRANSPORT PRISONERS, INJURED PEOPLE, AND DESPERATE PASSENGERS. TIME PASSES VERY SLOWLY FOR PEOPLE FROZEN IN A CRYOCHAMBER. THE PROCESS IS SAFE BUT UNPLEASANT; YOU WAKE UP FEELING LIKE YOU HAVE THE FLU FOR A FEW DAYS. NOT ALL SHIPS HAVE CRYOCHAMBERS.
- **SELF-SEALING BULKHEADS:** THESE SEAL SMALL LEAKS AND TURN LARGE HOLES INTO SLOW LEAKS THAT CAN BE PATCHED. IF A SPACECRAFT IS SUDDENLY DAMAGED, THE SELF-SEALING BULKHEADS GIVE THE CREW ENOUGH TIME TO PUT ON SPACE SUITS.
- **UNDERWATER:** A SPACE SHIP MAKES A PRETTY GOOD SUBMARINE, BUT CANNOT GO DEEP (JUST 150 FEET OR 50M). SPACESUITS MAKE ACCEPTABLE DIVING SUITS DOWN TO THIS DEPTH AS WELL. MOST DOMED UNDERWATER CITIES ARE NO DEEPER THAN THAT.
- **LANDING GEAR:** THERE ARE TWO CATEGORIES OF SHIP BASED ON HOW THEY LAND. BELLY-LANDERS USUALLY HAVE SKIDS. TAIL-SITTERS USUALLY HAVE TAIL-FINS THAT DOUBLE AS A LANDING TRIPOD.

Fighting systems

- **Size:** Fighting ships are not big. A power plant that takes a lot of damage while generating power may explode like in the movies. Nobody wants to lose a big expensive ship to a lucky hit, so most fighting ships are the size of an airliner or smaller.
- **Ray gun:** Shoots an energy ray. It can be set to destroy or disrupt. Destroy shoots holes in the target. Disrupt causes the system it hits to cease functioning for a while.
- **Cannon:** It fires exploding shells, but does not shoot as far as a ray gun.
- **Autocannon:** A smaller cannon that fires lots of shells quickly.
- **Deflector:** A deflector, if properly angled, can deflect a ray gun hit. There is a lot of skill involved in doing this. One deflector can attempt to deflect one ray shot at a time.
- **The hull:** Bullets & rays from pistols & rifles bounce off of the hull of medium and larger spacecraft.



Military equipment

- **Coil gun:** This is an ELECTROMAGNETIC LAUNCHER THAT SHOOTS A ROD OF METAL REALLY FAST. IT TYPICALLY GOES IN ONE SIDE OF THE TARGET AND OUT THE OTHER. NOT EVEN ARMOR STOPS IT. A COIL GUN RUNS DOWN THE LENGTH OF THE VEHICLE, WHICH MUST BE BUILT AROUND IT. NON-MILITARY VEHICLES *could* CARRY THIS, BUT DO NOT FOR PRACTICAL REASONS.
- **Torpedo:** A ROCKET TORPEDO IS A SHORT-RANGE SINGLE-USE WEAPON. MULTIPLE TORPEDOES CAN BE LAUNCHED AT A TARGET IN A SALVO.
- **Missile launcher:** MISSILES ARE RADAR GUIDED. THEY ARE NOT EFFECTIVE AT SHORT RANGE BECAUSE THEY NEED TO TRACK THEIR TARGET. EACH LAUNCHER HAS A SMALL TARGETING RADAR AND HALF A DOZEN OR MORE MISSILES THAT MUST BE FIRED ONE AT A TIME. LIKE ALL WEAPONS, ITS ABILITY TO HIT A TARGET DEPENDS UPON THE SKILL OF THE OPERATOR. THERE ARE NO FIRE & FORGET MISSILES IN THIS GENRE.
- **Bombard:** THIS BIG WEAPON GOES ON LARGE WARSHIPS AND ARE USED TO MERCILESSLY BOMBARD TARGETS ON A PLANET.
- **ECM:** THIS SYSTEM INTERFERES WITH MISSILES AND OTHER HOMING WEAPONS, POTENTIALLY CAUSING THEM TO MISS. THERE IS A LOT OF SKILL INVOLVED IN DOING THIS. ONE ECM CAN ATTEMPT TO DEFLECT ONE MISSILE AT A TIME.
- **Force field:** A FORCE FIELD IS NOT A SMALL SYSTEM, AND IS ONLY FOUND ON SOME MEDIUM AND LARGE SIZED WARSHIPS. IT BLOCKS ONE RAY HIT AT A TIME, AND ALWAYS WORKS. SO IF THE SHIP TAKES A SALVO OF RAY BEAMS, THE FORCE FIELD WILL BLOCK ONE OF THEM. FORCE FIELDS CANCEL EACH OTHER INSTEAD OF COMBINING, SO NO SHIP HAS MORE THAN ONE.
- **ARMOR:** ONLY BIG SLOW SHIPS HAVE THIS. IT REDUCES THE DAMAGE OF EVERY HIT. THE WEIGHT PENALTY OF ARMOR IS SIGNIFICANT.

