Hand Held Maneuver Unit 20kg Maneuver Jet Pack 60kg Spring Asssisted Joints 3kg Russian Space Shoes 1kg Magnetic Shoes 8kg Accordion Easements Agility+1 Fatigue? 'Bespoke' Tailoring [Agility+2, fine-motor tasks +4, to-hit +2, fatigue -?] Cast Gloves fine-motor tasks +3, to-hit +2 Heated Gloves fine-motor+4, to-hit +1, Space Mittens fine-motor+1 Pressure Stabilizer Agility+1 Fatigue? Jump Shocks Hand Held Maneuver Unit Maneuver Jet Pack Spring Asssisted Joints Fatigue? **Russian Space Shoes** Magnetic Shoes

3. Space Weapons (Catalog)

Space is dangerous! If it isn't the cold, the heat, the lack of air, exploding engines, corrosive gas leaks, or overcharging engine mechanics, it's a Free Station gang or some terrible unknown from an ancient relic. Sometimes a quick wit and a fast ship aren't enough, and you might need some firepower to back your play. ACME is pleased to offer a fine selection of the finest firearms (and other weapons) in the Solar System. If you're defending your claim, fighting your way into a syndicate hideout, or just hunting the mythic Space Whale, you'll find no better companion than the ACME Weapons Department.

Don't accept substitutes! These weapons aren't just terrestrial guns with a shiny finish made to look like a Spacer's gun; these are real Weapons of the Void. Each one is designed from stock to muzzle to work flawlessly in vacuum. While other, lesser, catalogs may claim that their wares are sufficient, they simply can't work in space. The last thing you want is to find that your sights won't work with your space helmet. Or that your gun overheats after a few rounds. Or that the whole thing turns to a pile of parts after a few thermal cycles. Or that a gun built to handle everyday terrestrial grit grinds to a halt with just a touch of fine lunar dust. If you need results, trust the ACME Weapons Department.

3.1. Don's Gun

An All-purpose gun for the hazards of space! Donald's gun has been a trusted longarm from Venus to Mars. One of the most handsome smoothbores, it features a lean look that also helps with thermal dissipation. Copper highlights on the magazine and breech, a bronze vacuum deposited layer on the receiver, topped with a steel barrel and muzzle brake make for a fierce-looking yet refined weapon. The grip, stock, and handguard are covered in space-grade Venusian CAB silk. A bold copper radiator crowns the barrel.

But, this gun isn't just for looks. It features a high-grade gas-operated long-stroke auto-repeater action, capable of firing 145 rounds/minute. Its fine thermal design allows a full-speed burst of 77 rounds before overheating (in standard vacuum conditions) or sustained fire of 20

rounds/minute. If that's not enough for you, the quick-change barrel can be swapped in as little as 15 seconds. The low mass projectile and muzzle device reduce recoil to only 1.6J of free recoil energy per round – ensuring that you don't become your own propulsion system when you fire. The 85 grain (5.5g) projectile speeds towards your target at over 570 m/s. **Every aspect optimized for efficiency.** The Don's custom cartridge propellant is specially formulated to give a slow burn, reducing barrel pressure and allowing a lighter barrel. **Lots of options for a Telescopic sight**. Precision optics are just the start of the best sighting system on the market. In the "Straight Shot" model, optical coatings and a gold-plated adjustable sunshade provide easy scanning and sighting. The eyepiece is offset 12cm up and 5.5cm horizontally from the barrel, so it works with most space suit helmets. In the "Periscope" model, a more complex optical sight keeps the objective lens close to the barrel to reduce parallax while keeping the eyepiece in a convenient location.

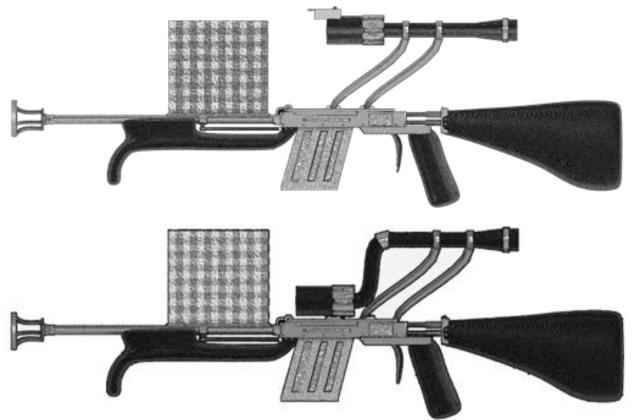


Figure 5 Don's Gun with "Straight Shot" (above) and Periscope (below) sights

Don's Gun: "Straight Shot"	£16 17s 0d
Don's Gun: "Periscope"	£17 14s 0d
Don's Gun: Spare Barrel	£1 5s 15d
5x48mm/8mm cartridge (Box of 100)	\$2.63
Don's Gun: 4.2kg (loaded) 3.9kg (unloaded)	
5x48mm/8mm cartridge (Box of 100): 1.42kg	

3.2. Cei Space Gas Rifle

The Gun that Won the Battle of Careiro, Now Built for Space! Amerigo Cei-Rigotti's incredible invention is now available in a version optimized for the rigors of space. The Mark IV Cei Space Gas Rifle has benefited from the lessons of almost ten years of development and deployment in the field. The accuracy and reliability problems you may have heard about are no more! The gun has proven itself in deadly combat on the Venus Free Station and can now keep you safe!

A Solid Pedigree. Like its terrestrial cousin, the Cei Space Rifle is a gas-operated, magazine-fed rifle. It uses the same 6.5×52mm Mannlicher–Carcano cartridge. Though this blunt bullet has been criticized for its poor aerodynamics, that is hardly an issue in space.

Not just a reworked ground gun, a complete redesign for Space! Unlike some guns that are little more than a new coat of paint on an old repeater, every aspect of the Cei Space Rifle is (re)designed for space. Every material has been analyzed and, if needed, changed to avoid vacuum welding. All oils have been replaced with dry lubricants so that they won't evaporate. A small muzzle device reduces recoil. Minimal rifling in the barrel facilitates thermal transfer while still providing stability if used in the atmosphere. Manufacturing tolerances and gas vents have been improved to reduce the chance of dust fouling.

Revolutionary Vortex Cooling brings unparalleled thermal performance! The barrel is encased in a coolant water sheath and radiator. As the barrel heats, some of the water boils into steam and (after being separated from the liquid water) is vented. To keep the steam bubbles from sticking to the barrel, with every shot, a small amount of propellant gas is injected through a series of angled baffles and into the coolant water, creating the patented 'Vortex' and ensuring the barrel stays in contact with the maximum amount of coolant. As a result of this comprehensive cooling solution, the Cei Space Gas Rifle can fire for as long as the ammo (and cooling water) holds out! **Options** Several customized versions are available to best suit your style:

- "The Bowman": The standard trigger is replaced with a horizontal "crossbow"-style trigger for easier use in heavy gloves
- "Harness Ready" mounting points for several harnesses (see 3.14.3) are included. A button-actuated pneumatic cord replaces the trigger for extra stability.
- Belt feeder & water jug attachment if you can fire as long as the ammo lasts, maybe you *should* fire as long as the ammo lasts. It contains an adapter to convert from the detachable magazine to an ammunition belt and a 5kg water reservoir (sufficient for over 1800 rounds).
- Periscope sight: Though the standard sight comes with a parallax-compensating reticle, an angled periscope-style sight puts the objective lens closer to the barrel, reducing parallax.

Cei Space Gas Rifle	£28 13s 0d
Cei Space Gas Rifle, Crossbow Trigger	
Cei Space Gas Rifle, Harness Ready	
Belt Feeder & water jug attachment	
Cei Space Gas Rifle, Periscope Sight	
6.5×52mm Mannlicher–Carcano (Box of 100)	
	20 105 0 u

Cei Space Gas Rifle: 5.24kg (with ammo and water) 4.6kg (empty)

6.5×52mm Mannlicher–Carcano Box: 2.64kg



Figure 6 Cei Space Gas Rifle

3.3. Borchardt S94

The Finest Pistol On any Planet or major planetary body. Designed for the rough and tumble of Space's more lawless quarters, this superb piece is small but packs a punch. Its repeating action can spit out rounds at a blistering speed, or you can fire single shots with deadly accuracy. **Designed by the incomparable Hugo Borchardt,** inventor of the revolutionary Borchardt C-93, this pistol is manufactured in the Ludwig Loewe, Rutka, & Company factory on Venus using the latest babbage-controlled machines. With a classic combination of Venusian precision and Tellurian production know-how, this is the first gun to compress an automatic self-loading repeating action into a handheld frame.

Solidly built. The frame is made from solid drop steel. The barrel is made from the highestgrade Earth steel machined with precision Naxlii techniques and welded to an aluminum-copper radiator. All jointing is quadruple for additional strength. All this in less than a kilo! **Easy to maintain.** High-profile frame screws make it easy to disassemble and assemble. It uses

Easy to maintain. High-profile frame screws make it easy to disassemble and assemble. It uses standard 7.6×10mm ammunition, readily procured at any orbital depot.

Elegant styling. The S94 isn't just a dull hunk of metal that shoots bullets. Attention has been paid to every aspect of its appearance. The handgrip is CAB lacquered red silk with iron shavings, embossed in copper over Venusian pearl inlay. Any accomplished gunsmith can customize its appearance.

Borchardt S94£4 2	.0s 0d
7.6×10mm, Smokeless (Box of 100)£0 1	5s 0d

Borchardt S94: 1.08kg (loaded) 7.6×10mm: 640g



Figure 7 Borchardt S94

3.4. Weltraumkanone We.6

The Gun That Killed the Space Beast! This is the very same model gun that the 3rd Howland Expedition used to combat the dread Space Whale! Descended from heavy industrial kiln guns, the Weltraumkanone We.6 is a powerful and reliable weapon. Superbly engineered by Waffenfabrik Mauser KGaA, this gun answers the requirements of every shooter who desires a high-class, reliable, automatic weapon for the space environment.

Powerful and Fast, Firing over 60 11g bullets per minute, each at an astounding 955m/s, this gun can take down the largest of targets. Its water-cooling system keeps the barrel and chamber cool. It's steam/water separation system keeps it fed. The smooth barrel and custom formulated ammunition propellant radically reduce the heat load; its oversized radiator radiates what heat is left.

Convenient Every aspect of this device has been tuned for your convenience.

- The barrel can easily be removed thanks to its quick-change button latch.
- The magazine contains both ammunition and the replacement water supply in the same package.
- The telescopic sight is highly adjustable to fit any spacesuit helmet and easily removable if not needed.
- An oversized muzzle device is included to reduce recoil to acceptable levels.



Weltraumkanone We.6	£72 3s 0d
10.3×97mm 12.4mm base (Box of 100)	\$7.79
	·····
10.3×97mm Box: 3.06kg	
Weltraumkanone We.6: 9.46kg (loaded) 8.8kg (unloaded)	

3.5. skogarce'a Crossbows

The favorite weapon of the ancient world, now reborn on the forefront of space technology! Over the centuries, the venerable crossbow has proven its worth on Earth and Venus. Though simple in concept, a well-crafted crossbow can be a powerful weapon. With their low recoil and near-immunity from many of the mechanical hazards of space (dust, lubricant evaporation, etc....), the lowly crossbow is becoming fashionable with Spacers. The skogarce'a crossbow is produced by the finest craftsmen of the Marbec Valley using the finest Venusian materials and knowledge. Each bow is strung with fibers from the Venusian Giant Sloth. These slurbows fire unfletched 50-gram darts from a polygonal rifled barrel – imparting some stabilization for their most potent rocket rounds.

Warning! As of this catalog's publication date, the skogarce'a crossbow does not fall under the weapons restriction ordinances of US Orbital Customs or the Victoria Regina Space Station. Please use responsibly.

We offer two fine crossbows of this make.

The Latchet Slurbow has a built-in lever that makes its 500N draw force simple enough to tension even in a bulky spacesuit (Figure 9).

The Cranequin Slurbow offers more power with a 2200N draw force mechanism (Figure 10). Unlike the windlass crossbows (still popular in less enlightened regions), the cranequin uses a

sturdy mechanical geared ratchet-winder – avoiding any exasperating cords prone to becoming tangled at the wrong moment!

A variety of specialized bolts and accessories are offered:

- Scythe Bolt: Sharp blades on folding arms are attached to the bolt's body. When fired, they are flung out and locked into position by centrifugal forces. Perfect for cutting through tangled rigging. Warning: blades are incredibly sharp and can seriously perforate soft suits. Please use responsibly.
- **Explosive Bolt**: Using the remarkable new "graze" impact fuse, this explosive-tipped bolt is perfect for blasting through dense, tangled rigging or other obstacles. To use, simply remove the safety wire and cap from the end of the shell, gently remove the primary arming pin to free the internal shutter, tenderly fold the secondary arming hammer forward, and gingerly place the bolt in the barrel. **Warning**: explosive bolts are highly volatile. Please use responsibly.

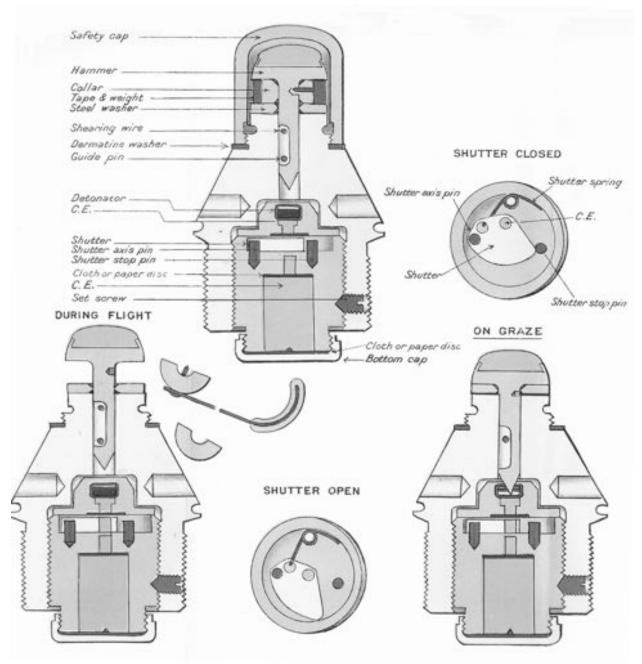
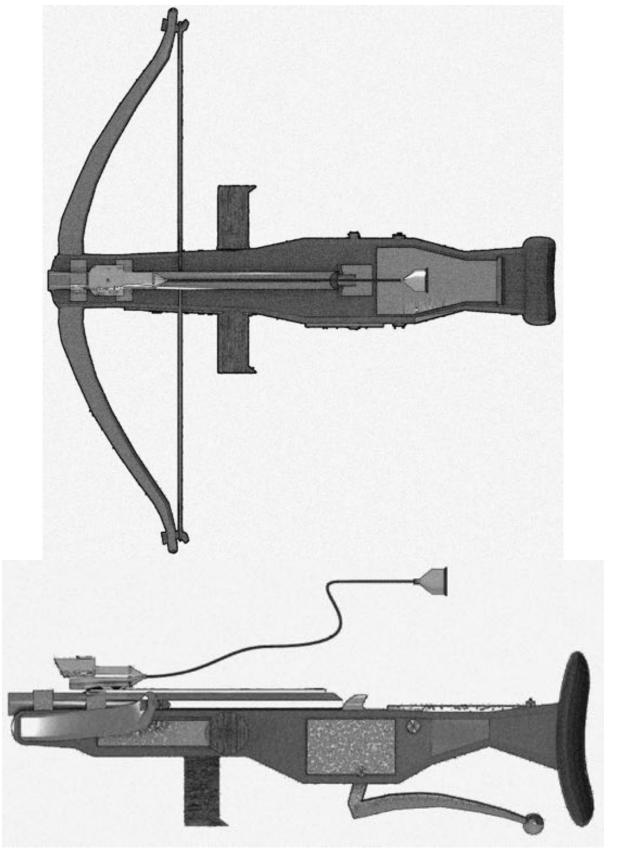


Figure 8 Explosive bolt fuse diagram from our easy-to-use instruction manual

- Safety Grapple Bolt: The regular bolt is replaced with several small, barbed hooks attached to a strong rope. When fired, these can be used to secure one end of a rope to an obstruction temporarily. Comes with 10m of *Musa Veneris* rope rated to 1.5 kN (153 kg at 1g).
- **Rocket Bolt**: A most ingenious projectile, these Venusian Rocket Bolts accelerate the bolt to an incredible speed. Once armed, the sudden acceleration of being launched will trigger a short fuse that will ignite the solid rocket.
- Flexible Optical Sights: An exceptional and mysterious device! A telescopic lens is attached to the crossbow, and a flexible tube is connected to an eyepiece. By unknown

Venusian artifice, the flexible tube actually **bends** light, allowing an unobstructed view from the lens – and to your target! Perhaps one day, Earthly science will be able to understand and even replicate this device, but until then, we are still proud to offer it to you.

Latchet Slurbow	£5 19s 2d
Cranequin Slurbow	£8 2s 1d
Regular Bolts (Box of 100)	
Scythe Bolts (Box of 100)	\$4.99
Explosive Bolt (Box of 100)	\$9.52
Safety Grapple Bolt (Box of 3, 10m rope)	\$1.89
Rocket Bolt (Box of 10)	\$3.93
Flexible Optical Sights	
Latchet Slurbow: 5.6kg	
Cranequin Slurbow: 7.5kg	
Bolts Box: 50 grams per bolt	
Safety Grapple Bolt 250g per bolt+rope	





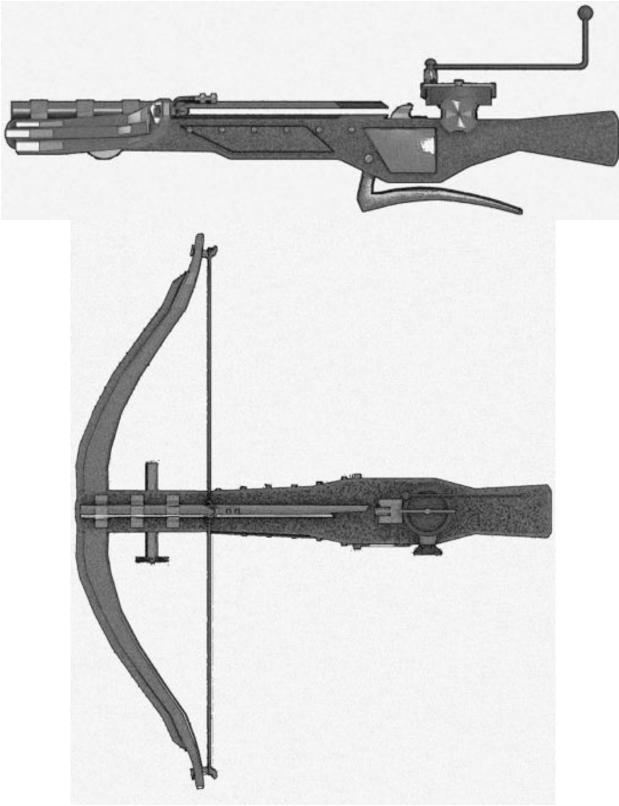


Figure 10 Cranequin Slurbow

3.6. Mannlicher-Roth Recoilless Gun

Defeats the Spacer's Great Enemy: Recoil! The seasoned space combatant knows that while 'recoilless' rifles are still in their infancy on the ground, they have found their true calling in the skies! Carried over the shoulder, this weapon features a precision-crafted rear nozzle that redirects some of the impulse that accelerates the bullet. Combined with a muzzle device, the total recoil is reduced to less than half a Newton-second.

Expertise. This gun is constructed by the Mannlicher-Roth company and builds upon their expertise with rotary magazines. Each article is made under the direct supervision of Dr. Gustaf de Laval, member of the Royal Swedish Academy of Sciences and inventor of the convergent-divergent nozzle that bears his name.

Reliability. From its easy-to-grip forward charging handle to its rotary magazine, the Mannlicher-Roth has a well-deserved reputation for reliability. The telescopic sights are mounted on a solidly built reinforced trapezoidal mount, so you won't need to readjust them every time the gun is bumped. The revolver-style rotary magazine has a simple and reliable mechanism that is practically immune to dust.

M1900 Now Available! The previous version used a simple gas countermass ejection. While effective, it creates a large (50cm) 'danger zone' behind when it fires. The new M1900 version uses a glycol countermass cartridge that reduces the danger zone to less than 30cm. Available in long-barrel and carbine versions.

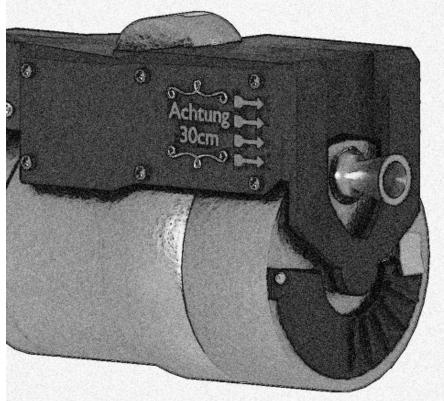
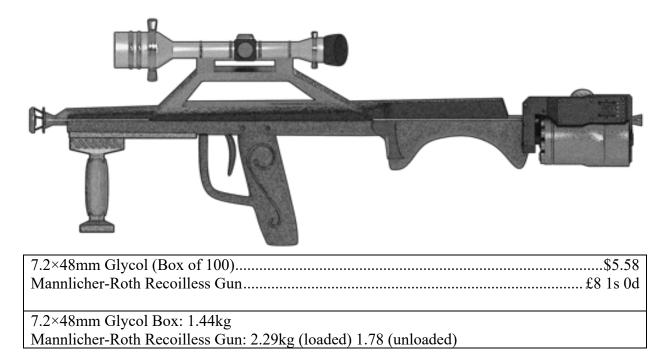


Figure 11 3.6 Mannlicher-Roth Recoilless Gun rear showing Quick-load hatch for "half-moon" clip

Quick-Load. Each weapon comes with a half-moon reloading clip for quickly reloading up to five cartridges at once.



3.7. Spardi Sensa "California Special" Large Recoilless

From a Pioneer in Recoilless Technology – a new Frontier in Weaponry! The Spardi Sensa Recoilless Rifle – also known as the California Special – was developed under contract for an isolated asteroid colony but is now available on the open market. Though its 12.7mm x 99mm cartridge can pack a devastating punch, its anti-recoil system reduces the kick to a feather's touch. Like the Mannlicher-Roth, it uses a revolver system. But, due to the larger cartridges, it includes a small gas-bypass system to effortlessly rotate the magazine and seal it to the barrel before firing. With the revolving cylinder and gas ejection port safely over your shoulder, you're protected from blowback.

Type A. Compact and powerful, the Type A gun (Figure 13) is a favorite of the central security services of the Venus Free Station. It features an adjustable foregrip and a two-stage muzzle device to reduce recoil.

Type B. Using the same cartridge as the Type A, this longer variant is a favorite of several independent security services on the Venus Free Station (Figure 14). A semi-periscope sight reduces parallax (Figure 12). It has moderate rifling to improve accuracy in atmosphere and has seen some use on Venus and Mars. A new labyrinthine seal on the rotating cylinder decreases pressure loss. It includes a lever for manually closing the seal. Advanced babbage modeling and optimization have reduced the recoil to almost imperceptible levels. Thermal performance is improved, allowing bursts of over 60 rounds to be fired before overheating.



Figure 12 Semi-periscope Telescopic Sight

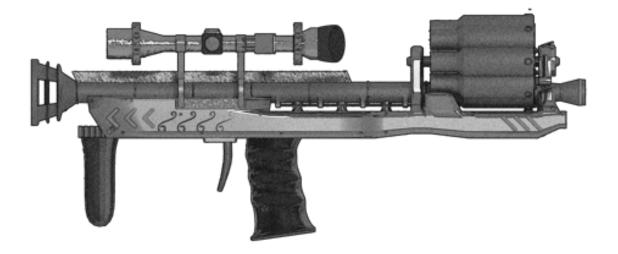


Figure 13 Spardi Sensa Type A



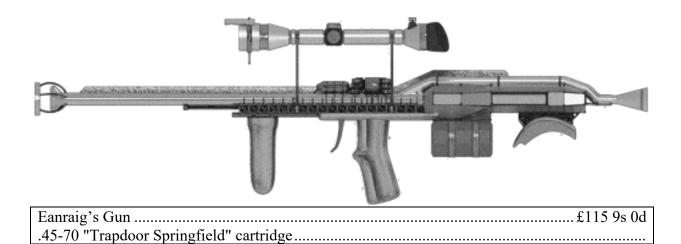
Figure 14 Spardi Sensa Type B

Spardi Sensa Type A	£17 8s 0d
Spardi Sensa Type B	
12.7mm x 99mm Recoilless	\$12.02
12.7mm x 99mm Box: 11.58kg	
Spardi Sensa Type A: 6.87kg (Loaded) 5.5kg (Unloaded)	
Spardi Sensa Type B:	

3.8. Eanraig's Asteroid Gun

The Rare Hand-Crafted Automatic Recoilless Gun! The Gun that won the Jump Wars! This fine specimen is a classic example of the hand-built weapons that gunsmiths from the Atiras Astroids to the Main Belt have built to defend their claims from all comers. Each one is crafted with unparalleled ingenuity and attention to detail.

The Hero of Big Horn! An unknown engineer designed this superb example of the breed during the height of Asteroid Fever. We were lucky enough to acquire the plans, signed only with the *nom de armurier* "Eanraig", after a fierce bidding war from other interested parties and collectors. Variants of this model have been used in such conflicts as the Battle of Big Horn, the "10 in 5" Atria gunfight, the Alhambra Shootout', and the Trojan Depths Paymaster Robbery, so not only is it battle-tested, but it is of great historical importance. After extensive analysis by the top weaponsmiths in the solar system, it has entered serial production. The factory is located on none other than Atira colony – home of the best gunsmiths (and gunslingers) in the Void. **Superb Design.** Firing the .45-70 "Trapdoor Springfield" cartridge, this weapon can unleash a whirlwind of over 200 rounds per minute. Attention to thermal detail means this rate can be sustained indefinitely. It comes with a unique high-capacity double drum magazine. A superbly designed rear gas diverter and muzzle device mean this gun, amazingly, has a slight **negative recoil**!



3.9. TSG1



Earther Ingenuity and Venusian Tradition! Though Earth is no stranger to spring-propelled guns, it is the Venusian gunsmiths who have made them a high art. The remarkable elastic properties of the Venusian Mantis Shrimp tendon and the metallurgical prowess of the clouded planet have no equal. It seamlessly blends the best of both Earth and Venus weapon traditions. From Venus, it inherits one of the most powerful springs imaginable. Harvested from the Mantis Shrimp at significant risk (and cost), this material has a Young's Modulus close to a million million Pascals! Traditional Venusian weapons use this material to great effect but at a cost in user effort. Weapons like the Pruni Spring Crossbow use a fixed hand tensioned spring. This limits both the energy and rate of fire of a weapon. In contrast, the <TSG1> borrows from the latest Earth technology and encases the spring and projectile in a cartridge. Each spring is pretensioned at the factory and contains almost 200 Joules of energy held in check by a titanium composite support mechanism. When the trigger is pulled, hammers disengage the supports releasing the projectile. As the projectile flies forward, the lightweight bolt flies back cocking the hammers and loading in the next round from an external feed or detachable magazine. The low weight of the bolt and the simple mechanism allow an extremely fast fire rate.

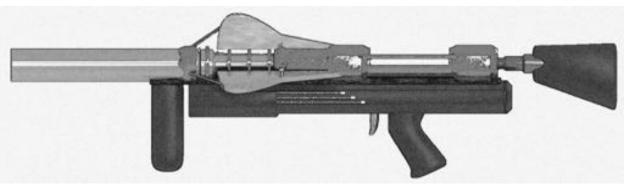
Ready for Space. While it lacks the big "bang" of a conventional chemical propellant gun or rifle, spring guns make fine space weapons. The lower speed of the projectile is less of a concern when there is no gravity or air resistance. You'll appreciate the lower recoil and lack of flash. The absence of hot combustion gasses means the gun is not thermally limited when firing a sustained salvo. And it goes without saying that this weapon makes the most total use of

Venusian metallurgy to avoid vacuum welding or other issues that plague any mechanical device in space. For all these reasons, this versatile weapon, the result of a collaboration between the famed Ulika-Banli Manufacturing Consortium of the Marbec valley and the respectable Markham Rifle Company of Michigan, is quickly becoming a popular weapon wherever there's no air.

Low Mass, High Impact. At less than 1700g, the <TSG1> is small enough that it won't break your mass budget. And with a rate of fire of over 1000 rounds per minute, you can be sure it offers you the defensive capabilities you need.

TSG1	$f_{2} 0_{c} 0_{d}$
1001	
TSG1 Ammunition (Box of 100)	\$11.68
TSG1: 1.697kg	
e	
TSG1 Ammunition Box: 3.16kg	

3.10. Wyst Spring Gun (TSG2)



There's More to the Monks than Books! Manufactured by jdasei-affiliated Gundi Industries, the Wyst Spring Gun fires a large (280g) projectile at up to 50m/s. Like the <TSG1>,it builds on a long tradition of Venusian explosive throwers and spring guns while introducing Earth innovations such as integral cartridges and a tubular magazine.

Precision machined and chemically etched to perfection. The gun is sturdy and dependable. While designed, mechanically and thermally, for the Void, it is fully capable of use in atmosphere. If you are fracturing asteroid crust in space, hunting pseudo-plesiosaurs off the western coast of Equatoria, or fending off giant sloths in the Narbac Valley, a Wyst will come in handy.

This gun holds four rounds in its magazine. A variety of cartridges are available:

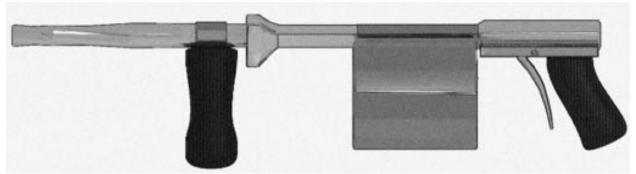
- **Fragmentation Round**: The standard round for the Wyst carries 80g of explosive and 200g of scored metal, which turn into deadly fragments. Each round has a 4-second fuse, giving it a maximum range of about 200m.
- **Contact Fragmentation Round**: Like the standard fragmentation round, but it comes with an advanced contact or "graze" fuse.
- Sticky Explosive: Makes sure your blast zone is as close to your target as possible! This round contains a glass bulb filled with a proprietary blend of gums, tars, and saps which cause this round to firmly attach to the target before its powerful 50g charge explodes.
- Slug: A solid non-explosive 'slug' round
- **Rubber Bullet**: Perfect for dealing with non-lethal situations, this soft bullet will gently, but firmly remind, even a large animal (or human) assailant that you are not to be trifled with!

- **Hover Flare Round**: A miracle of miniaturization, the hover flare round contains a small retrorocket that will bring it to a halt, letting it 'hover' in zero gravity while shining a bright light 50m in all directions! Flare lasts for one minute.
- **Depth Charge**: Perfect for dealing with the dangerous sea life of Venus (or aggressive fishing on Earth), this round has a pressure-sensitive trigger that will cause its 99g of explosive to detonate at a pre-set depth.

Wyst Spring Gun	£4 18s 0d
Wyst Fragmentation Round	\$0.79
Wyst Contact Fragmentation Round	
Wyst Sticky Explosives	\$1.84
Wyst Slug	
Wyst Rubber Bullet	
Wyst Flare Round	\$3.16
Wyst Depth Charge	\$2.64

Wyst Spring Gun: 4.06kg (loaded) 2.3kg (empty) Each Round: 366grams

3.11. Martian Snare (TSG3)



Legal at Last! And Available for Sale! This singularly rare specimen of Martian gunsmithing has only recently been made available for sale on the open market. Despite its dubious history, a series of investigations by the crack legal team at ACME has determined that this item can be listed in our catalog.

A masterwork of design! It may seem to break the laws of physics and engineering, but the famed Snare of Mars is as real as can be. The composition of its metalwork is unknown, but the alloys have proven stable across a range of temperatures and impervious to vacuum welding. This gun is nigh-invulnerable to dust, vacuum, and the thermal effects of space. The top savants of Earth and Venus cannot explain how this gun can extract so much energy from its spring cartridge, yet it does!

Strong enough for Vacuum – but stable enough for atmosphere. The precision-crafted barrel of the Snare is astonishingly accurate in a vacuum and is lightly rifled, allowing use in atmosphere. Its blunt 7.4-gram bullets accelerate to over 800m/s.

Limited availability! Due to the unique and irregular supply chain for this weapon, availability is severely limited. To enquire about purchase, please send a notarized document including your

name (including your mother and grandmothers' maiden names), two letters of reference, your purpose in purchasing the gun, and a sample of your hair.

Martian Snare	
Martian Snare Ammunition	e

Martian Snare: 5.44kg (loaded) 7.40kg (unloaded) Martian Snare Ammunition: 80g per cartridge

3.12. Winchester 1896S



No better shooting gun made! One pump of the finger lever actuates the firing pin, unlocks and opens the gun, ejects the spent cartridge, and inserts a new one. Finest quality rolled steel, case hardened frame, Venusian alloy action. No gun sent out that will not make a perfect target. The most popular gun on the ground is now the most popular gun in space! This system is functionally the same as the famed 1886 Repeater but with updates and modifications for the space environment. Critical portions of the action are treated to avoid vacuum welding, and all lubricants have been replaced with dry vacuum-rated substitutes. The trigger guard and lever have been enlarged for use with gloves.

Winchester 1886S	,
.45-90 Ammunition#3.61	

Winchester 1886S: 3.3kg

3.13. Quackenbush Space Repeater

The Latest Model Repeating Gun from the Famed Quachenbush Factory! A bold new approach to space combat comes from the inventive minds that produced the No. 6 air rifle, extending ladder, and spring nutcracker. Utilizing one of the smallest rounds in mass production, this .14 caliber can unleash a veritable deluge of projectiles at your target.

A Practical Gun for Practical Shooters. Though not as handsomely finished as more expensive options, this gun is constructed from hard alloys, which provide thermal stability in the extremes of space – there are no high expansion metals in the action that will swell at the wrong time and cause a jam. The gun and ammunition are low mass and low price, making it a good option for any financial or mass budget.

Quackenbush Space Repeater£1 8s 0c	d
.14 Quackenbush (Box of 100)\$0.99	
	1
.14 Quackenbush Box: 319 grams	

3.14. Accessories

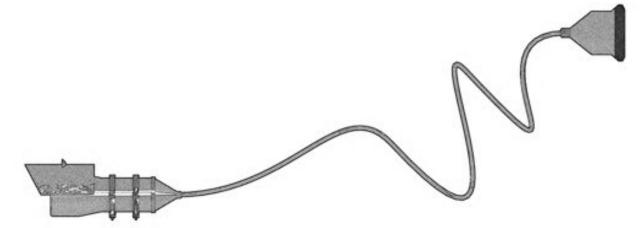
3.14.1. Thackeray Gun Thermometer

After you've unleashed a barrage of destruction against your foe, consult with the Thackeray Gun Thermometer to ensure your next barrage won't critically overheat your weapon. Alternately, make sure firing a cold gun won't cause it to inconveniently shatter. It comes with convenient clasp to keep it attached to your barrel and solidly built to withstand the vicissitudes of combat. Easily read radium dial—measures from 150 to 600 Kelvin.

Thackeray Gun Thermometer\$2.85	

50g. 60cm^3

3.14.2. Ignaz Lamm Fiberscope



Everyone who uses a firearm in a spacesuit faces the problem of sighting. You can't get a good "cheek weld" when said cheek is encased in a helmet. Periscope sights help, but the added complexity is often accompanied by added fragility and a need for constant adjustment. The clear solution for the most discerning space shootist is the Ignaz Lamm Fiberscope. This incredible device transports the image from a 25mm objective lens 3x magnification scope across a flexible tube to the eyepiece. The bundle of magnificent "fibers" that makes this possible is a tightly guarded secret of the Ignaz Lamm Company and their Venusian collaborators in the Cloud Forest. Unique wild plants, growing in hidden valleys and often protected by the most hideous beasts found on that planet. Each plant is harvested at significant risk (and cost) by brave denizens of the Cloud Forest.

The Fiberscope comes with a selection of etched reticles, including simple crosshair, Venusian style, and stadiametric rangefinding.

Weapon Fiberscope	\$250
200g. 160cm^3	
200g. 100cm 5	

3.14.3. Gun Harnesses

Keep Recoil Under Control. Even with the best muzzle devices, recoil is still an issue. Each gun harness provides a rigid frame to mount your projectile weapon and keep it close to your

center of gravity. This reduces the torque from the recoil and eliminates the angular acceleration that is the bane of zero-g shooting. Make sure your target spins out of control, not you!

Make Parallax A Thing of The Past! Combat the other great curse of the space shootist – parallax! We offer several options for parallax-reducing sights to ensure that where you aim your reticle is where your bullet will go.

Periscope Harness: The most straightforward way to reduce parallax, the Periscope Harness (Figure 15), keeps a telescoping sigh in line with your eyepiece with a series of mirrors. Extra bracing is added to ensure the system stays aligned.

"Heads Up" Reflex Harness: Through the magic of Prussian optics and the ingenuity of mechanical engineering, this harness projects a glowing reticle directly into the user's field of view (Figure 16). As the weapon is pitched and yawed, a series of gears and belts communicates the new orientation to the miraculous "heads up" display (Figure 17).

Fiberscope Harness: The result of a unique collaboration with the Ignaz Lamm Company, the Fiberscope Harness combines the flexible fiberscope with a sturdy harness, solving both the parallax and recoil issues.

Sightless Harness: Our most basic harness does not include a sighting mechanism but will still keep your weapon's center of force aligned with your center of gravity.

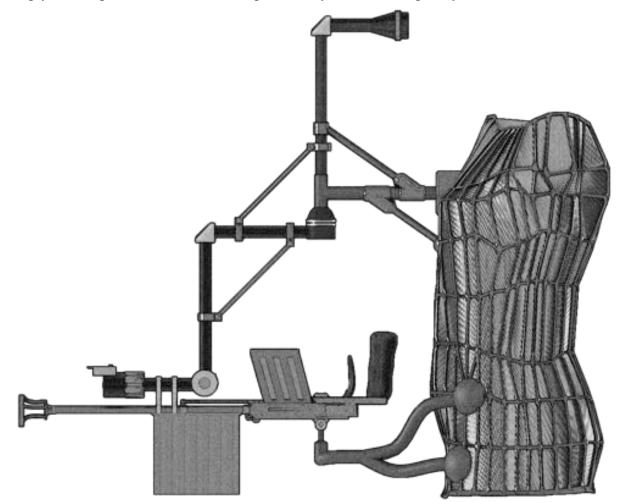
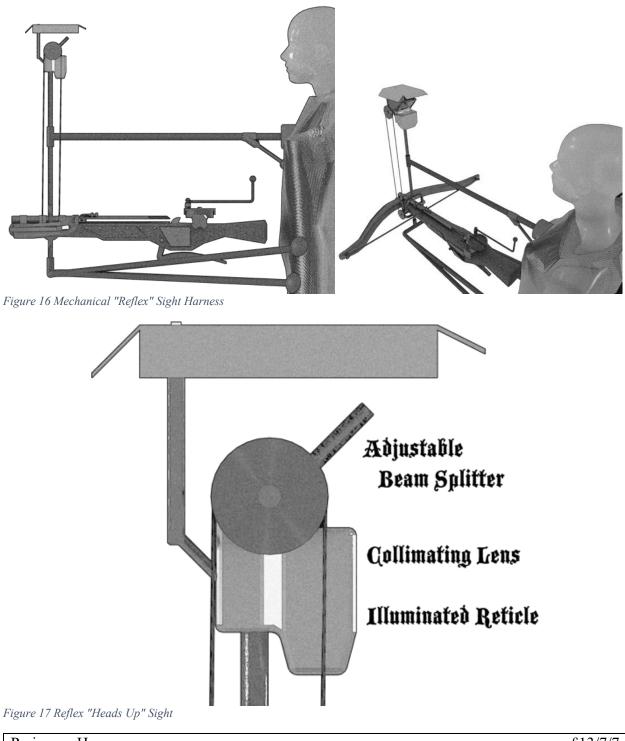


Figure 15 Periscope Harness With modified Don's Gun (See Section 3.1).



£13/7/7
£17/12/7
£78/8/7
£7/2/8

Fiberscope Harness: 8.77kg Sightless Harness: 8.57kg

3.14.4. Active Recoil System

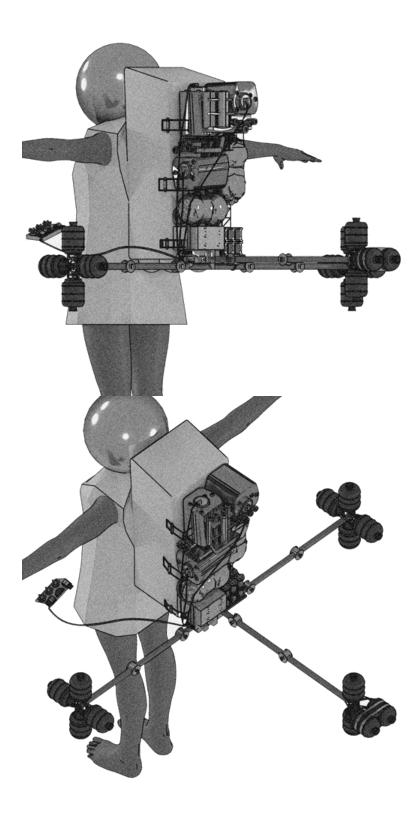
The Wonder From Brooklyn: The Sperry Gyro-Sniper

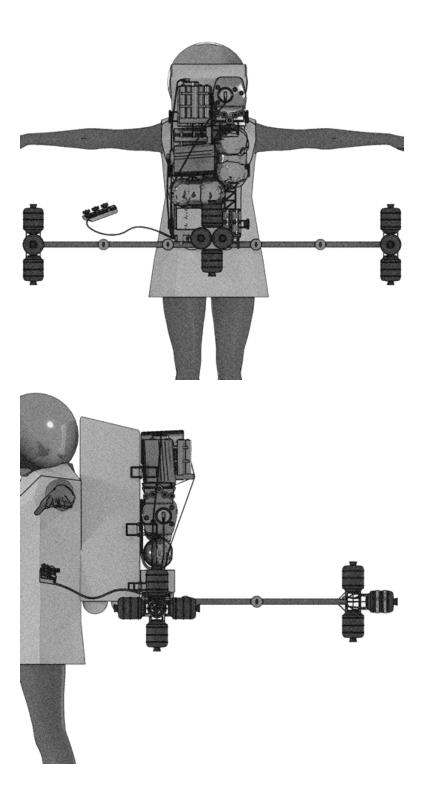
For several years we have been proud to work with The Sperry Gyroscope and Control Company of Brooklyn, New York, USA, Earth to make this unique machine available. Sperry is the ground-breaking company that has built reaction control systems for spaceships from Venus to Mars, and stabilizers for all manner of ships, and weapon directors for Aerolyth ships from Norfolk to London to Yokosuka. Only this pioneering company could combine the gyroscopes, babbage control, and thrusters to create this apparatus.

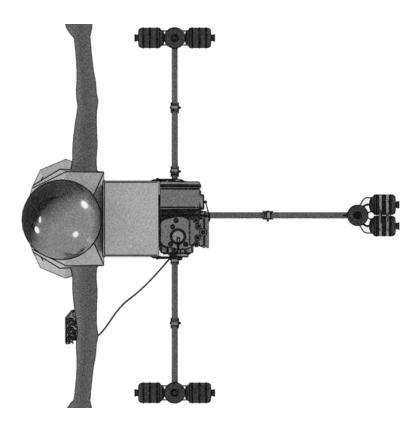
Eliminate recoil without a bulky harness. Through a novel arrangement of precision machinery and mechanical virtuosity, the Gyro-Sniper detects any perturbation or rotation caused by weapon recoil and fires reaction control thrusters to compensate. The control system is so accurate that there is almost no oscillation, and you are returned to your point of fire in a fraction of a second.

This is the very same device issued to the 3rd Queen Alexandra's Own Gurkha Rifles (Space) and used by the Burnham Scouts in the defense of the American Florida Up-port. Shooters using the Gyro-Sniper regularly take high marks in the Upport Shooting Festival's Zero-g events. **Elegantly built**. The Gyro-Sniper attaches to a range of modern space suits. Its reaction thrusters are attached on long arms to maximize the moment arm. These arms can be collapsed for easy traversal of doors or enclosed spaces. They gyroscopes are the famed Sperry Pneumatic Controller – legendary for its precision and compactness. The twelve thrusters (four roll, four yaw, two pitch, two forward translate) use a non-cryogenic fuel and a simple pressure feed system. Each is capable of up to 110N of thrust, though the efficient controller seldom requires that much. The two rearmost manually-controlled thrusters allow the device to provide translation as well as rotational control. With a specific impulse of 225 seconds and 2.5kg of propellants they can provide recoil elimination for up to 1100 rounds or up to 23m/s of delta-v (assuming 200kg payload).

The Brains of the Operation is a custom ABM TM6-based babbage computer, the TM6 Mark S. This numerical wonder was specially fabricated for the complex task of running the Gyro-Sniper. It can perform at a blistering speed of over 34,000 instructions per minute and uses a unique 3-wide vector compute mill. Combined with a fast "whippletree" Input-output linkage, the Mark S can determine its position and adjust fuel flow to the thrusters a remarkable twenty times every second. This computer is fully programmable and comes with 250 5-word lines in its Store.







Active Recoil System	£90 17s
41.5kg (full) 38.8kg (empty) 0.2m3	

4. Other Space Equipment (Catalog)

name	\$£cost
SWAP	

General: gravity vacuum thermal adaptagion +50% 1, +90% for 2, +150% for 3

Equipment for exploring in the vacuum of space