TRIBES Universe

Weapon & Armor Descriptions

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With special thanks to
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February 7, 2000

The purpose of this document is to describe in greater detail the weapons and common technology of the tribal part of the TRIBES Universe.

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Introduction

To the Honored Dottore-Illuminatus,
Danladi Haroun-Nicanor:

Danli, here at last is the report you requested summarizing the current state of tribal technology. My apologies for not compiling it earlier, but extreme circumstances prevented me from attending to it in a timelier manner. As it happens, however, the delays allowed me time to discover answers to several additional items not contemplated in the original report.

Before I begin, let me note the assistance of a pair of very helpful tribal warrior-scholars I befriended during my journey with Sous-Legate Panderson several months ago: Inquisitor Nabterayl and Priestess IshM'lak (yes, the titles are somewhat quaint, I know) of the tribe calling itself the Sons of Thunder. Without their insights, much of the information on the tribal armors would have been woefully incomplete.

Now, please allow me to offer a few introductory comments before

you move on to the meat of this report. Danli, I must stress that tribal technology is a mix of the old and the new. It incorporates sparkling innovations with recycled concepts. Compared to the Empire, of course, the so-called “Tribes of Man” use antiquated, even primitive technologies, and our officers openly disdain the “barbarians.” However, such prejudices sorely underestimate the flexibility and effectiveness of tribal engineering. The weapons and armors used by tribal warriors proved deadly enough when directed at our garrisons in the Kepler system, and the veterans of that campaign no longer scoff at the prospect of facing tribal warriors on the battlefield.

Though most tribes no longer follow any semblance of a nomadic lifestyle, they remain highly mobile within their territories, and this mobility provides the key to their military strategy. Thus, tribal technology remains relatively portable and easy to maintain. The freedom and self-reliance valued in the wilderzone’s frontier atmosphere make durability and practicality primary design goals in any tribal device.

Aesthetic concerns also occupy an important place in tribal design. Many weapons and most armors will feature decoration pertinent to a particular tribe’s customs and history. Most notable in this regard are the Children of Phoenix, who take great pride in their brightly polished and engraved armors, but the Starwolf are also famous for the elaborate patterns carved in the hardwood stocks of their blasters. The Diamond Sword favor a Spartan but elegant look, and the Blood Eagle opt for drama with a more pragmatic - some would say secular - appearance.

This report attempts to summarize the state of tribal engineering and the cultural and political impact technology has had on the denizens of the wilderzone. I will not address spacefaring technology, however, as that topic is distinct enough to warrant its own report. It is my fervent hope that with better understanding of the capabilities of the Tribes of Man, the Empire can avoid a repeat of the Kepler tragedy.

Iridescent-Dottore Jarita Xu-Lachillan
Honorable Scholar-Mandarin
In the service of the Imperial Legate
November 19, 3940
Terran Standard Reckoning

Nanotechnology (Entek)

A brief review will help to establish the proper context. Nanotechnology is a common part of wilderzone life. The technology has existed since well before the Diaspora: microscopic robots (called “nanites” or “bugs”) manipulate matter on the molecular level, thereby creating or destroying either organic or inorganic material. Practically speaking, nanotech has always been somewhat overplayed by the directors and writers of holovids and speculative fiction. While it is capable of miraculous effects, nanotech labors under several limitations. It requires oversight to ensure it does not mutate into rogue forms dangerous to human life. It must be adaptable enough to function in a variety of environments on a variety of materials. It requires a reliable power source.

The need for oversight means any population of nanites must include a highly redundant control segment which monitors for mutation and removes potential rogues. Another segment monitors the environment and facilitates communication between the worker nanites so that the objective is constructed accurately. Finally, generator nanites exist to provide energy for longer jobs, though in some nanite populations this function is replaced by an exterior microwave broadcast. Such a broadcast produces an additional fail-safe, since cutting the power shortens the effective life of the nanites. The end result is that nanotechnology is not the panacea ancient futurists first projected. The more complex the task, the more oversight and control is required. The denser the material, the more energy is required. In short, while nanites can quickly repair broken bones and seared tissue, they cannot create a steak or make a living sheep.

An additional fear developed after the Cybrid Wars, namely that nanotechnology could become a tool for the extermination of humanity. The Starsiege conflict of the 29th century saw such a nightmare come to pass, but the defenders of Earth were able to circumvent Cybrid nanotech plagues with controlled EMP bursts that disabled the bugs with little collateral damage. With the establishment of the Second Empire following the Cybrid Wars, nanotech was used under controlled, human-supervised conditions, usually in medicine or construction. The great fear of sentient AIs commanding nanite armies means computer control of nanotech is limited to dedicated “idiot savant” systems, and the networking capacity of nanite populations is likewise lobotomized to prevent a sentience-establishing algorithm from developing.

The Five Limits

Over the centuries, certain standards and protocols have evolved to control misuse or loss of control over nanites. The nanotechnology used by the Tribes of Man differs greatly from the varieties used within the realm of the Empire. Tribal nanotech (or “entek,” derived from N-tech) is used exclusively for construction and medical procedures, but not for destructive purposes or psychological modification. In a section commonly referred to as The Five Limits, The Tenets of Harabec expressly condemn use of entek against human foes. The Empire also officially forbears from using nanotech (since the bugs have a history of being notoriously unstable under combat conditions), but as you know, the Imperial military has experimented with killer nanites and covert modifications as the war with the Scourge drags on. We’ve all heard the rumors of horrible battles deep within the Empire, where entire platoons dissolved into thin air, eaten by nanite predators. There are dark tales of worlds under perpetual orbital quarantine because of rogue entek run amok. Whatever the truth, tribals treat entek with as much skepticism as we Imperials, perhaps more so if the Tenets are any indication.

Other rules and traditions exist, but the Five Limits are the primary controls over entek in the wilderzone. So strongly does the average tribal feel about the misuse of nanotechnology that even Imperial citizens in the wilderzone use bugs very, very quietly. A witch-hunt can erupt quickly in tribal space concerning perceived abuse of nanotechnology, either by violation of the Limits or use of the less-recognizable, advanced Imperial variants. In fact, the tribal term "witch" seems to mean someone who uses unfamiliar entek or who flaunts the Limits.

THE FIRST LIMIT: Control by Man

Entek must always be deployed and supervised by a human being. There are no automatic entek-using devices in the wilderzone, nor do the Tenets permit direct supervision of nanites by a computer without the presence of a human decision-maker, though computer monitoring of nanite functions is also required.

THE SECOND LIMIT: Confine the Reach

Nanites' range of effect must be limited. Most nanites are programmed to remain within a specific range of a "nucleus" and consequently they don't function for more than a few meters beyond their deployment. When in use for major projects, entek seeds are sown in the desired patterns.

THE THIRD LIMIT: Confine the Generation

Nanites must have a limited lifespan and a limited number of generations. Again, much of the limitation is controlled by the "nucleus" nanites that form a necessary part of any deployment.

THE FOURTH LIMIT: Strike Not the Living

Nanites must never be programmed to break down living organic tissue except as a necessary adjunct to medical operations. Anyone who deploys such a flesh-eating weapon automatically becomes a hunted outlaw under tribal law - and Imperial, as I need not remind you.

Many rumors have accused the Blood Eagle of violating this limit, but the Sikkiyn-Captain I interviewed on Deus Sanguinus laughed at such accusations, calling them Starwolf propaganda. "Only a complete fool would risk losing control of such devices," he said. "Haven't we learned from the Cybrids?"

THE FIFTH LIMIT: Destroy Mutations

Any nanite that deviates from its programmed function shall be immediately destroyed.

Entek Roles

Entek fills four specific roles, each role requiring a specific "species" of nanite. The roles are extraction of metal from ore, construction of structures, repair of equipment, and healing of the injured, carried out by "miners," "skels," "wrenches," and "docs" respectively.

I note that entek fills a strange role here in the wilderzone. All of the major entek industrial species must be used in conjunction with human labor. For example, miners are either seeded over ore-bearing rocks that have been collected by hand, or are deployed in a mine delved by human labor. In practice, the tribes have a great need for laborers despite the relatively common

presence of worker bugs. This is particularly true where conditions require flexibility of judgment or aesthetics. It's worth noting again that the bugs only do as they are programmed to do, and the various safeguards severely limit any autonomous decisions.

Miners

Miners are the first nanites seeded on a new planet. They extract metal from raw ores in the vicinity of their deployment. The metal is then collected and refined into stahlplast for use in structures or tribal machinery. Actual forging or further construction is accomplished by tribal craftsmen using other entek tools.

Skels

Skels are nanites used in heavy construction. Skels are also used to assist in the building of ships and vehicles. Unlike in Imperial virts, skels do not construct ships and vehicles out of thin air in a matter of seconds. Given time, they can accomplish such complex tasks, but require hours for a relatively simple task, days or weeks for a more complex task. In addition, the specs for each piece of equipment must be programmed in great detail into the bugs, a complex task for all but the most proficient entek engineers. Consequently, the Tribes of Man use only a few hardy and proven designs, and they keep their entek construction confined to the deeper levels of their holdfasts. Tribals often keep arsenals stocked with weapons, armor, and vehicles in their bases, calling them up for deployment via use of "inventory stations."

Tinkers

Tinkers are a subset of skels used to assist in the production of armor and other smaller components intended to be worn or held by human beings. These nanites are always used under exacting direction of a human engineer, and have almost no independence. Because tinkers require so much direction, tribal crafters skilled in their use become valued assets. Essentially, tinker entek manipulates microscopic pieces of the target component.

Reparis

Reparis, or "reppers," are the mechanical repair bugs. They repair any damage done to buildings and equipment. Using the imprint code found within any tribal device, they can repair an existing piece of equipment to its original state. As long as the item in question hasn't been totally disintegrated, these nanites can repair it-armors, turrets, drop ships-all can be repaired within a matter of seconds. These nanites are found in the repair packs used by battlefield engineers, and are powered by a beam from the armor's energy reserves. When the user cuts off the energy beam, the nanites destroy themselves.

Repair packs and kits used on tribal battlefields contain charges of reparis designed to seal breaches and repair damaged circuits. When applied to powered armor, the reparis are programmed to give top priority to damaged shield systems. Repair kits also contain smaller amounts of knitters programmed to check the warrior and effect minor microsurgical healing. As with tinkers, they manipulate the target material, whether mineral or organic, into the desired configuration.

Knitters

Knitters, or "docs" are similar to reparis, but are engineered to repair human flesh instead of

inorganic material. They can easily repair traumas such as cuts, skin and muscle burns, abrasions, and broken bones in mere minutes, but are less effective at dealing with major internal organ trauma due to the great variance in individual human physiologies and body chemistries. More serious injuries typically require suspended stabilization and transport to a location with a portable hospital array.

The handheld devices that use nanodocs are generally referred to as “knitterbeams.” A knitterbeam applies nanodocs under an electrostim field that promotes rapid cell regeneration. Warriors receiving knitterbeam healing in the field need to take extra fluids and electrolyte supplements to ease the tissue strain of accelerated regeneration. Part of the function of knitters is reweaving the biological tissue, but knitters are also able to form stitches to help maintain the flesh integrity. Such knittings dissolve over time. Knitterbeam work does leave scars, however, as nanodoc healing is somewhat of a strain on human cells. Thus, a warrior who receives much field healing will carry visible signs of numerous brushes with death. Of course, many tribals view scars as badges of honor and courage, and so refuse to have any cosmetic repairs after a campaign.

ENERGY GENERATION

Fusion

Most power for tribal settlements comes from *stil-fusion* generators considered antiques by Imperials. Compared to the antimatter chambers and ion flux wells used in the Empire, these tribal generators are old and inefficient. However, they more than fulfill the requirements of the tribal holdfasts. They are reliable, durable, easy to maintain, and relatively portable. Further, due to its isothermal input and low radioactive signature, *stil-fusion* is far safer and environmentally friendlier than antimatter, as well as more stable than the notoriously twitchy flux wells. The only byproduct of the fusion generators is water, formed by the fusion of plentiful hydrogen and oxygen atoms.

Naturally, the size of the generator controls the potential energy output.

Solar

Hyper-efficient photovoltaic cells embedded within solar panels permit tribals to supplement the fusion power plants used by holdfasts and bases. A square meter panel is capable of generating several megawatts of electrical power on a bright sunny day. A network of panels can match the output of a fusion generator under proper conditions.

However, these solar panels are useless at night or in inclement weather systems. On a desert world, they are extremely useful. In the dense jungle undergrowth of Helena Prime, they serve little purpose. Overall, fusion power remains the most efficient generation system.

SENSORS

The Tribes of Man use pulse and motion sensors to detect enemy presence. Critical to tactical planning in any situation, sensors are nevertheless severely limited. Tribal armors and vehicles all include standard ECM packages, such that average sensor effectiveness drops dramatically within several hundred meters. Outside of line-of-sight (LOS), even concentrated pulse sensors

can be rendered virtually useless. On the other hand, once within a sensor's effective range, escaping detection is virtually impossible without powerful jamming equipment. The honor-based culture of the wilderzone has prevented adoption of outright cloaking technology (deeming it dishonorable), though that capability has existed since the Cybrid Wars. Interestingly, one of my contacts in the Blood Eagle, an aspiring duelist who recently left Fury's service, has hinted that the exiles have quietly begun to incorporate cloaking gear into their inventories. If this is true, we should expect tribal warfare to grow considerably bloodier.

Motion sensors are simple, short-range detection devices using an optical interface and sensitive air pressure triggers. When any object within its detection radius moves, a motion sensor "sees" and tracks that object as long as it remains within range. Many varieties of motion sensors also screen for intruder sound profiles. Some tribes use IR or laser "tripwires" to add an additional layer of protection. Such low-tech strategies are scoffed at by those familiar with the Imperial military, but tribals simply smile in the knowledge that their less-advanced equipment nonetheless continues to serve well.

Pulse sensors blanket almost the entire EM spectrum, from radio waves to gamma rays, in a manner similar to ancient radar. They can be jammed by a technology that utilizes a multi-phased cloaking field to make the shielded object or person invisible to pulse sequences. However, such broad jamming fields require enormous power and can only be maintained for long periods where supported by a dedicated energy source.

All information collected by the sensors in a tribe's holdfasting is downloaded to a master tactical computer, which in turn relays the data to each warrior's command circuit, or "Bleed."

COMMUNICATIONS

Hyperweb Coherent Antipodal Relay (HCAR or "hypercast")

Most star systems on the wilderzone Hyperweb have powerful radio transmitters and receivers set up in the vicinity of the jumpgates. Tribal engineers have long known how to squirt dense message pulses through the jumpgates. However, the message must be relayed from transmitter to transmitter. Energy requirements are far lower than with message ships and transit through jumpgates slightly faster than do spindleships. Some star systems are close enough to maintain regular hypercast commlinks and thereby a localized trans-stellar O-Web (with some delays and interference due to jumpgate flux). This is the most common means of trans-stellar communication.

Advantages: Convenient and reliable. Any ship near a jumpgate can send or receive messages with nothing more than basic radio.

Disadvantages:

(1) Not private unless heavily encrypted. Any ship near a jumpgate can receive messages.
(2) Over a longer thread such as an Axis or Grand Axis, Hyperweb flux commonly corrupts part of the signal, causing the message to arrive in varying degrees of gibberish.
(3) Occurs at substantially the same speed as spaceship travel. Definitely not real-time communication. A message may take minutes to cross the even the shortest threads, and several hours to days for longer threads.

(4) It needs to be relayed across star systems. If you were to transmit from System A to System B, the message would stop at B unless someone at B retransmits through the B jumpgate to System C.

Quantum-Reed Transcomm ("Q-Reed," "Q-R," or "squirt")

Q-Reed devices make true faster-than-light communication possible with amazing clarity, but this miraculous technology has severe limitations.

Advantages: Convenient and reliable. Real-time communication across any distance up to 5,000 light years.

Disadvantages:

(1) Due to a limit enforced by the laws of quantum engineering, a Q-R transcomm can only transmit between units that contain "reeds" grown in the same proto-singularity matrix. Odds are virtually impossible that a randomly encountered Q-R device will link to someone you know. You can alter the resonance of a transcomm to reach unlinked reeds only if you have samples of those reeds present when you begin the relinking process. In so doing, you sever the transcomm from all of its old connections. This process is time-consuming, expensive, and dangerous.
(2) The hardware is rather bulky and cannot be carried as a hand-held device. The smallest Q-Reeds are about the mass and size of a modern-day car engine block.
(3) They require substantial amounts of energy to function.
(4) The heart of a Q-reed system is the quantum resonator "reed," which is constructed of unstable proto-singularity matter. If subjected to powerful implosive force, the reed will explode and (again due to the strange dictates of quantum engineering) a probability exists that every reed in its matrix chain will likewise detonate.
(5) Production of transcomms is hideously complex and expensive. The Tribes of Man do not have any capacity for independent production. Consequently, only a few transcomms exist in the wilderzone, virtually all of them owned by the Four. (It's rumored that the Imperials brought one to Kepler, and that the Children of Phoenix assault was a pretext for capturing the device.) Though they are more frequently encountered in the Empire, they are still uncommon there as well, and are virtually monopolized by the Imperial Military, which uses them in naval tactical coordination.

Mail packets

Basically a Pony Express style of communication wherein messages must travel with ships in order to get to their destinations. A variation of this is the Proxy (or Courier), a person who memorizes the message and transmits it orally. Proxies with brain implants can be conditioned to tune out their messages so they don't remember what they've said or what's been fed into them until they hear the appropriate codes. See "Johnny Mnemonic," by William Gibson for the classic example of this kind of courier.

Advantages: Fairly high security possible. Can go anywhere, be concealed in objects, offer full hologram presentation, etc.

Disadvantages:

Can be intercepted and/or faked. Limited to the speed of Hyperweb travel.

WEAPONRY

The whirlwind speed of tribal combat has led over the centuries to a small core of weapon varieties becoming the standard loadout on the battlefield. The use of entek-assisted production and craftsmanship means most weapon designs don't vary significantly from tribe to tribe, although tribes with more technological savvy will make incremental modifications and improvements. The great majority of stock tribal weaponry is effectively the same across the wilderzone, with particular makes prized for durability and quality.

The so-called "weaponsmith" tribes, frequently independents such as the Forge of Hephaestus and the Daughters of Iron, are responsible for the most trade in tribal armaments, particularly in modified versions or improved models. Advanced Imperial weapons occasionally find their way into the wilderzone, but not in numbers sufficient to make a difference in the balance of power among the Tribes of Man. Most of these imports eventually seem to find their way into the hands of the Sabot-Styx weaponsmith bloodline of the Blood Eagle. The Blood Eagle deny accusations of Imperial collusion and also reject rumors of running a bounty price on Imperial gunrunners.

FIREARMS

Without exception, tribal weapons are simple, time-tested models that have existed for centuries. The only new twist is the spinfusor, with its gravitically accelerated aerodynamic payload. Most weapons designed for use with armor are heavier and carry a greater payload than hand weapons. Aside from blasters, armor-scale weapons are bulky and unwieldy for an unaugmented user. Neither do these weapons lend themselves well to concealment. Hence, when a distinction must be made, tribals frequently refer to armor-scale firearms as "war" weapons, and call personal sidearms "free" weapons.

Every armor-carried gun includes a T-grav nodule that helps minimize the weapon's effective mass for purposes of carrying and aiming it. In some cases, warriors set the T-grav node so high that when the warrior drops the weapon, it simply drops to within a half-meter of the ground and floats there. Such use will burn out the T-grav node fairly quickly, so most tribals only use this setting if they believe they will need to come by and pick up an auxiliary weapon quickly and in a short time. The more formalized a tribal conflict, as with the duels or team duels, the more likely such floating weapons are to be found.

Blaster

Strictly speaking, "blaster" describes any weapon that uses compressed energy to increase damage potential at a cost in muzzle velocity. The tribal war blaster operates by producing a compressed particle charge (which can be analogized -somewhat inaccurately from a physics standpoint, I'm afraid-to ball lightning), and then accelerating that charge to the target. Energy for the war blaster comes from the microfusion paks in a warrior's armor, though light blasters feature self-contained power sources that provide a limited number of shots.

Tribals personalize blasters more frequently than any other weapon. The stock - usually plastic or ceramic but occasionally terawood - is frequently covered with ornate carvings or stencils. Warriors commonly add notches to represent the confirmed kills made with their blasters. Finally, some blasters are given names by their owners. Among the Starwolf, for example, many improbable stories circulate about the famed Great Sergeant Kwinton M'kraken and his trusty

blaster “Old Blue.” I am also given to understand that before his death, Ulysses Konovalev was becoming quite well-known for his skill with a richly-engraved blaster given him by his Starwolf mother.

A blaster is traditionally handed down from a parent to a son or daughter at the child’s Rite of Newblooding. Many such weapons have belonged to a particular family for generations, perhaps originally war prizes of a revered ancestor, and are considered valued heirlooms. Most tribes consider the gift of a blaster a symbol of entering adulthood and preparing to join the elders on the battlefield.

A blaster used in conjunction with an armor feeds off a powerlink set in the armor’s gauntlet or vambrace, automatically connecting when a warrior draws the weapon. The powerlink draws energy directly from the armor’s microfusion paks, which permits unlimited ammunition at the expense of armor jet mobility.

Blasters designed to be carried on armors are essentially heavy carbines in the hands of someone not wearing a suit. The grip is a malleable ortho-resin that conforms to the hand and style of the last person who held the weapon.

Plasma Gun

The plasma gun, or “plascannon,” is a relic of the old Imperial armies, and dates as far back as the fabled *Earthsieges*. When Those Who Jumped ventured forth into the galaxy, they brought plascannons with them.

This weapon initiates controlled ignition in a “bullet” of compressed hydrogen to create a ball of dense, superheated plasma. The explosion of the surface layers of the hydrogen bullet provides the force to accelerate the plasma charge toward the target. A core of charged particles injected into the center of the bullet keeps the plasma from expanding for a few seconds after exiting the barrel.

Upon impact, the charge explodes and splashes plasma across a radius of three to five meters. This result is extremely effective against a group of targets. Peltasts in particular enjoy the benefits of the plascannon’s firepower when attacking enemy Myrmidons.

For the same reason, the plasma gun also works well indoors, because enclosed space confines the target’s mobility and sometimes concentrates the plasma’s splash damage in a manner similar to a shaped charge effect. As with other explosive weapons, the wielder risks injury or death from her own plasma if she fires at targets too close to her.

The various tribes frequently use colorful nicknames for the plasma gun. The Starwolf call it the “Dragonsbreath.” For the Children of Phoenix, it is the “Firespear.” The Diamond Sword and their allies refer to it as the “Sunfinger.” The Blood Eagle, however, simply call it a plascannon.

Unlike many other weapons, the Plasma gun has few variants. Most tribes will tweak weaponry to their own tastes, but a plasma gun used by the Children of the Phoenix on Priam III features almost exactly the same design as a plasma gun used by the Blood Eagle on Deus Sanguinius,

many jumpgates away. Tribal historians believe the tried-and-true plasma gun simply continues to serve its purpose with enough effectiveness to discourage experimentation.

Plasma guns use a standardized canister for reloads, a reinforced bottle attaching with a magnetic-mechanical seal. The canister compresses the plasma supply and is itself constructed sturdily enough to minimize the chance of a stray breach in the field.

Due to its rugged and safety-reinforced construction, the plasma gun is a heavy piece of work. With the enhanced strength granted by most armors, wielding this weapon is little different from waving a blaster.

Chaingun

This weapon has changed little from its "Gattling gun" ancestry some two thousand years earlier. The principle remains the same: multiple barrels spin at high speeds and spit out explosive flechettes at an extremely high rate. The flechettes are propelled via a primitive binary chemical system that nevertheless is supremely efficient. Armor strength augmentation and inertial compensators make recoil a negligible issue.

At close range, the chaingun can chew up all but the most heavily shielded targets in short order. Even an enemy encased in well-shielded Myrmidon armor will fall. The explosive flechettes are similar to bullets but are more aerodynamic and consist of a sharp stahlplast tip set on a two centimeter long shaft of hardened *polyvulkanar* resin that explodes on impact. The explosion drives the stahlplast tip forward to add to the flechette's penetration value. A typical flechette hitting an unprotected human in the torso will punch a coin-sized hole through the body while blowing open a hole the size of a dinner plate at the entry point. The rapid onset of multiple small explosions wears down even the toughest armor's shields surprisingly quickly.

The ammunition clips for the chaingun consist of packets of flechettes. Each clip feeds into the stock of the chaingun behind the grip, and is completely encased within the stock. Each "round" represents approximately five explosive flechettes and two armor-piercing flechettes. The armor-piercing variety use duracore stahlplast tips with secondary propellant for higher penetration velocity. The flechettes of each round tend to hit in a tight cluster with minimal spread against targets within twenty meters of the gunner. Outside of twenty meters, the flechettes spread rapidly and their effectiveness plummets accordingly.

The chaingun is a devastating weapon at what passes for close range in tribal combats. It has many nicknames. The Starwolf refer to it as "Ripfire," "Deathsong," or "Eagle-plucker" (along with other, less-savory names along the same lines). The Blood Eagle call it "Shrew" or "Bloodblaster," and the Children of Phoenix are fond of the name "Havoc." The Diamond Sword call it "Mother of Fury" when they care to use a nickname. Some scholars I've spoken to have some disturbing theories about a possible link to the Blood Eagle sirdar who uses the warnom "Fury." (Perhaps I'll relate these in a future report; they're such absurd speculations that I would be embarrassed to include them in this document.) And the independent tribes also add their nicknames. The Sons of Thunder, for example, seem quite attached to the term "Rolling Thunder" for this weapon. With all these various and sundry nicknames, it's a wonder anyone here really communicates at all. I personally think it absurd to say something like, "I have to

reload my Rolling Thunder.” Sounds like the kind of euphemism I’d expect to hear from a saar-marine on leave in the skinpits of New Caanan.

Spinfusor

This weapon is an odd hybrid of magnetic and gravitic acceleration technologies. Most warriors call it the "spinfusor" after the ammunition it fires. It is also called the *Stormhammer* or by the more archaic *spinfusil*. Some tribes just call it the disk launcher.

The weapon fires a light, discus-shaped charge (the “spinfusor”) wrapped in a transferro-covilium skin. The explosive is usually a magnetically activated, hypervolatile impact-oxidizer such as Gamma-T or ZJ-90. Once activated, the weapon creates a localized magnetic field that suspends the disk in the ready position and spins it up to a high speed. Without the magnetic field, the disk remains inert. However, with exposure to the spinfield, the ordinance gains its explosive potential, which is apparent in the “inflation” of the disk to a more discus-like shape, and by the flashes of electrical sparks that become visible within the disk itself.

When the trigger is pulled, a gravitic pulse accelerates the disk to subsonic velocity without disturbing the magnetic field of the disk. The disk’s spin then provides a gyro-stabilizing effect such that the disk travels in a straight line to its target in all but the fiercest atmospheric conditions. In addition, the weapon creates a gravity “line” to further stabilize the disk’s vector. This line persists for a moment or two only. Anyone who comes into contact with such a line would feel a slight wrench or push, not enough to deflect a man-sized mass, but perhaps enough to break a warrior’s concentration. The gravitic "direction" imparted to the disk also forces it to travel at a constant speed. In flight, the transferro-covilium skin of the disk superheats and ablates, giving the ordinance its familiar light-blue trail. The disk alone is capable of beheading a warrior in light armor even if the explosive somehow malfunctions (a very rare event). The gravitic pulse also triggers the loading of the next disk from the magazine.

In the current model of the spinfusor, a very short delay occurs between the time of pulling the trigger and acceleration of the disk. Removal of the kinetic dampers eliminates this delay, but dramatically increases the risk of the magnetic field collapsing and detonating the weapon’s entire payload. Consequently, warriors accept a lower rate of fire as an unalterable feature of this weapon.

Outside of the mortar, this weapon produces the greatest splash damage (over five meters’ diameter) of all the traditional tribal weapons. Given the highly mobile nature of tribal warfare, this explosive damage effectively increases weapon accuracy, since even a near-miss can be sufficient to disable or kill a target. It should be noted that the explosion is thermal and concussive, but that the disk disintegrates completely without producing any shrapnel.

Standard ordinance for a spinfusor - one disk -- weighs about half a kilo. Lighter and heavier ammunition is available to achieve longer range or greater splash damage, but the standard loadout remains the most popular. A typical spinfusor magazine sits on top of the weapon and feeds the disk into the launch position, each disk is flat and takes up relatively little space until it has been magnetically charged. The gelid blue color remains dull until the disk enters the

magnetic field, at which time the disk takes on its luminous blue, electrically-charged appearance. The weapon's greatest disadvantage is the low magazine capacity, since only fifteen disks can be carried at any one time.

Grenade Launcher

One of the most primitive ranged weapons still in use, the mechanics for this weapon are simple: a chemical charge propels an explosive device. The smoking residue of the powder gives the ordinance its familiar white smoke trail upon ejection from the chamber. The explosive operates on a timed fuse of approximately three seconds, normally bouncing once or twice before exploding. Unlike spinfusor or mortar rounds, grenades are typically designed to fragment and thereby produce shrapnel.

Tribal warriors favor the grenade launcher because it is simple, cheap, and provides indirect fire capability. The Empire is rumored to use micronuclear grenades with integral antigravity drivers and target-seeking capability, but even if these tales are true, the expense would be far more than the simple, tried-and-true tribal version of the weapon.

Laser Rifle

The laser rifle has by far the longest range of any weapon of the tribal infantry arsenals and is accurate to a range of several kilometers. It is also known as a *sniper rifle* or *longrifle*. It works best when combined with an armor's built-in optiks for targeting across substantial distances.

I heard a ludicrous story about the Diamond Sword having invented this weapon-as if we haven't had laser rifles in the Empire for over a thousand years! The Diamond Sword originally produced the popular *Artemis* model of this weapon, but the weapon itself has a long history that predates the appearance of the tribes themselves. Still, the current exaggeration is consistent with the tribals' love of heroic myth. I don't think anyone actually believes the story, but they all speak of it as though it were fact. The truth is, the Diamond Sword made extremely effective use of snipers when they appeared in the wilderzone, so much so that the tribals probably invented this yarn to explain the sworders' prowess. And like so many other apocryphal parts of tribal history, folklore evolved into accepted facts. Our historians have quite the knot to untangle out here, to say nothing of intelligence services.

The longrifle requires a great deal of energy to use and will rapidly drain the normal energy cell of an armor. Consequently, only with the augmentation of an energy pack can a warrior fire this weapon and retain use of the armor jets.

Only tribals wearing light armor can use longrifles. The reasons are simple. First, the longrifle is a relatively delicate mechanism by tribal standards, easily disabled by powerful concussions. Heavy and medium armors typically lack sufficient mobility to avoid battlefield explosions to the degree required to keep a longrifle safely functional. Second, tribal armors have incorporated, over time, specific secondary powerfeed requirements for the longrifle that have been integrated into light armor design schemes, but not in the larger armor classes. Since the longrifle requires more immediate energy than any other tribal weapon, the need for a dedicated channel from the armor's energy pack is crucial. Finally, the designs of the medium and heavy armors do not typically permit the range of motion optimal for use of a longrifle. Still, I am told that every so

often, some renegade tries to use a longrifle with a modified myrmidon armor. The amusing results of these attempts at innovation provide tribal warriors with grim jokes they are fond of telling to lighten the mood during dropship assault runs. The expression “like Artemis with a slug” means two things that just don’t go together, something utterly ineffective or idiotic.

Continuing my anecdotal departure, Danli, I’ve heard this weapon is well-balanced and a pleasure to use. As with the blaster, the typical longrifle features extensive terawood use in its stock, though less ostentatious ornamentation. Tribal snipers are quite fond of their weapons and are fond of giving them names.

ELF Gun

The Electron Flux Gun, or ELF Gun, has undergone a great deal of change from its origins as a powerful Herc-mounted weapon. Military historians remember the dagger-shaped Electron Flux Whip discharging blasts of controlled lightning at a target. The original ELFs were definite energy hogs, but ones capable of knocking down shielded targets quickly.

A handheld version of this weapon was produced as early as 2734, although it never made it past the prototype phase of testing. For centuries, attempts to miniaturize the ELF failed for two reasons: the enormous power requirements and the excessive amount of shielding required to prevent the injury or death of the shooter.

Sometime before the Sixth Firetruce, a workable variant began to see use on the battlefield. The old weapon was essentially “lightning in a bottle,” a massive, barely-controlled electrical discharge. This new version was more of a finesse device; creating a resonance effect. When fired, the ELF bathed the target in a wide emission of electromagnetic energy. A microcomputer in the weapon analyzes the feedback from the initial burst and shifts the next discharge to a resonating frequency. This process takes only milliseconds and is ongoing.

Against a shielded target, the effect apes the use of sound to shatter a glass. The target’s shields will falter, then fail. Against another tribal, the resonance effect not only knocks down powered armor shields, but causes an energy drain that renders the armor jets and energy-dependent weaponry useless.

This functionality comes at a price. The ELF Gun has only a very short range, and does not cause immediate damage to an armored and shielded target. The sensation of being hit by an ELF has been described as “like putting a battery to your tongue, but with your whole body being one big tongue.” Painful but not excruciating, the ELF can produce fatal results if directed at a person long enough, generally around eight to twelve seconds. It does so by draining armor energy and then causing the unshielded human target to go into cardiac arrest. Some electrically insulating armors have managed to blunt this effect, but the supplementary insulation adversely affects armor performance in other ways.

I’ve heard reports that this weapon is commonly used as an interrogation tool. Evidently with a little ion-gel rubbed on extremities, the pain of a low-level ELF discharge is enough to crack all but the strongest wills.

Most of the tribals I interviewed regarded this weapon with distaste. They acknowledged its place on the battlefield on disabling enemy turrets, but few were eager to carry one. “It’s as accurate as a bull with a blindfold,” one wag told me. Still another warrior told me the ELF was his favorite weapon in close quarters.

The *Scorpion* turret mounts a larger version of this weapon. This variant is far more powerful and inflicts greater damage but does not drain energy as rapidly, and can be considered a close “cousin” of the original ELF, essentially a lightning whip.

Mortar

This particular weapon evolved from a Herc-mounted weapon developed in the post-Starsiege era. The Hellstar Vehicle Mortar (HVM) appeared on Hercs from approximately 2900 to 3300, primarily the *Talon Mk. III, Skullsplitter,* and *Perdition*-class Hercs. In the corporate wars of the 33rd century, the Unitech *Giant*-class Herc also incorporated a version of this weapon.

When the Blood Eagle first moved into the wilderzone, they brought Hercs and related equipment with them. Against the lightly-armored tribesmen, the mortar-equipped Hercs proved extremely effective. Years passed, however, and the Hercs broke down far from the supply lines of the Empire. Lacking the Herc platform to carry it, the Blood Eagle discontinued use of the mortar.

Once the Blood Eagle adopted the powered armors of the tribes, they revisited the weapons they have used on Hercs to see what they could modify for their use. The *Hercules* mortar was one such weapon, miniaturized and re-engineered for use with powered armor. It rapidly became one of the most feared weapons in the wilderzone. Nothing else in the tribal arsenals has the capacity to deal as much damage.

The weapon works like the grenade launcher, but on a much larger scale. The propellant is far stronger than ordinary chem propellants, making use of a surprisingly stable mix of hypervolatile compounds. A large percentage of cuprous oxides present in the mixture gives mortar shell smoke trails their characteristic green color.

With a thermal splash radius of ten meters, this weapon is capable of clearing a room, destroying heavy equipment with a single shot, or scattering a group of enemy warriors like rag dolls. Warriors equipped with mortars can rain destruction upon an enemy base from a reasonably safe distance. Most mortar round do not incorporate a shrapnel design, as the effectiveness of shrapnel against armor shields is minimal.

Some veteran tribal warriors have mastered the skill of “mortar jumping.” This action involves the warrior firing a shell at her feet and letting the blast carry her over a significantly greater distance than use of the armor jets alone would permit. It sounds suicidal, I know, but such is the kind of bravery one finds among the barbarians. It is a typical example of how the tribals find new uses with their core of admittedly unsophisticated technologies.

Given the mortar’s unmodulated weight of almost one metric ton and the weight of its ammunition, only the heavy *Myrmidon* class armor possesses the capacity of lifting this weapon

(even with T-grav nodes reducing the mortar's effective mass).

Targeting Laser

Not a true weapon, of course, the targeting laser operates as a simple rangefinder. Linked with the armor computers of other tribesmen, it enables the bearer to "paint" a target for his companions who carry mortars or grenade launchers. The tribes who coordinate best between laser spotters and mortar bombardiers clearly enjoy significantly more success than less-disciplined tribes. According to my Sons of Thunder friends, many warriors disdain use of targeting lasers for reasons of pride, and choose instead to seek personal glory.

MELEE WEAPONS

Most tribal combat waged in earnest involves solely the use of firearms. However, my tribal sources say that though less common, melee weapons do have a place in tribal combat. Such weapons include swords, axes, flails, whips, staffs, and any other implement that necessitates the user being at close range to the target in order to deal damage. These are effective because they do not carry sufficient kinetic energy to exceed the threshold of the armor shields (save when the weapon uses pak or battery-powered energy in some manner). Hence, melee weapons essentially bypass shields and attack armor directly. When driven by the augmented strength of tribal armor, a sword or axe can pose as severe a threat to a tribal warrior as a chaingun.

Swords, Knives, Katars, and Tetrahooks

Though tales of rocket-assisted warhammers and blaster maces are quite common in the mouths of tribal storytellers, the most common melee weapons having relevance on the battlefield are of the bladed variety. Since tribal armor shields do not protect against the far more slowly-delivered impact of these weapons, tribal warriors occasionally do bring various melee sidearms to war.

Most commonly found are swords of various types. The Gehenna Sharks were known to use a wickedly serrated blade made of splint-etched memory metal. Upon penetrating to flesh, the sword would essentially release a jagged piece into the wound, an effect often more devastating by the tribe's frequent use of poison.

Monomolecular-edged swords and knives are also used, but although these are devastating against unprotected targets, they yield far less effective results against tribal armor. The diamond-coating and ultradurable carapace of an armor quickly blunt monomolecular edges and can stop all but the most determined blows, unless those blows find an exposed point in the protection. Joints and areas lacking armor covering are the best targets for such blades.

Many swords have a hollow core partly filled with a heavy liquid metal such as mercury. Such a feature adds to the sword's momentum during a swing by shifting the balance from the hilt toward the point.

Katars, or punch-daggers, are surprisingly effective in armored close combat, though they offer no overwhelming advantages over regular combat knives. They are especially favored by the Blood Eagle.

I found a tetrahook in a bazaar in Bira Marduk and had the opportunity to see its use

demonstrated by a streetfighter against a melon. The tetrahook is a curious and disturbing weapon mostly used in unarmored tribal duels. It consists of a grip sprouting four (sometimes three) curved and barbed - often serrated - blades at cross angles, much like a monstrous dragon's claw (which is, incidentally, the nickname of this instrument). One holds it as one would hold a cross-shape gripped by the hub. A tetrahook is designed to collapse into a flat plane for sheathing. When ready to use it, one triggers a spring-loaded or memory-metal mechanism that snaps the four blades open to their ready positions. Some tetrahooks have backward curving or forked blades, and some have hollow channels for injecting poison into wounds. Some variations are strapped around a wrist rather than gripped, but my sources say the handheld version is far more effective in practice. Either way, the tetrahook is an intimidating weapon. I gathered from the demonstration that tetrahook duels are *extremely* bloody affairs, wherein the users try to close so they can punch the barbed hooks into each others' vitals or hook flesh so as to manipulate the victim with pain. Tetrahooks also make excellent parrying weapons.

Curiously, the Children of Phoenix are the most frequent users of tetrahooks. The Blood Eagle apparently consider them too flamboyant, though the Halakar bloodline of Bira Marduk encourages use of the weapons in streetfighting contests. A thought strikes me as I write this, Danli; perhaps the Blood Eagle see tetrahooks more as recreational toys than true weapons. Chilling, if true.

Fluxtorches

Fluxtorches are an example of simple tribal technology that nonetheless works well despite its lack of sophistication. A fluxtorch is nothing more than a plasma torch partly contained in a magnetic bottle. The magnetic containment only channels the plasma into a rough cylinder-shaped "blade," something like a hose channels water. The tip of a fluxtorch is a spreading flare of plasma, which dissipates quickly enough but still produces tremendous heat. The weapon has been likened to a flame-thrower waved around like a sword, with plasma vapor trailing in the arc of the swing. It can by no means be considered a "finesse" weapon. My understanding is that using it without the protection of armor is tantamount to suicide. The plasma is at least as bright as burning magnesium, such that an observer lacking optical filters will be temporarily blinded.

The plasma is hot enough to do substantial damage through shields and armor, but it also splashes considerably, so the wielder must take care not to injure himself by holding the weapon against the target for too long. The fluxtorch's blade measures approximately one to two meters in length and holds enough plasma for two minutes of continuous use. Unless the materials in the hilt are rather more advanced than the usual tribal alloys, the chance of the weapon malfunctioning in prolonged use rises substantially.

Such a volatile weapon holds other dangers. Nabterayl told me a story of a Child of Phoenix who attacked a Starwolf in heavy armor with a fluxtorch, only to have the warrior grapple unexpectedly and turn the fluxtorch against him, burning his arm off and cooking his chest badly enough to cause internal damage. The Child of Phoenix killed the Starwolf by slapping a mine on him and jetting out of the explosion range, only to perish shortly thereafter from the fluxtorch's horrific burns.

These tribal warriors may be unsophisticated, Danli, but if Nabterayl's story is true, they appear all the deadlier because of it.

Choices of the Four

The Great Four Tribes, as the barbarians refer to the four dominant tribes of the wilderzone, display markedly different preferences in their selection of melee weapons. Some, such as the Blood Eagle, retain such weapons for ceremonial occasions, whereas others such as the Diamond Sword appear to invest great spiritual significance in their blades.

The Diamond Sword, unsurprisingly, favor a long hand-and-a-half sword of duracore parasteel. My suspicion is that many, if not most, of these weapons were brought from Imperial space, since nothing I have seen indicates tribal weaponsmiths are capable of producing DPS. Be that as it may, surodoi of the Diamond Sword always appear with a sword while out of tribal armor, and only surrender them in rare circumstances, such as at a parley or a tea ceremony. Many of the unit and rank names appear to connect to the tribal sword theme. Clearly, swords have great psychological weight for this tribe. The variety of swords varies greatly, with some following the styles of ancient Nippon and others drawing from a host of European and Near Asian influences. You are just as likely to see a member of the Diamond Sword carrying a claidh mor as a tachi. I am told a gathering of surodoi is an impressive display of antique martialry. Remind me to tell you sometime of the curious stories I have heard regarding the origins of this enigmatic tribe.

Displaying typical ingenuity, the Starwolf are fond of using a modified halberd that incorporates inertial enhancers to increase the effective mass-energy of the weapon's impact. Other Starwolf melee weapons focus more on hunting purposes than outright combat. Depending on the prey sought, however, certain of these items are just as effective on the battlefield. "Skytrops," for example, are small spiked balls containing a small gravitic motor that allows them to be thrown over a far greater distance than the powered armor would ordinarily permit. They can be modified to home in on an armor's shield signature so that their flight paths curve toward the target. Many skytrops are coated with drugs or toxins, while others are timed to explode on contact with a target. The latter have the force of a microgrenade, but can be geared to produce an electron flux pulse that weakens the target's shields for an instant. The Starwolf have also been known to utilize rocket-driven spears and magnetically-adhesive alloy nets.

The Children of Phoenix prefer explosive-tipped javelins and fluxtorches. Part of this choice may be traced to the tribe's thematic obsession with fire, but undeniably Phoenix warriors are considered the most effective of melee fighters, even more so than the Diamond Sword. Some Children mount sharp blades on their vambraces and greaves, so that in close combat they have the opportunity to strike at their opponents without having to draw a blade. Despite their insistence on unity and their efforts to appear cultured and regally sophisticated, there is a brutal side to this tribe that causes me much puzzlement and unease.

Many Blood Eagle use a wickedly barbed katar, or punch-dagger. Some of these weapons feature a small laser engineered to fire from the hilt down alongside the center of the blade. In duels, the Blood Eagle use taloned gloves and swords, but almost never bring them into line combat. The typical Blood Eagle blade - if it is not a katar -- is curved after the Arabic styles of Old Earth. Indeed, sharp blades hold great significance for this ex-Imperial tribe, as you might imagine from

all the horrible stories. One of the enlisted ranks is even named after a knife, and one of their officer ranks literally means “Knife-Captain.” Of course, the Blood Eagle talent with knives is well-known in the wilderzone, Danli, well-known and feared.

ARMOR

Imperial adventure sims set in the wilderzone frequently portray the Tribes of Man as savages in garishly-painted armors adorned with spikes, hologram tabards, and fur cloaks. Those *zeit-visioneurs* who know better engineer a more realistic perspective, but even they are prone to fanciful flights. The one thing all depictions of the wilderzone share is the presence of powered armor. Even though perhaps only ten percent of the population at most even has the training necessary to use powered armor, the overwhelming stereotype in the Empire is that all tribals wear shells.

It is a stereotype we in the Empire should not let cloud our thinking. Though they have many strange customs, a brazen independence, and a penchant for tremendous violence, the Tribes of Man are *not* primitives. At the same time, there is a paradoxical truth in the popular misconception. Tribal warriors are trained to be deadly in and out of their suits, but by far the most significant combat unit in the wilderzone is the warrior in powered armor. When a tribal speaks of going to battle, she means in her hard-shell. Though tribal warfare can involve frequent switching of armors to accommodate shifting tactical needs, most tribal warriors keep a personal armor, to which they can become quite attached. The more “professional” tribes such as the Blood Eagle or the Stormguard do not form such emotional bonds.

Armors are technically called “scarabs,” from *SCARAB*, which in turn is said to stand for Servo-Coordinated Armor with Refluxed-Agility Boost. However, I understand this term could also refer to powered armor’s origins as a primitive form of exo-suit used by ancient colonists on the planet Venus in Sol system during the Cybrid wars. Despite its antiquity, few tribals use “scarab” in common parlance, simply calling the gear “armor, “hard-shell,” “shell,” or simply “suit.” There are indications that some more traditional tribes have lately taken to calling their armors scarabs once again-this practice is particularly noticeable in the radical faction of the Children of Phoenix: the Harbingers. (I’ll speak more of this group in a future report, but I warn you now that they are a frightening source of discord in the wilderzone, and I fear they are gaining influence.)

Engineering Basics

Armors are primarily composed of a layer of titanium-cerapolymer alloy fused over shaped plates of honeycombed semiflexible stahlplast. The stahlplast contains a dense ablative gel that provides a secondary defense against thermal penetration. Finally, a soft orthoderm padding cushions the wearer. Each suit features mechanisms that open and close the suit on the user’s command. A further automatic contraction-expansion capability in the frame allows the armor to alter its fit to accommodate the wearer, though this capability is somewhat limited.

Basic armor grants the wearer augmented strength, a protective shield aura, and enhanced mobility. The outer shell is quite resilient, and even without shields, an armor provides tremendous protection against physical attacks. The firepower of most modern weapons, however, means that unless a warrior wears a myrmidon, unshielded armor does not stand up to a

well-armed foe. All armors receive a peren-diamond varnish that greatly enhances armor longevity by increasing resistance to environmental conditions, general wear and tear, dirt, dust, and the effects of heat and cold.

Modern tribal armor incorporates many components we may find somewhat unsophisticated, but the design has been refined through ages of near-constant conflict, and the current result serves its purposes admirably. As with the weapons, however, the tribal philosophy is that the armor does not make the warrior; it is merely a tool that becomes effective only when used by a well-trained soldier.

Control Systems

Gross maneuvering in armor-running, using weapons, lifting, throwing-is accomplished via normal movement. In these cases, the wearer moves body, arms, and legs normally, and the armor amplifies that movement, adding strength and speed as needed up to the limits of the armor's safe augmentation rating. A sophisticated neural link detects and implements the desired range of effect, in effect determining whether a warrior intends her grip to hold a teacup or crush steel and bone.

The neural-interface biofeedback system also regulates auxiliary armor functions such as the command circuit, optiks, and the armor jets. The interface uses a mix of direct neural impulse (DNI), pre-configured macromaneuvers ("macros"), and other biofeedback from the user. For safety reasons, most armor functions require a dual-phase trigger to access a function, such as (1) thumb-touching-index-finger in conjunction with (2) a squint. An analogy can be made to ancient computer commands featuring such quaint "keystrokes" as Control-Alt-Delete. A tribal is trained extensively until she can use all her armor's features reflexively, from the vision-enhancing optiks to the famous jets.

Upon donning armor, a brief period is required for the neural interface to establish itself. Warriors have described the sensation of neural synchronization as a prickling across the skin.

Optiks

Armor optical systems are called "optiks." They include integral flash protection, binocular zoom, low light, and a Heads-Up Display that tracks energy use, weapon status, waypoints, and targeting. The system operates via a close-neural induction link that paints the display directly onto the cornea using microlasers in the armor's headgear. However, optical magnification and the other vision-enhancing features are enabled by the armor's visor. Typical visors include a mutable opticrys layer hardened with an outer layer of peren-diamond and an internal lattice of metaplas nanofilaments. I know, Danli. It's surprisingly crude, but I am informed it is very reliable and effective despite the inelegant, hybrid nature of the technology.

Given a little time, a warrior can adjust his or her optiks to unusual battlefield circumstances. However this kind of action must be taken when the warrior is out of the line of fire. To try to make such adjustments in the heat of battle is suicide, I am told. An armor's on-board pulse sensors allow the warrior to navigate and select targets even in utterly dark environments.

Command Circuit

Command and control tactical communication is accomplished via a linked encrypted radio circuit among the members of a squad. This feature is called the "command circuit" or (again in typical tribal parlance) "the Bleed." The command circuit, abbreviated "CC," enables a commanding officer to coordinate the actions of her squad, by setting waypoints, issuing orders, and providing other tactical direction as needed.

The tribals customarily maintain a sub-channel as a "public" frequency. Any tribal who patches into it can communicate with any other tribal within range-even the enemy. Nicknamed the "patch" or the "underbleed," this integrated radio channel is commonly used for taunts, challenges, and sometimes negotiations. It is an optional channel, and most tribals find it sufficiently annoying that they simply keep it mute.

Strength Augmentation

Even light armor grants the wearer several times the effective strength of an unarmored human, whereas the heavy myrmidons have been described as miniature Hercs (a rather obvious example of dramatic exaggeration). Practically speaking, lifting strength of a light armor is approximately five times that of a man of average fitness in his prime. A medium is perhaps thirty percent more, and a heavy is easily twice the strength of a light. In conjunction with T-grav nodes in the weapon stocks, the armor allows a single individual to carry more firepower than an infantry platoon of the Cybrid wars.

The microservo network enhances all tactically relevant muscle motion, including the hands, oblique abdominals, and rotator cuffs as well as the more obvious gross limb movements. Flexor expansion-contraction sequences are keyed to the armor's neural link such that augmentation activates in proportion to a warrior's perceived need. Thus, an armored warrior can crush a human skull as easily as she can pick up an egg.

The design restricts an armor's servo output to levels the human body can tolerate, though some stories tell of warriors overriding their armors' limits to accomplish feats of speed and prowess considered quite improbable in real life armor use. Again, the popularity of these "tales of battle" is a common thread whenever one discusses military subjects in tribal space. There have been some documented cases of warriors who ripped their joints apart and caused serious permanent injuries by overriding the safety parameters of their armors' performance. In the popular "Renegades" vid series (to which I shamefully admit my addiction), the heroes continually ignore their armors' limitations to perform completely superhuman feats. Remind me to send you an episode sometime. You'll get a kick out of the tacnuke machine guns.

Shields

Tribal armor shields are based on the same technology used during the Cybrid Wars and still used by the Imperial military today. The standard military paradigm of the last fourteen centuries still applies: Take down shields first, then armor.

Shield generators apply non-Newtonian fluid field harmonics to create a protective barrier of phased electromagnetic energy capable of deflecting high-energy attacks. I don't pretend to understand the specific details of the physics involved, but I hope to summarize sufficiently for

any reader not versed in the science. In this non-Newtonian model, the barrier's resistance increases with a magnitude inversely proportional to the amount of thermal, electromagnetic, or kinetic energy exerted at the point of impact. The practical threshold for triggering the shield's resistance is high enough that hand weapons and fists may pass unhindered through shields, but bullets or lasers will not. However, shields weaken quickly under sustained fire or a sufficiently powerful attack, since the actual resistance consumes enormous amounts of energy, often more than the power source can provide in a short amount of time. The shields are not one hundred percent efficient; some energy does bleed through to armor. Shields are more effective with kinetic energy than with thermal or electromagnetic attacks, hence the diminished role of non-explosive ballistic weapons over the last millennium. When resistance is not triggered, the ambient field does requires only a small amount of energy.

A tribal armor carries approximately a half-dozen shield nodes, usually one per limb and two to four on the torso and head, but configurations vary, depending on the designers' decisions regarding concentration of maximal shield strength. Approximately three centimeters in diameter apiece, the nodes create a force field aura around the wearer. Normally invisible, shields become visible when sufficient excess energy from an attack is reflected outward from the armor as light and low level gamma radiation. Tribal engineers skirt the energy drain issue by linking each node to an independent capacitor that provides power independent of the onboard energy cells. As capacitors burn out, shield protection drops.

Typically, a shield node burns out when an attack (or aggregate attack) exceeds the node's energy dissipation threshold. As node capacitors overload and burn out, the armor's shield protection decreases. Secondary damage (that is, damage that penetrates the shield aura) reaches the warrior consistently when the shields reach fifty percent, but the armor typically absorbs such a "damage bleed" quite well. As the shields fade toward zero integrity, the armor takes progressively more of the role of protection until it is all that keeps the warrior from death. When a damaged armor is repaired by nanites, the repairing unit transfers energy from its own source to replenish the energy in the capacitors. In some cases, tribal warriors can rig a refresh from their own energy cells, but they only do so under dire circumstances, as the procedure is a tricky one. The basic concern is that a link between a microfusion cell and the shield nodes risks a feedback surge that could disrupt or destroy the power cell itself.

As stated above, shields have a minimum energy limit that must be reached before the fluid field resistance activates. Lower energy attacks, such as those imparted by most melee weapons, do not trigger shield deflection. Hence, knives and other hand weapons can actually be used on the battlefield, though they must contend with the armor itself. Typically, the highly mobile nature of tribal battle mitigates against widespread use of melee weapons. In confined spaces and the hands of a highly-skilled blademaster, however, a sword can prove devastatingly effective.

The tribes have engineered an interesting feature into the shield nodes. Each node generates a field "bottle" that envelopes the entire armor to a thickness of two to three centimeters; the node but also concentrates protection for a half meter around itself. The overlap and the concentration combine to provide a layered aura that maximizes defensive potential. However, the true innovation comes in the tribal manipulation of the shield bottle's shape. The tribals have succeeded in having the bottle deform so as to partly cover weapons that normally would project

from the aura. This deformation occurs automatically for all standard tribal firearms. The bottle stops short of covering the mouth of the weapon, such that the weapon is not plugged by a shield overlapping the tip of the muzzle. For non-standard weapons, a warrior can simply cancel the bottle extension. When the extension is dropped, the shield aura does not cover a melee weapon, but conforms to the surface of the armor.

Some tribes, such as the Children of Phoenix, wear partial armor that exposes portions of the bare skin. The rationale behind this behavior is rooted in the wilderzone's honor-based culture combined with the Children's peculiar elitism. They seem to believe they are so superior to other tribes that they can expose their vulnerable flesh and still prevail. Consequently, Phoenix warriors rely enormously on their own agility to keep them from harm, fully aware that most of their protection comes from the shields-unless they happen to be wearing *Myrmidon*-class armor. However, as the flames of the Eagle-Wolf War spread, most tribals - even those of the Phoenix - have begun to increase the secondary protection of armor once again. Thus, the tribal stereotypes may be even less accurate in future, as half-naked barbarian warriors vanish from the wilderzone's battlefields altogether.

Life Support

Armors offer wearers the ability to function in otherwise inhospitable environments. Built-in heating and cooling units enable the wearer to operate in extremes of nearly -50°C to over 45°C. The armor's shielding units will also protect the wearer from excessive radioactivity that would otherwise be fatal, and environmental filters can screen out harmful toxins. The shield aura also provides protection against high pressure environments, but this capability is subject to shield degradation. Recently, many tribes have begun to produce sealed armors that can function as EVA suits in the cold and airless environment of space. I understand most *Myrmidons* already had this capacity, but now the lighter armors are being sealed as well.

Energy

A microfusion energy cell powers all armors. It is located in the back section of the torso, and is quite a heavy component due to the ultradense medium required for stil-fusion operation. The cell enables the armor's wearer to use the jets, keep shields online, and power energy-based weapons and packs. It has a limited maximum output per second, although for all practical purposes the energy it generates is unlimited. The need to manage available energy forms the primary foundation of tribal tactics and armor skill.

The armor's heads-up display (HUD) monitors the level of energy reserves available. When energy reserves dip to a certain level, all nonessential functions of the armor automatically deactivate and the cell begins its brief recharge sequence. Essential functions-which include shields, life support, the command circuit, and strength augmentation-are always maintained, otherwise the armor's utility would drop dramatically. The first priority of the armor is to keep the wearer alive and unharmed.

Armor also includes a certain amount of backup energy storage capacity, but the battery alone won't last long. Without the microfusion cell, backup on most armors lasts for less than five minutes if the warrior sustains use of jets and armor-powered energy weapons. With judicious jet use, a warrior can stay operational for over an hour on battery power alone. Warriors typically

keep a set of small tools in an armor compartment that can be used to remove and replace a microfusion cell from another armor, but this is a tedious and time-consuming operation. Mobile turrets and other deployed items that use microfusion are easier options. The tools can also be used to jury-rig a battery recharge from another armor or deployable device, which enables a warrior to continue operation as long as she has access to helpful squadmates or other convenient power sources. Nabterayl calls this practice "leeching."

Jets and Gravitics

The name "jets" is a misnomer. In actuality, the famed tribal armor jets are powerful ion thrusters paired with a gravitic subsystem that permits limited flight "jumps." The ion jets port from exhaust points located on the lower back of the *Peltast* and *Hoplite* armors and in the heels of the *Myrmidon* armor. The gravitics include stabilizers that enable the armor's wearer to remain oriented and upright during flight. The DNI interface allows a warrior's physical reflexes to play a role in the speed and agility of jet use.

A biofeedback trigger activates the jets. The location and nature of the particular trigger depends on the warrior's preference, but this is one area in particular that relies on the DNI component of the interface more than phased-sequence macromaneuvers. Once triggered, the armor jets provide thrust until the trigger is "released," at which time the jets deactivate and begin recharging. Cutting thrust is a flight maneuver that has saved the life of many a warrior with a sudden altitude drop to throw off an enemy's aim.

As with many tribal engineering choices, redundancy and durability is prized. It is extremely rare for an armor's jets to be disabled. However, the jets default to an inactive state if the energy reserve falls to below eight percent.

Acclimating to gravity differences between worlds can cause warriors to make mistakes on entering battle on a new world. Typically, faux-grav settings on D-ships are adjusted to allow the warriors to adjust their weapons and armor according to the target world's parameters. An armor's onboard gravitic systems incorporate an adjustment capability keyed to a reading of the local gravity. The armor's performance is then adjusted to account for the gravimetric reading. If the warrior wishes, he can override the system to remain at the same operating level. However, HUD targeting, ground agility, and jetting range can be severely affected by a change in gravity. On lighter worlds, warriors make few adjustments or throttle back jet output to conserve energy. On heavier worlds, the tendency is to increase the power output to keep agility and targeting performance within standard parameters.

Jet components are fairly modular and can be moved from armor to armor relatively easily. Over a recent dinner, Sub-Consul Margales St. Quebocher offered a rather hilarious story she'd heard about a Starwolf prankster who fitted jets to some cows and flew the poor beasts around his holdfast using a remote control. (Remind me to tell it to you in person when next we meet. It's even funnier with the facial expressions St. Quebocher used.)

The Warharness

This device is seldom featured in the entertainment sims, but it represents a crucial component of tribal armor. The warharness holds the unused firearms on the armor and allows a warrior to

swap between weapons swiftly. Simple warharnesses are little more than woven metaplas and alphasilk combat webs with attachment points for grenades, weapons, mines, and the like. They typically have mechanisms that release the weapon quickly upon the wearer grabbing and pulling the desired object. More advanced versions of this web contain interface-integrated microservos (IIM) so as to hold weapons automatically upon command, and to shift so that the desired weapon is easy to reach.

The most advanced warharnesses-which are quite rare-are composed of nothing more than a layer of nanites incorporated onto the armor's torso. These nanites are programmed to hold weapons and make them available to the user upon command. Hence, the weapons of a warrior possessing such a warharness simply "stick" to her back until needed for use. When the warrior wants to draw a weapon, she simply reaches for it, perhaps triggering the request with a quick macro such as by tapping first her fist and then her middle finger on her breastplate. The selected weapon then swiftly slides along the armor's surface so that the grip slides into the warrior's waiting hand. When the warrior closes her hand, the warharness releases the weapon. Needless to say, this feature is heavily customized. The Blood Eagle possess the greatest number of this type of warharness.

Armors also have standard belt attachments for holding grenades, flares, medkits, and the like. Blasters are light enough to be slung from the hip, despite their size being close to that of a carbine. For holding more or heavier weapons, however, a warrior must use a warharness.

The Grievers and some indie tribes sometimes use a spidery mechanical variation of the warharness, but these jury-rigged devices are prone to malfunction or damage in the field and have not found acceptance among the Four.

Donning and Removing Armor

Tribal armor looks heavy and cumbersome, but in fact it is extremely collapsible when not being worn and weighs far less than it appears to. *Peltast* armors can be carried in a duffel bag or small suitcase. A *Hoplite* can only be carried in a duffel, and is somewhat awkward to maneuver easily. A small person could not carry it without the help of a T-grav porterclip. *Myrmidon*-class armor is definitely too heavy to be carried by one person without assistance.

As I mentioned earlier, all tribal armors include microservos and memory-plates that open and close the armor along designated seams. A person simply steps into *Hoplite* or *Myrmidon* armor and it seals up around her. A *Peltast* is usually donned one piece at a time after decollapsing it, as though it were normal garb. Nanoseals close the seams tightly and only open to a sequence of touch commands, though these can be activated by the wearer very quickly if necessary. The armor's fit is typically snug to allow for the best somatic feedback, but light clothes can be worn without reducing the control efficiency to wholly impractical levels.

An armor's headgear will automatically bind back the warrior's hair (if any) so as not to interfere with control systems. As the neural interface synchronizes, the wearer will feel a minute twitch from the armor's servos as they run through a brief test sequence. Then the warrior's vision will blur momentarily as the optiks come online. As with standard Imperial HUDs, microlasers paint the data displays directly onto the wearer's eyes.

Maintenance

Despite the many innovations and clever workarounds tribal engineers have worked into armor designs, they cannot escape the need for maintenance. However, many armor systems are modular enough to encourage easy replacement. Entek repari baths make much basic maintenance relatively painless. However, entek only deals with physical aspects such as microservo arrays, armor plating, seals, and gross component integrity. Checking operational efficiency of complex subsystems such as sensors, the command circuit, the DNI, onboard computers, and shield aura gestalt-overlaps requires a human technician. In addition, field repairs from entek repair kits do not return damaged components to a pristine condition. The reparis frequently leave stress fractures and may have reduced the strength or integrity of other components from which the material was drawn for repairs. Moreover, inevitable armor variants mean the reparis may not be programmed with the specifics of a particular armor, and so the repairs may leave the armor prone to breakdown or malfunction if follow-up maintenance is not performed. Finally, although the armors are designed internally with null-friction materials at joints and moving parts, some lubricants are necessary. Reparis are known for poor repair of such junctures.

Rule-of-thumb optimal maintenance requires one man-hour of troubleshooting and service per three hours of operation in the field under combat conditions or in unusually taxing environments. While this time seems unusually low by Imperial standards, one must remember that tribal systems are far less complex than standard Imperial military equipment, though I understand our saar-marines now use armors that incorporate simpler tribal design principles.

A typical service (absent major battlefield re-repair) can be accomplished by a single person. For the exterior, the first step for a warrior or technician is to spray the armor's exterior with a cleaning solution and wipe it clean. The cleaner, the better, I am told. Even though the peren-diamond varnish prevents most grime from adhering to the armor's surface, dust and other material can accumulate in the joints and over the optiks. (This is not unusual, as Imperial equipment still has trouble in the dust pockets of Old Mars.) The next step requires application of an oily silver paste that contains metal and carbon molecules that provide repair material for the entek. In the final step, a typical repair pack is used to apply the entek. For interior components, a maintenance computer is patched into the command circuit and DNI for diagnostic purposes. Any damaged or fatigued components are repaired or replaced. The cross-layered opticrys components of armor optiks frequently require replacement, since realigning the thin sheets of molecular crystal is a time-consuming process. Replacement is typically easy for "generic" components, such as shields, microfusion cells, and sensor nodes, which are common to perhaps ninety percent of all tribal armors. Optiks and DNI components usually require replacement. Occasionally, a technician may not trust the entek to do the work. In these cases, microscopic goggles, a laser welder, and an autosleeve are used. Such special repairs are quite time-consuming.

DNI interface replacement is a complex process requiring a period of "retuning" a warrior's neural signature. Typically, the DNI "node" is easily removed and replaced in a new armor, an approach warriors invariably prefer to breaking in a new node. Older interfaces often retain remnants of previous signatures, dissonant elements that can interfere with armor operation. Of course, myths have sprung up around the ludicrous idea that the DNI interface imprints some of

its owner's personality, or even the owner's soul. A story in the Diamond Sword *Kohan Scrolls* tells of a newblood who inherited the armor of his uncle, a martial arts master versed in the *Kamisori* school of Venusian Zen. The newblood used the armor in a training match shortly after he received it. The style he used was far more advanced than his level of study, and he executed with a grace and speed that overwhelmed his teacher as completely as if his uncle still wore the armor. The newblood claimed later that he felt another presence with him, guiding each motion. As a consequence of stories like these, sworders value old interfaces and do not erase those used by masters and exceptional warriors.

Microservos can present problems when severe damage interferes with repari penetration or slags enough material together to confuse the entek. A microservo consists of a conductive metadura-coil fused around a flexor filament chain made of exo-crys. The exo-crys expands on application of an electrical charge, which is applied through the surrounding metadura coil. They contract when the charge is removed. The microservo cables network effectively mimics the human body's range of motion, though as armor weight class increases, range of motion and flexibility drops. A *Myrmidon* cannot match the moves of a *Peltast*, though I am assured it is not nearly as restrictive as its bulk suggests.

Battle damage often requires replacement of an exterior component or armor plate, particularly if the damage melted through several layers. Such damage often blends the armor's material and confuses the reparis, which may not "understand" how to recognize a muddled fusion of AKS and metaplas.

The Skinsuit

Beneath tribal armor, most warriors wear a skintight body glove made of entek-laced metadura. This deceptively sophisticated underlayer serves several purposes. It protects the wearer from chafing. It contains a nanotech recycling system that collects body fluids and other secretions, detoxifies them and uses the collected water to rehydrate the warrior. Waste material is shunted to a discharge port in the armor, to be ejected at the warrior's discretion. Finally, the bodyglove assists in establishing the neural interface with the armor, by providing an enhanced conductive medium via the wearer's own salt-laden perspiration.

Many tribals refer to the skinsuit as the "stinksuit." The name is an exaggeration, however, as the nanotech recycling components produce very little residual odor. In fact, IshM'lak wrinkled her nose more at the nickname than any memory of bad smells.

Design Philosophy

Peltast design philosophy values speed and agility, not raw power. Consequently, full coverage from the armor is not highly valued. The light microservos used in *Peltasts* burn out quickly if augmentation tolerances are exceeded. Given the lack of complete hard-shell coverage on many *Peltast* models, the lifting capacity provided from the armor comes more from a T-grav assist than from raw strength augmentation. The hard-shell components of several designs reveal quite a bit of the skinsuit.

Hoplite designs are intended to be mobile and hard-hitting, combining the best features of *Peltast*

and *Myrmidon*. However, as with so many "compromise" designs, it appears to do nothing particularly well. Nevertheless, I am told that many tribal soldiers swear by their *Hoplites* and consider them either heavy recon or light assault gear.

Myrmidon designs are incredibly tough, and though they lack the deadly speed of the *Peltast*, they are unmatched in a defensive role. Moreover, the dense armor provides real protection once the shields drop, and a thick microservo array gives the wearer serious augmentation. A *Myrmidon* can deliver devastating blows capable of killing a *Peltast* outright-if it can hit the lighter warrior, that is. And that challenge, as always, is the rub. On the other hand, a Blood Eagle acquaintance told me of a highly-skilled Sikkyn-Captain who killed a *Myrmidon* in a hand-to-hand duel while using only a *Peltast*. This individual repeatedly delivered jet-assisted kicks to the head until the *Myrmidon's* neck servos overloaded. Very, very difficult maneuver. The victor was Starkar Mace, who you might remember once served as the leader of Alexandre Konovalev's personal guard. Mace was killed during the Marathon Pennant's defeat by the Starwolf in the Fourth Battle of Hepta Ourubis III.

ANTI-GRAVITY (T-GRAV)

One of the most ubiquitous technologies in all human space is anti-gravity (commonly referred to as "T" grav after the "ti" in "anti"), which we have had for over a millennium. The tribals are no exception. Although they do not create the elaborate floating cities of the Empire, such as Eleä Jacitala Es, Aloft, or New Xanadu, they do not hesitate to set floating citadels over their cities and holdfasts. Some tribal settlements are essentially underground dwellings, but I have yet to see any tribal town or holdfast where the people live in the sky.

There is little remarkable here, so I will be brief. Tribal T-grav capability is essentially the same as that of the Empire: *pi*-field inducers generate and direct gravitons or anti-gravitons in a manner that bypasses the need for incredible amounts of mass. T-grav technology can levitate items as small as vases or as large as the tribals' blocky, inelegant citadels. As with our gravitic nodes, lifting capacity is determined by the power-to-mass ratio, which in a curve defined by to Muennichar's Law (levitating greater effective mass requires a near-geometric increase in power). Interestingly, the tribals tend to keep their T-grav generators on separate power sources than those that power shields, etc. These microfusion paks are numerous and are diffused throughout the very walls of a base. This practice explains why tribals can destroy shield and weapon generators in a floating citadel, but fail to knock down the building itself. I believe the design is an intentional product of the honor-based ritual warfare so prevalent here, the better to reduce collateral damage. I hear that on several occasions tribal holdfolk or city dwellers have come out to witness a flag war between two opposing citadels, staying, of course, well outside the permitted boundaries of the conflict. I cannot imagine they would do so if the citadels were in danger of falling.

MATERIALS & CONSTRUCTION

Anti-Kinetic Steel (AKS)

This titanium-cerapolymer alloy forms the outer shell of tribal armors. It is extremely resistant to kinetic and thermal force and nearly diamond-hard. As with most exotic alloys, it's expensive to produce, even with entek. Therefore, it's rarely used for anything but armor construction.

Strangely, it is susceptible to a peculiarly corrosive mold growing on its outer layer, which is the main reason tribals varnish the armor with peren-diamond. The "rust" produced by the mold does little more than discolor AKS, but given time, it can penetrate deeply enough to interfere with some of an armor's peripheral circuitry. You'll never see rusty armor on any decent tribal, Nabterayl insisted, much to my amusement.

Bioplas

An advanced plastic with flexion capability via shape-memory imprinting triggered by an electrical charge or kinetic impact. It's not as durable as metaplas, but it's far lighter. It is often woven into articles of ordinary-appearing clothing that can protect the wearer somewhat from light weapons fire.

Cerapolymer

A ceramic-plastic material used in vehicle engines, tools, and appliances. Hard and extremely thermally tolerant. Lighter than ceramic but not as light as fully plastic materials.

Crys

Best described as a glass-plastic hybrid, crys is much harder and less flexible than plastic. It is easily worked into a variety of shapes, and its innate transparency makes it perfect for windows and a variety of other uses. During production, its qualities can be optimized to fill particular roles. Unlike many other materials, crys is usually "grown" in a process that's relatively slow compared to other material production. It is therefore somewhat more expensive.

Duracrys

> This variety of crys is optimized for thermal and kinetic durability. Very, very tough, it is used for space and military purposes. It lacks any of the structural fluidity of other varieties of crys. Examples of duracrys use include armor visors, laser focusing lenses, and spaceship windows.

Exo-crys

> Exo-crys forms the heart of a tribal armor's strength augmentation. Evolved from ancient Herc technology, hair-thin exo-crys flexors are braided into a "microservo" cable that expands under electrical current and contracts when the charge is cut off.
>
> Despite their long history, flexors are far more reliable than hydraulics or other artificial muscle systems. Prolonged use under extremely cold conditions - such as those faced on the outer planets of Sol during the Cybrid Wars - can cause exo-crys to become brittle and crack, but such failure is gradual and easily mitigated.

Opticrys

> This variety of crys is the least durable but has the most flexible structure. It is used in optical sensor arrays to provide quick and clear magnification. Due to its ability to selectively deform its structure under proper electrical stimulation, opticrys lenses provide unsurpassed magnification. However, tribal engineers seem to have ignored the potential of the material for laser focusing. I believe this neglect is the result of a deliberate design choice, as the tribes prize durability and reliability above virtuoso

performance, and opticrys-focused laser rifles would be noticeably more fragile than the standard duracrys ones.

Opticrys can also be manufactured for holovid displays and computer datashards, since the optical storage capacity is enormous.

Parasteel

A very hard, dense, and resilient metal that holds an edge better than anything. Frequently used in high-quality sword blades. In such swords, the *duracore* variety incorporates a dense metaplas core within the blade's spine. This addition greatly increases the sword's tensile strength.

Stahlplast

Equally useful for constructing buildings or armor, stahlplast is, as its name suggests, an advanced blend of high-grade steel with plastic. The resulting fusion has produced a superdense, high-strength material that is nonetheless relatively lightweight for its mass. It is conductive, but has a much higher resistance than other metal-impregnated substances. It is also virtually rustproof, even when its bare gray surface is exposed to the elements for prolonged periods of time.

To say that tribals are overfond of unadorned stahlplast in their architecture is a profound understatement. I tell you, Danli, I am sick of the stuff, sick of gray buildings that squat like metallic bird droppings in almost every tribal holding I have visited. Only the most hideous damage seems to mar thick stahlplast walls. The only negative thing I've heard about it is that once its shape has been set, it is almost impossible to rework. Damaged stahlplast is notorious for its flaws and hidden weaknesses, although repari application can mitigate problems for a time.

Metaplas

A workhorse synthetic evolved from the Cybrid Wars, metaplas is used whenever a durable and lightweight material is needed. It can be made as rigid or as flexible as necessary, and can even be made to vary its conductivity under proper conditions. Metaplas variants have been used historically for everything from vehicle and body armor to dinner plates, clothing accessories, and firearms. Metaplas can be made in any color imaginable.

Metadura

Metadura is essentially a conductive, highly flexible form of metaplas. It is usually used in fabrics or circuitry, and it is extremely difficult to tear or penetrate, though it is not as thermally resistant as straight metaplas.

Synthex

A cheap variety of low-grade metaplas used commercially. Easily recycled.

Peren-diamond

A synthetic diamond composite with substantial tensile strength, peren-diamond is commonly used as a protective varnish on the exteriors of armors and spacecraft. It sheds heat well and is nearly impervious to dirt and oxidation. It wears away with time and use, but is easily reapplied.

BIOTECH

I have little to say in this area, since the wilderzone population uses mostly hard tech. Tribals tend to be suspicious of organic-based technology, more than we are in the Empire. There are a few obscure tribes who dabble more in biotech, but none of them have come to prominence. One of the great concerns, naturally, is the use of biological warfare, which the Tenets of Harabec expressly forbid. Already concerned with the ever-present threat of x-pox has made tribals rather sensitive to the danger of artificial plagues. Besides, modern panimmunity treatments mean any military disease organism would have to be incredibly virulent. Most wilderzone facilities haven't the resources to create individually-targeted diseases. Perhaps we should be thankful for that, given recent Imperial history.

Implants

As a rule, the wilderzone inhabitants use few, if any, biotech implants. They are prone to viewing invasive technology as anti-human, especially crafted biological constructs.

Breeding and Eugenics

The Tribes of Man breed livestock as does the rest of human space. They have also incorporated genemod foodstuffs into their diets, but they are generally distrustful of such products. Compared to the Empire, the foods here are natural, wholesome, and bland. (I still miss spider-meat truffles like the ones we used to share at Vinalam's during our University days. And the blood tomatoes! As you see, Danli, I sit here in the backwater of human space and long for the luxuries of the past. You will have to send me a package to succor me in the meantime!)

The tribals do not, to my knowledge, practice any organized form of eugenics. The x-pox and the comparatively high mortality rates seem to deter such artificial selection, though I believe the Tenets also speak against this issue. Occasionally, I came across fanciful stories of hidden tribes inbreeding themselves into some kind of cyclopean supermen, but such tales always proved to be products of some jongleur's overactive imagination. The Tribes of Man appear to hold eugenics programs in much greater disregard than we of the Empire. I wonder how they will fare when the Scourge finally turns its attention to this part of the galaxy.

MEDICAL APPLICATIONS

Medkits

Since a comrade with a knitterbeam may not be available when a warrior sustains battlefield injury, every standard tribal armor includes a medkit. Unlike the automeds of Imperial armors, tribal medkits must be applied manually. The central item in a medkit usually consists of a spray applicator containing entek docs, painkillers, and adrenaline in a liquid solution. All sprayers feature a nozzle designed to adjust the spray to access a wound through a variety of armor breaches.

The liquid medium surrounding the docs is a general antibiotic and local analgesic, and is also rich in calcium and iron. Since the majority of combat injuries involve burns, the spray also includes a Quikskin option that covers the wound with a quick-drying bioplas film that protects against infection. Many armors keep an additional small sprayer in a vambrace or greave compartment. Warriors commonly equip themselves with emergency spray contents according to

individual preference, but not all customization is medically oriented. The Gorgon Killers are known to load their secondary sprayers with a cocktail of amphetamines, synapse boosters, and adrenaline. Ish'Mlak says they call it "Berserker Juice" or simply "Killjuice."

Bioplas pressure bandages and casts are also a standard item. The latter resemble a compact cloth sleeve that hardens to rigidity when the control tab is pulled.

Panimmunity Boosters

With the threat of epidemics high from unregulated travel between worlds, the tribes have consistently worked on panimmunity boosters that incorporate viral and bacterial material from various worlds. These boosters fail to stem the high infant mortality rate that contributes to the wilderzone's relatively low population, but they are effective enough for adults. When traveling to distant star systems, it is common for warriors to receive boosters that increase immune response and provide enhanced protection against exotic infection.

Cloning and Regeneration

Cloning is available in the wilderzone, but mostly on larger worlds that enjoy fully-equipped hospitals. Some holdfasts clone livestock, but that technology is relatively less complex and will not support cloning of selective human tissue. Thus, limb and organ replacement requires access to major medical facilities.

Most heavy recovery is done in regeneration tanks, wherein the patient is completely immersed in a dense fluid of nutrients, antibiotics, and sophisticated nanodocs. Some holdfasts have these facilities, but again, they are typically found only on the larger or wealthier worlds. The Blood Eagle use Evacuation D-ships equipped with a dozen or more regeneration tanks for the most seriously injured warriors. Patients in a regen tank are commonly sedated to prevent them from moving and interfering with the various electrostim and intravenous lines connected to them as part of the treatment. Oxygen is supplied via a mask or simply by impregnating the fluid medium with sufficient oxygen to be breathable, much like standard deep-sea diving methods.

Limb regeneration without cloned replacement parts is not possible in the wilderzone.

CYBERNETICS

Implants and Limb Replacement

Hard tech implants are not uncommon here, but usually result from replacing body parts lost in combat and not susceptible to regeneration or cloning. Most implants are for glands, bones, or organs. However, some qualify as actual enhancements, such as hyper-adrenaline glands, subdermal armor, reflex-boosting neural wiring, and the like.

Tribals typically do not trust enhancement implants, which are expensive and require even more work than the usual implant to synchronize with an individual's physiology. Moreover, in the case of warriors, cybernetic devices can interfere with an armor's fitting and with armor neural control systems. Aside from a few optical replacements and the occasional limb replacement, warriors avoid deep cybernetic work, especially neural boosts.

Most cybernetic limbs use simple hydraulics, but the more expensive models use flexor technology. Sophisticated neural connections allow a modicum of sensory feedback. Advanced limbs have dermal sensors that replicate tactile input. These can be made to work with armor neural controls with some adjustment to the appropriate armor subsystems, but it takes an experienced armor tech or weaponsmith to do so.

Immortal Brains

A fascinating question out here. Depending on the tribe, you get vastly different reactions. The Blood Eagle don't believe in Immortals, or so I am flatly told. The Children of Phoenix view Immortal Brains as holy vessels of sainted souls or the mind of God. Most Starwolf assume an Immortal would be a super-Elder deserving of immense respect but not veneration. The Diamond Sword priest I spoke to on this topic tried to convey something about Immortality being an alternative path to enlightenment via "dreaming reincarnation." I'm not sure what he meant. I have an uncomfortable feeling that the Immortal question plays a central role out here, more than the deification of Harabec. Most tribals *believe*, Danli.

The tribes do not have any such technology. Of this much I am certain. But the belief structures with regard to Immortality are fascinating. I may make them the subject of a future report.

COMPUTERS

Typical Computers

Not so terribly different from the Empire, though far less apt to take the form of jewelry and body-sized holodisplays. The memory of the Cybrids and Prometheus runs deep here, as you might expect in a place so steeped in the legends of Harabec and Caanon Weathers. A typical tribal computer consists of a small metaplas housing for the netnode, something easy to carry in the hand and weighty enough not to blow away in a stiff wind. The display is usually a screen in the form of a thin opticrys panel layered between transparent layers of metaplas, though hologhosts are also frequently used (though far less private). Vidgoggles offer privacy for those who prefer to keep their computer display from prying eyes. Input is accomplished by stylus, vox, or datakey. Some systems use hologram controls with fingertip-tracking. All-in-all, nothing remarkable.

As in the Empire, computers are severely limited in general networking complexity so as to avoid approaching the critical proto-sentience stage. Any hyperadvanced system AIs are heavily-monitored, narrowly dedicated idiot-savants, never broad-spectrum geniuses, and they rarely, if ever, communicate directly with each other. But such advanced systems are extremely rare. History has shown that the average user needs little more than a simple device with moderate storage. Quantum-nodes allow lightning searches of local worldwebs, so actual processing speed is comparable to commercial Imperial systems.

Datashards

As I mentioned above, they still use datashards out here, quaint opticrys spikes protected by a synthex sheath. The Tribes of Man lack the interstellar network we have in the Empire, mostly due to tribal fractiousness, but there are also issues of sparse quantum reed supply. Data smuggling between star systems is still wholly physical.

About three centimeters long and half a centimeter wide for practical ergonomic reasons, a datashard tapers slightly toward the tip. The actual matrix which focuses the quantum data exchange with the computer is located in the tip.

Slicing

Tribal slicers are much more like elite commandos than Imperial webcutters. Because so many systems are dedicated and minimally networked, slicers often have to access a targeted system manually. Some civilian worldwebs are vulnerable to slicing, but the system ravelers confine any mischief to an acceptable level. In general, web addiction syndrome is far less developed in tribal space than in the Empire. Call it a beneficial effect of the frontier mentality. Tribals enjoy good vids and holodreams as much as the next citizen - but far more casually.

Tribal slicers occasionally try to slice into enemy command circuits, but the honor-based culture and the highly mobile nature of tribal combat makes this practice unreliable at best. Most command circuits use a shifting encryption algorithm that makes on the fly slicing nearly impossible. Still, I hear it has been done, so the wilderzone must have some advanced talent. Military slicing applies more to dataraids from enemy computers.

Synthralls

Synthralls, or *synners*, as tribal slang has it, are robotic servitors with sufficient AI to accomplish basic labor tasks. Some tribes have a secondary combat-programmed AI that patches synthralls into the local command circuit. The Tenets consider this acceptable, but honor codes do not apply against synthrall opponents. Because of the system limits, combat AI is adequate to basic defense or offense, but lacks initiative or creativity. Hence, synners don't display much flexibility, and their tactical decision-making slows in the midst of a conflict with many opponents.

Tribals, like any other sane human, become uneasy when they see armed autonomous machines. As a fail-safe, all combat synners have self-destruct sequences that can be triggered via the command circuit.

A passing jongleur told a tale about a Griever band that recently tried to use a horde of combat synners to carve out a holding for itself on the fringes of Starwolf territory. They called themselves the "Bone Rippers," and they had come into possession of an autofactory which they used for making new synners. Unfortunately for them, they underestimated the local Starwolf. When the Grievers started raiding some of the fringe Starwolf worlds, the Starwolf elders dispatched a Vengeance Fangs force and exterminated them. The jongleur claimed the battle took place on an out-of-the-way world called Desicca III and was quite the bloody affair. In a rather surprising plot twist, these Grievers apparently had access to equipment manufactured in the Empire. Another attempt by Unitech to create a corporate state in the wilderzone? The jongleur didn't say, and I find myself still wondering about this loose end. This story isn't the clearly impossible account I've heard in so many tales of battle. It had some thrilling details that rang quite true. I'll try to get you a transcription if you're interested.

"WEAPONSMITH" TRIBES

Only a few multi-stellar corporations - such as Unitech, of course - operate in the wilderzone, usually under treaties with the Four. Everything else is local or tribe-based. In terms of the "art" of weapons technology, specific tribes have risen to fill the need for technical expertise in crafting the complex armors. These weaponsmith tribes are typically small, with no more than a world, possibly two, under their control. They focus exclusively on producing quality weapons and armor for tribal warfare. Most indie tribes obtain their weapons from such a tribe, in return for food or art or raw materials. Some of the smaller indies even pay for tech advisors from the weaponsmith tribe to perform maintenance duties and teach technical skills. Needless to say, tribes that depend on such services quickly become fast allies of the providers. Each of the Four has alliances or sub-tribes to meet weaponsmithing needs, but even they do business with outside tribes.

Most weaponsmith tribes are traders who maintain strict neutrality. The independent ones have formed a Compact with each other, to discourage assault by aggressive independents or bands of Grievers. There are reports that the Compact has an elite group of mercenaries on retainer to use as a retaliation force, but no one can confirm this for me. I did receive a mysterious message that warned against further investigation into this shadowy "TDC." For the moment, I proceed with caution.

For purposes of further illustration, I have included summary profiles of the three most well-known weaponsmith tribes here in the wilderzone.

The Sabot-Styx

This shadowy Blood Eagle lineage (their term for a sub-tribe) is the primary weapons and armor manufacturer for the tribe. The "snakes" (the nickname comes from likening the abbreviation SS to a snake's hiss - rather than conjuring persistent images of evil from the pre-Devastation era) are famous for their expertise, particularly with explosives and projectile weapons. They command near-Imperial technological capability, and their numbers include some of the most accomplished pure scientists among the tribes. Finally, they are certainly the purveyors of Blood Eagle covert ops technology.

The Legate believes the Sabot-Styx intend to reintroduce cloaking technology to the wilderzone as the war with the Starwolf intensifies. Otherwise, they act as any other Blood Eagle lineage, and are as much involved in the tribe's murderous internal politics as the Halakar or the Nagashima. Rumors of Sabot-Styx involvement in extensive underworld trafficking are rampant, but I have not been able to substantiate anything at this time.

One curious piece of information did reach me, and I suspect you'll find it amusing. The Sabot-Styx apparently grade all their prototype weapons according to a battery of tests that is unremarkable except for one peculiar custom. The final test of a war weapon design is the damage it can deliver in a single shot to a human head. The curious part is that the weaponsmiths construct the target heads of high-density metaplas, far tougher than any human skull. If a weapon fails this test, the smiths always make adjustments until they feel a sufficient damage threshold is reached. This is one explanation as to why even ordinary Blood Eagle sidearms make often use plasma technology or Armor Piercing High Explosive (APHE) bullets.

The Sabot-Styx control four worlds deep within Blood Eagle territory. The Legate has hinted that they favor the tribe renewing ties with the Empire, but that they are unwilling to commit their political resources toward such an effort. Perhaps exploratory overtures on our part would be productive, in light of the Blood Eagle's current turmoil.

The Forge of Hephaestus

The small but vocal Forge of Hephaestus tribe claims to have invented most of the weapons of war currently used in the wilderzone, a preposterous idea most tribes ignore. However, the Forgers' engineering skills seem formidable beyond doubt. They are reputed to be the most effective technicians in tribal space, specializing almost exclusively in small-arms and custom armors. They pursue a rigidly evenhanded trading policy with little negotiation, since their reputation for unsurpassed quality gives them a considerable bargaining advantage. They have emerged as the first-among-equals of the Weaponsmith Compact.

So far their neutrality remains uncompromised. Their skills make up for an appalling lack of social graces and disturbing eccentricities. Their numbers are said to be quite small, and they share the low-gravity world of New Samaria with two other independent tribes. The low gravity of their home explains some of their unique character. When they travel offworld, they disdain gravitics or biotech muscle enhancement regimens, instead choosing to wear exo-skeletons of their own construction to assist their movement. I haven't met one of these individuals, but I hear they decorate their exos with buttons and holo-slogans, and always travel with toolkits. Their exos give them a strange, almost limping gait, and surely harbor some hidden capabilities.

The Daughters of Iron

The DOI, as they are popularly known, are independents allied with the Starwolf. They claim descent from a dissident band of Imperial technicians who fled the Blood Eagle in 3490 after that tribe abandoned its Hercs for lack of replacement parts and supplies. They have since become one of the more aggressive weaponsmith tribes, selling services to any and all who can meet their price. I have not ascertained the reasons for their split with the Blood Eagle, but it's clear the enmity has persisted over the centuries. A Blood Eagle acquaintance of mine claims the DOI problem is a mystery to his people. To quote him: "They left us centuries ago, and we let them go. They're small fry. We don't have any grudges there."

Whatever the truth of the matter, the DOI allied with the Starwolf in 3932, and have worked to upgrade Starwolf tech and infrastructure ever since. The highly-diffuse settlement and independent nature of the Wolves has made this task even more challenging. I heard just last week that Fury has declared that the DOI have abrogated any claim to neutrality and should be considered "part of the Starwolf."

Perhaps unsurprisingly, the Daughters of Iron specialize in vehicle repair and modification, though they are active with armor and hand weapons as well. As their name indicates, they follow a matriarchal society. My contacts tell me they are skilled warriors who do not control any particular world, but collect in modular space habitats which they move from system to system. I have heard estimates placing their numbers at no more than fifteen thousand.

HERCS

As I conclude this report, Danli, I feel it appropriate to end with a short discussion of HERCULANs in the wilderzone. Though the tribes focus the bulk of their strategy and tactics on the use of the Scarab-clad tribal warrior, the truth is that the larger tribes - especially the Four - have Herc-equipped forces on every major world. These forces are small, but they are organized so as to be highly mobile and available to transfer quickly to a battlefield somewhere on the Hyperweb. They are clearly meant more to safeguard the most important worlds, but they are also the tribal answer to the threat of a full-scale Imperial annexation. If the reassertion of Imperial authority beyond the nominal claims currently tolerated ever comes to pass, the Tribes of Man will have Hercs to help counter Imperial heavy armor. Tribal Hercs are a generation behind modern Imperial designs, but they may be catching up fast. The Blood Eagle and the Diamond Sword in particular seem to be engaged in HERCULAN mobilization at the moment. The Children of Phoenix and even the Starwolf are soon to follow.

Tactical Role

Hercs bring Armageddon to the battlefield, weaponry with the firepower to penetrate thick stahlplast walls and destroy heavily-shielded grav tanks in mere moments. The light models are vehicle-killers, whereas heavy ones are assigned to assault bases and heavily-armored stationary targets. All Hercs can be used in an anti-personnel role, but a fireteam of well-equipped tribal warriors armed with anti-vehicle weapons offer a serious challenge to a Herc.

Mobility

Gravitic boosters and inertial dampeners combined with fast-twitch exo-muscle systems of polybraided neurocrystal make modern Hercs far more agile than older generations of Hercs. Staying in motion is still a vital part of any pilot’s strategy, but Hercs carry enough protection to weather heavy fire. When faced with tribal infantry, a Herc can pause for a few moments to take better aim. Tribals who attack Hercs must learn to move quickly, use teamwork, and take great advantage of the surrounding terrain. Confronting a Herc in the open is suicide.

Anti-Herc Weaponry

Anti-matter tipped tactical warheads and powerful anti-vehicle mines are the primary mobile infantry weapons used against Hercs, in tandem with targeting lasers and motion sensors. My sources report that tribal militaries may be experimenting with grav tank “Herc hunter” platoons and flyers armed with gravitic implosion torpedoes. Heavy plasma and blaster batteries combined with ELFs provide tribals with formidable defenses against HERCULAN assault. It’s no secret that most of these measures are directed at the scenario of a full-scale invasion by the Empire. I believe tribal strategy would be to cause any such conflict to cost the Empire as many lives and as much equipment as possible.

Conclusion

Danli, if there is any piece of advice I wish to emphasize, it is this: Do not underestimate the ingenuity and the technical sophistication of the Tribes of Man. They are not the crude barbarians the Coreworlders continually mock in their little political dramas, though undoubtedly less cultured than the average Imperial citizen. The Sirdar Corps should already know tribal military capability is substantially greater than media reports indicate. This is a warrior society. They have fought each other for centuries, and they are not exhausted; au contraire, tribal

cultures are vibrant and dynamic. People are optimistic and highly independent. Combat training is widespread, part of the culture. I believe the tribes can possibly triple or quadruple their standing forces if pressed, at least for a short time. Their biggest vulnerability is their fractiousness and their small navies. Still, if they were to act in unison, they would be difficult to overcome. The Empire would prevail in such a hypothetical combat, but at what cost? Besides, I don't believe the Imperial military is capable of sustaining a war against both Scourge and the tribes at the same time. I urge you to pass my observations to your contacts in the Halionate. Perhaps it is time to see if the tribes could be allies in the war with the Scourge.

Before it's too late.

REMARKS TO REPORT A72384-Ψ
IMPERIAL INTELLIGENCE
401214.2114TS
ALCAZAR-MERIDIAN III

… maximum encryption…

///FROM -- Colonel Danladi Haroun-Nicanor///

///TO -- Director Hesho Ayazumi [Halion Eta]///

Operative Scherazade has provided a reasonably comprehensive summary update of the current state of tribal technology. Please review it. There are a few new items I found interesting, especially her coded references about a superweapon that has been field-tested in the wilderzone. I have instructed Scherazade to continue her investigation of tribal military technology under academic cover. Perhaps her tribal contacts will turn up something more.

There have been numerous reports of Scourge activity along the Amrir-Sforza Axis near the fringe of the wilderzone. I maintain that this mysterious weapon must be the reason Draxon musters at least three of his Greater Hordes. We must *not* let this thing fall into Draxon's hands, especially if what we've heard about its potential is true. I suggest you ask the Grand Sirdar and Lord Protector whether they can free up a few Legions. We may need to go in ourselves.

Personally, of course, I believe the barbarians deserve what's coming to them. For centuries, we of the Empire have been locked in a death struggle with the Scourge while these various little inbred sects of tribal filth squabble amongst themselves. And when we tried to establish a base in the Kepler March? A refugee settlement? The thrice-damned Phoenix came in and burned everything. As far as I'm concerned, the Hordes can raze every damned one of the barbarians' pigsty holdings.

My apologies, Hesho. As you can see, my feelings haven't changed. I'll never forgive the murder of Fritha on Kepler, but that's enough venom for now.

I'll keep you informed as to any new findings.

-D.