

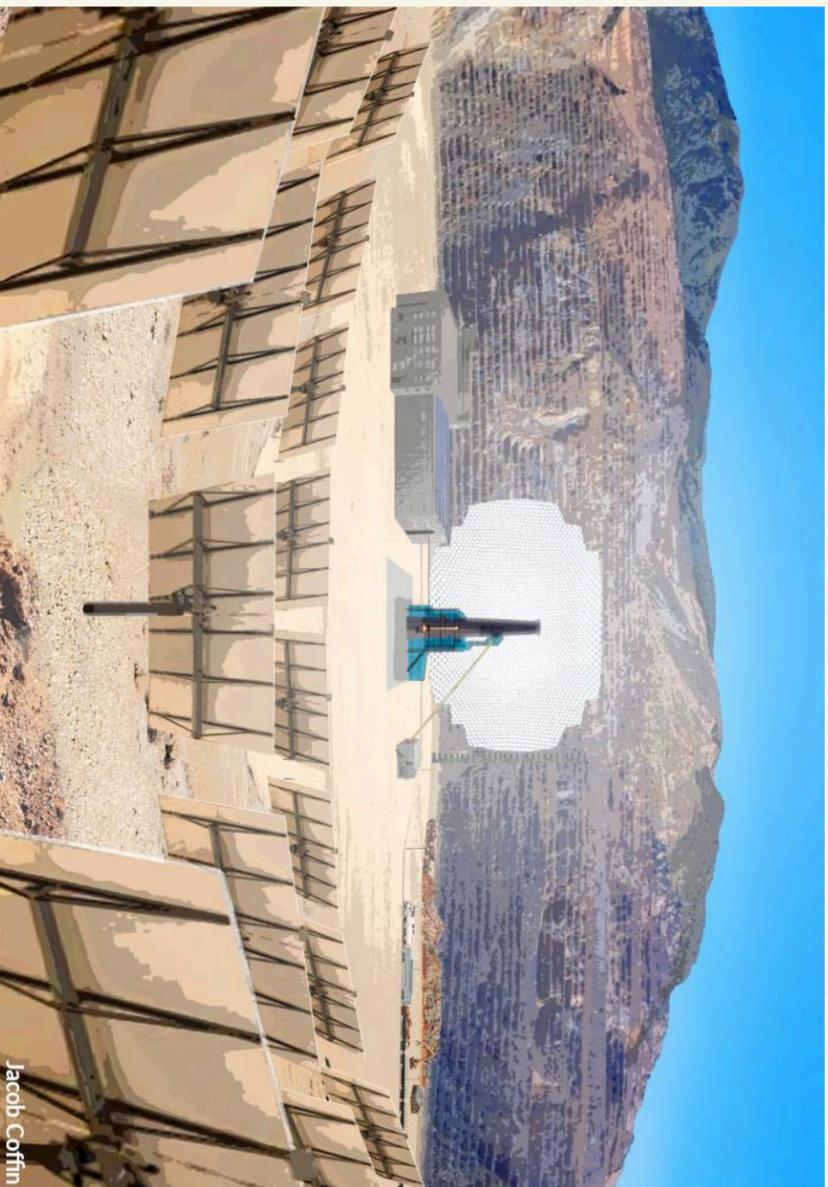
**Sexual Organs:** This is assumed to be self-explanatory. It should go without saying that players and GMs should employ sexual themes within the boundaries set by the rest of the table.

**Heart:** A cell-based heart replaces the mechanical pump used to circulate synthetic blood.

**Lungs:** Cell-based lungs replace synthetic membranes to dissolve oxygen into the circulating synthetic blood.

**Digestive system:** a combination mechanical-microbial digestion chamber extracts water, macronutrients, and micronutrients from bulk organic matter to sustain cells. This can replace the need to load a nutrient tank with cell-maintenance broth.

**And so on:** Readers are welcome to use the same principles to imagine eyes, bones, bone marrow, muscles, and whatever other systems they'd like to create all manner of bionetic cyborg synths.



Jacob Coffin

## Inventory & Carry

The items a character has on them are listed on page 3 of the character sheet: the Actions & Items sheet. Rather than employing a system of encumbrance, characters may carry on their persons anything that they are able to describe carrying to the GM's satisfaction. These items should all be represented on the Actions & Items sheet. If at any point a player can't fit everything they would like to carry onto this sheet, that's likely an indication that they're trying to carry too much. Cards may be sized to reflect the bulk of an item if desired but they are not required to faithfully represent each item's size. The purpose of the Items & Actions sheet is simply to make players more aware of the tools at their disposal and to discourage hoarding.

The items a character has on them are not expected to reflect a complete catalog of all the items a character owns or can access. Players are free to keep an inventory of all the items that they have at their disposal, but they should limit to the items of a truly rare nature. Players can obtain special items - a crowbar, a shovel, a geiger counter, a magnetometer - relatively easily from friends or tool libraries, most of which will deliver items by courier or drone. As this is a post-scarcity setting, a player's ability to acquire something is dependent only on their ability to justify being able to acquire it, and GMs are encouraged to help recommend sources to players.

The GM should reward players who return or donate collected items to the tool libraries or recycling centers. This could be as simple as informing characters that they received a thank-you message, having a recurring 'fixer' contact offer to assist with sourcing needs in the future, or having a librarian finally invite the group to one of their legendary parties.

### Means of Carrying Things

It bears repeating that players are advised not to view the items available to them as magic, weightless, voluminous things. A lot of items have been heavily miniaturized and may fit in a pocket, but the player is still expected to understand that it needs to be in a pocket in their pants, not some kind of unexplained pocket dimension. When trying to satisfy a common player urge to have any and everything available to them, suggest that they use as many of the following as is necessary to fulfill their Batman fantasy.

- |                      |                          |                               |
|----------------------|--------------------------|-------------------------------|
| • Regular pockets    | • A micro backpack       | • In their sock               |
| • Cargo pockets      | • A standard backpack    | • A cargo belt                |
| • Hidden pockets     | • A large cargo backpack | • A specialized holster       |
| • A fannypack        | • A bindle sack          | • A walking stick             |
| • A hip satchel      | • Under a hat            | • A walking stick compartment |
| • A shoulder satchel | • Tucked in a headband   | • A subdermal pocket          |
| • A messenger bag    | • In a sports bra        | • You get the idea            |
| • A briefcase        | • In a waistband         |                               |

**EMP resistance:** Shielding and circuitry upgrades enables a machine to sustain high levels of electromagnetic shock with reduced disruption or permanent damage.

**Thermal endurance upgrade:** Upgrades to temperature-sensitive systems enable operation in more extreme conditions.

**Radiation endurance upgrade:** Upgrades and shielding to sensitive components to allow safe operation in space or other high-radiation environments.

**Waterproofing:** sealed compartments, oil immersion, and fiber-optic replacements for data circuits allow safe operation in water up to 10 m of depth. Greater waterproofing allows operation up to unconstrained depths.

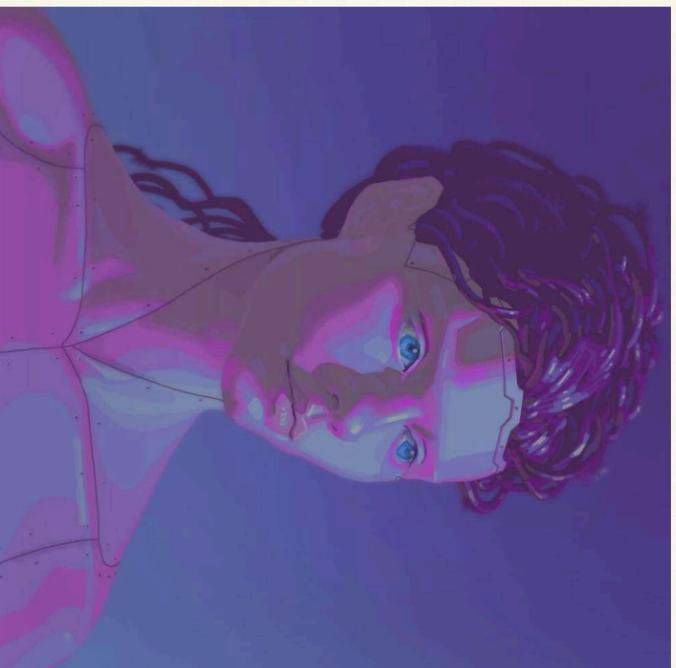
**Bionetic Augmentations** have been included as a corollary to cybernetic augmentations in organic creatures. Generally, they're not typically superior to electromechanical systems, but they do appeal to some synths. This interest may be purely philosophical, or it may be somewhat practical. Skin and nervous systems allow synths to experience pressure, temperature, and touch more similarly to organic creatures than electromechanical sensors reading the same environmental conditions allow. For synths invested in being able to relate to fundamental human physical sensations, or learning to cook well, these mods are more than just a philosophical exercise.

**Vasculatory System:** A fundamental requirement to maintain any cell-based bionic mod is a basic system for cycling synthetic blood through a diffusional membrane to provide dissolved oxygen, water, glucose, proteins, fats, and signaling molecules.

**Peripheral nervous system:** A peripheral nervous system allows synths to more natively replicate human sensory stimulation processing. Cultures of nerve cell networks receive input from sensors and relay a downstream output to the positronic brain.

**Epidermis I:** Skin cells (often on hands or a face) receive a variety of sensations that are relayed to the peripheral nervous system.

**Epidermis II:** Advanced epidermal coverings allow living skin to cover the entirety of an android's exterior surface.



## Tools and Equipment

Characters will often be asked at the start of an adventure or day what they're wearing and what they're carrying. Below are common items they might possess. If a player wishes to have any of these on them, the GM should ask them to place a card for each item on their Actions & Items page and describe how they're carrying the items in their carry.

The tools and equipment available are extremely open ended. GMs are encouraged to introduce whatever tools they think fit the world to players, and players are encouraged to propose any tool that they think makes sense to the GM. How these tools behave and what skill checks they require (if any) is left to the GM's discretion. The list below is meant to inspire players by describing some of the tools available and what certain common tools might look like.

### Common Items

A **Cyberdeck** is a flexible, customized personal computer. They often consist of a unit the size of a small deck of playing cards containing a battery and computer networked wirelessly to contact lenses or glasses and other wearable peripherals. More information is available on the next page under Personal Electronics.

An **Aquafask** is a bottle used to stay hydrated. Drinking from it can restore 1 HP per day.

**Medical putty** (sometimes called medputty or medclay) is a miraculous multi-factor healing composite often used for emergency medicine. When applied to grievous wounds it can arrest bleeding, reduce inflammation, mask pain, and assist tissue in regenerating. Details can be found in [Healing](#).

**Restraints** are used to temporarily restrain a person's ability to attack or flee. The most common form of restraint is a metamaterial tube 30 cm long and 1 cm across. It has the flexibility of silicone or putty, but when wrapped around wrists or objects and then activated, it binds to itself, doubles in volume, and changes its hardness to that of medium-hard rubber. These restraints can be removed with the correct electronic signal or with a sharp knife.

Like any tool for subduing a person, carrying restraints can be viewed as a threatening act. But like non-lethal weapons, their possession and use by protectors is viewed through the lens of how much trust any given character has for the protectors in their community. Players are advised to have restraints if they are carrying a weapon, so that they can end fights while applying the least amount of violence.

**Power Upgrade:** High quality power delivery systems and heat management supply high-torque motors with the ability to deliver substantial force. Increases Strength by 1.

**Archival Efficiency:** Configuration settings to the positronic brain allow the synth to improve retention, organization, and utilization of complex information. Increases Knowledge by 1.

**Subject Matter Expert:** Configuration and training enable the synth to increase their ability to apply an understanding of select topics. Provides a 3 point increase to one subject-matter skill.

**Agility Upgrade:** Upgrades to accelerometers, proprioception, environmental analysis and their integration increases the synth's Dexterity by 1. This change applies to the calculation of Speed (meaning Speed goes up by 2).

**Cognition Upgrade:** Improved heat management allows the synth to run its natural deductive and inductive processes more quickly and efficiently, increasing its general-purpose Intelligence by 1.

**Empathy Upgrade:** Training to improve understanding and natural processing of one's ability conceptualize the experience of others as one's own allows the synth to increase their Empathy skill by 2 points.

**Hammer Fist:** A mechanism flips plates that surround the wrist and forearm over an android's fist, and inflates a collar with coolant inside the panel to protect the delicate hand mechanisms and provide mass. This provides a synth with the benefits of the "Trained Strike" attack.

**Parallel Processing:** This added microcircuit arrangement allows a synth to parallelize tasks in order to apply the benefits of a second skill more quickly. As with the cybernetic version, this lets the user add half of a second skill (rounded up) to their total Ability Score.

**Reflex Boost:** Local mapping systems and kinematic modeling allow the synth to move an additional space of movement when using the Move action during combat.

**Precision Dodge:** Local mapping systems and kinematic modeling allow the synth to overload motors in order to dodge an attack in combat once between full rest and repair periods.

**Repair Abilities:** Redundant Systems, Thanks iFixit, Standardized Parts, and Right to Repair allow the synth to repair themselves or other machines. If repairing themselves, this can be explained as running in a temporary backup configuration that allows them to behave as if undamaged with the assumption that they'll need to fully repair the system later. Or it can be explained as a genuine repair, in which a damaged component is fixed or replaced.

**Advanced Interface Layer:** These specialized microprocessing systems operate in machines brains just as they do in organic brains under the Cybernetic Augmentation description. They allow for the user to periodically apply a temporary performance boost to a task-specific check between daily backup and repair cycles. The most common application is to engineering workarounds (i.e. hacking), but players can suggest similar alternative uses.

## Personal electronics

Characters have wide access to personal electronic communication systems like cell phones and laptops. In-world these may be referred to as cyberdecks, terminals, or personal computers. Because Fully Automated leans towards realism, these devices are small, light-weight, durable, and unobtrusive, but they are still physical objects. It is reasonable to assume that a character can dive into water without concern for their electronics, however it is not reasonable for a player who is completely naked to assume that they can establish a real-time two-way audio call with a thought (without at least some explanation). The basic constraints of physics on optical sensors, antennae, and interfaces still require these devices to occupy physical space to work.

Players and GMs should discuss what kind of use cases the players have in mind and what form factors allow this. Below are a few common personal devices.

**Heads-up-display glasses and contact lenses** - These devices provide useful information into the user's visual field. They are not able to obscure the world or replace the full range of brightness or darkness of the world as XR goggles do, but they provide hands-free textual input and simple graphics without the need to divert attention to a screen.

**Independent extended-Reality (XR) goggles** - XR goggles provide an immersive overlay or substitution to the information entering the user's eyes. Independent systems are worn as glasses or visors.

**Base-dependent XR goggles** - Base-dependent XR goggles operate similarly to independent XR goggles, but use lasers and outside-in tracking to improve the quality of the experience at the expense of portability.

**Bone-conduction speakers** - Bone conduction speakers are audio speakers that transmit vibration through contact with the skull instead of by sending vibrations through air into the ear drum. They offer lower fidelity, but allow users to hear audio without obstructing their ability to use their ears to hear the world around them.

**Olfactory Reporter** - An olfactory reporter (or "sniffer") stimulates olfactory receptors in the nose to simulate smells in the same way headphones simulate sound. The reporter is typically contained in the bridge or nose-pads of a pair of glasses, and broadcasts a shortwave radio signal that triggers conformational changes in olfactory receiver molecules. These olfactory receivers are chemicals with a neutral smell that adhere to olfactory nerves in the nasal cavity for several hours at a time. Most people who use olfactory reporters integrate olfactory receivers into their toothpaste or a food they consume as part of their daily routine. Olfactory receivers detach over the course of a day or can be removed immediately with smelling salts.

For dogs and other parhuman animals that use smell as a primary sense, sniffers are to them what heads-up display contact lenses are to many humans.

### Skill Upgrades

Skill upgrades are meant to allow players to spend their experience points increasing their Skill points to represent improvement at skilled tasks or acquire new Combat Proficiencies.

The skill point upgrades are intended to apply only to skills in which a character has 4 points or fewer. This limitation is intended mechanistically to avoid guaranteed success in some narrow area and narratively to encourage players to broaden their skill sets. As with any rule, a table can choose to be flexible.

### Combat Proficiencies

Two add new Combat Proficiencies, add a point to a character's Combat skill and then re-select Combat Proficiencies. The GM will have to sign off.

#### An alternative approach to Skills and growth

One recommended alternative rule set is to have players start during character creation with three skills of 6 points instead of one skill of 8, one of 7, and one of 6. Then during play, allow skill upgrades of any skill up to 8 points. This creates a very fulfilling way to start new players as more realistically average in their skills and to organically evolve into legendary heroes over the course of play.

### Synth Augmentations

Synth augmentations are easier to do compared to augmentations to organic creatures.

Organic augmentations are an application of intelligent engineering to a system not originally designed by that intelligence. Conversely, embodied synths were designed intelligently by the same thinking used to design upgrades. Because of this natural upgradability, increases to base Attributes (Strength, Dexterity, etc.) can be achieved with one augmentation instead of two for organics.

The process is similar: a creature designed for basic functioning may wish to increase that functioning or personalize its physical form. Below are a collection of recommended possibilities and the explanation for their operation. As with all the Abilities & Augmentations, these are meant as a starting point from which players can invent their own.

Players and GMs should consider the presented option as an illustration that are mechanistically reasonable within the gameplay, on-theme, and narratively explainable.

**Ruggedization:** High-durability structural components and shock-absorbing materials increase Endurance by 1. This is a prerequisite for upgrading to an armored chassis, which provides 1 point of armor (with accompanying -1 disadvantage to Charisma).

**Subvocalizer** - A subvocalizer is a piezoelectric sensor that gently contacts the soft tissue

of the neck and interprets muscle movement to reconstruct speech which is spoken without expelling air. These may be integrated into jewelry, clothes, or a comfortable, personalized comm collar. By picking up speech that is spoken without expelling air or moving one's lips, a subvocalizer allows the user to silently issue voice commands to their electronics or hold a conversation without visibly speaking.

**Touchport** - A touchport is a thin mechanical pad adhered to the skin that transmits gentle touch or electrical pulse to the nerves of the skin. Through training and chemical assistance, a users' brain can be trained to interpret signals in the touchport as other signals. This is the most common way of innervating prosthetics to restore a users' sense of touch, but it can also be used to provide things like a quick-reflex sense that warns of fast-coming danger based on cameras that watch a users' blind spot, or magnetoperception that allows a user to sense compass directions and the presence of magnetic fields.

**Nerveport** - A nerveport is similar to a touchport, but integrated into the body. It may be subdermally implanted within skin or implanted directly within the cortex of the brain.

**Floatie** - A floatie is a subsonic acoustic resonator that manipulates the fluid within the cochlear labyrinth to simulate the effects of acceleration. Put simply, it spoofs input to the labyrinth of the ear in the same way that screens spoof visual input to the eyes and speakers spoof auditory input to the ears.

**Barker** - A barker is a communication aid for dogs or other non-verbal animals. A barker provides context-sensitive buttons that a non-verbal animal can press to formulate messages that the barker will recite aloud. These can be stationary or mobile. In the case of mobile barkers, they are light-weight devices mounted on a telescoping pole that extends from a collar and projects buttons on the ground in front of an animal. The barker visually observes which buttons are pressed to provide the same functionality of a physical non-mobile barker.

**Portable Input devices** - Users can type or issue gesture commands to electronics using finger tracking gloves or hand and finger tracking cameras. Some such cameras might project an image into a users' palm or nearby table surfaces, though most are of limited use under full daylight.

### Specialized Items

Below is an assortment of examples of the kind of tools players may find useful in specific cases. There are certainly entire books filled with fantastic near and far-future gear which can be drawn from, so this guide hasn't gone to great lengths to try to invent more. Also, many weapons and tech items are described in other sections of this manual. Consider this a few examples for inspiration and context.

**Cerebral Heat Management:** Heat-conductive microfilaments are embedded into the cerebral cortex to direct heat more efficiently out of the brain and out to the skin. When combined with Enhanced Blood Oxygen Binding, this augmentation allows the brain to perform all its usual operations faster and more efficiently. It does not change a character's personality or way of thinking. It just allows for their existing intellect to function more readily. Safe application of this augment requires that the user be able to appropriately shed their excess heat. This is easily performed under normal conditions through sweating, or radiating heat if their head isn't insulated, but if a player were to think intently on a very hot day or while wearing a heavy hat, they may experience typical fever symptoms. Many recipients of this augment keep their hair short. There are a variety of styles including fully shaved bald or partially shaved styles (such as mohawks) that are popular among users of Cerebral Heat Management augmentations.

**Personal electronics as implants:** Characters may integrate implanted devices in their eyes or brain to interface with technology, but no engineer, doctor, or recipient is going to employ devices which have obvious vulnerabilities to remote hacking. If a player wants these kinds of augmentations, make sure they have common-sense failsafes like a physical shutoff switch or removable component that is externally accessible without tools.



Jacob Coffin

A **Tracker** is a small device that discreetly transmits its location or provides a radio signal that can be triangulated.

A **Magic wand** is a portable multi-purpose hacking tool. It may contain a sonic/vibration-based lock pick, dedicated IR code flipper and multichannel keypad spiker. Although not exactly illegal, carrying one raises eyebrows and raises trust issues. Still, many rapid responders swear by them. It may interface with a cyberdeck or other wearables or operate independently. Most are custom made, and many are uniquely decorated, often with distinctive high-vis casings and markings.

**-Geckine spray/Gecko-tech gloves** – Adhesive materials can be found manufactured into cloth or as a pair of spray bottles that build up layers of adhesive nano-statae-bristles. Be careful what you stick to what - neither the ceiling plaster nor your fingertip skin is strong enough to carry your full weight. But if used properly there's no end to clever applications (including daring strapless clothing fashions).

A **Universal Power Pack** is a device designed to be charged by and deliver power to almost anything. Modular, flexible connectors and smart electronics capable of adapting to a wide range of voltages, currents, and frequencies allows the device to tap into nearly any power source. IR, photovoltaic, and thermoelectric inputs can harvest power from the sun or even a campfire. The power pack can then be used to deliver power to sensitive microelectronics or defibrillate a heart. Beware of damage, though, as a damaged power pack can undergo a violent combusive discharge. Sizes vary by storage capacity.

An **External Tongue** is an engineered slime mold/bacterial symbiote that responds to trace amounts of various substances. An external tongue is stored in a portable incubator. When applied in a thin film to a surface it responds to the chemistry detected. A radio signal reflected off organic antennae allows the user to read the presence of broad classes of organic chemicals. Training the mold directly for 60 minutes on a specific target can dramatically increase its sensitivity to that target. The tongue is non-proliferative and harmless to the environment, though wiping it off after use is still good manners.

A **Field Surgery Unit** is a compact device the size of a small shoe box containing a set of micromanipulators and a magnified endoscope used for performing basic surgeries in any location.

A **Jumpframe** is a lightweight exosuit that includes retractable jump stilts and reach-extenders. Jumpframes allow the user to run at high speeds and leap incredible distances. Helmets and pads are advised.

There are already a lot of crazy **micromobility devices** in our world that many people don't think about. In addition to skateboards, longboards, rollerblades, and rollerskates, we've got monowheels, electric unicycles, heeles, skate sticks, free wheels and so on. Feel free to include these and make any of these powered/portable/deployable in ways that make sense within physics but aren't technologically possible yet.

**Speed Reading:** The Speed Reading augment is another implementation of the same form of embedded dedicated microprocessing as the Advanced Interface Layer. An organic microprocessor embedded into the visual cortex recognizes printed characters and character combinations in a 10th the time that the visual cortex normally does, allowing for the brain's to perform the reading process at an otherwise inhuman speed.

This is an example of how this kind of cybernetics can be used in a non-mechanistic ability. This augmentation does not have a rule-based mechanism of affecting success, but if a player wishes to read a book within a few minutes, this allows for them to do so narratively. A player might also ask to receive a bonus during a relevant role, such as if they're performing extensive reading during a research interstitial. Players and GMs are encouraged to apply bonuses in ways that make sense to reflect the benefits conferred by non-mechanistic abilities at the GM's discretion.

#### **Enhanced Blood Oxygen**

**Binding:** This genetic augmentation to the efficiency of hemoglobin in the blood is a required precursor to the Cerebral Heat Management augment. It also doubles breath-holding ability and allows a character to increase the distance of their Movement action during combat by 1 if their speed is 22 or greater.

This augmentation is identical to the same augment listed in both the respiration-based augments. Acquiring this augmentation in either section satisfies the requirements for higher-level augmentations in either section. They cannot be treated as unique augmentations to recursively gain the benefits of this augmentation twice.



**Personal flying machines** include a diverse assortment of light-weight rotor-powered flying devices. Some common forms include the flying disk (or flying saucer), with its counter-rotating blades inside a ducted fan and directional control surfaces underneath; the airboard, which packs many ducted electric propellers into a surfboard-like formfactor; or the classic jetpack, with its backpack and hand-mounted thrusters. All of these should be used in safe areas by properly trained operators using the standard safety devices.

**Fall-arresting devices** include grapnels, mini-chutes, body-mounted airbags, and fast-expanding impact foam.

**Flash-bags** were developed for biological sampling, and are used by emergency responders for imposing near-instant medical stasis. The powered bag uses perfused cryoprotectant fluids and the sublimation of dry ice and deep phase change material to cryogenically flash freeze samples. If used successfully, flash-bags can preserve a patient with no life signs in order to prevent brain death following grievous bodily injury until they can be placed on extreme life-support.

**Glowmidges** were first made in the 12hr aftermath of the '44 quake. Cultured populations are kept in small chilled boxes the size of a hand. Once warmed and awake, the hungry midges swarm, tracing CO2 in the air and glowing faintly. Aside from sipping on rescue workers, they rest and cluster on the rubble. The result is a small ring of glowing circles, highlighting gaps in the rubble above any survivors, as their breath slowly rises out to the night sky. Similar midges can be developed to visually trace most gasses.

**Holodome Projector** Beloved of cyberspace architects, educators and many synths, a holodome projector fills a darkened room with immersive holograms, sometimes keyed to realism, sometimes extravagantly stylised.

A **collapsible sword** or mema sword is one in which extremely precise machining and the creative use of materials capable of undergoing a slight controlled expansion and contraction allows for the construction of a sword that can collapse down to a fraction of its length. A common benchmark is for a sword with a 60 cm blade and 20 cm hilt collapsing down to 30 cm in length. When at its full size, the press of a button allows it to telescope down in size when pressed against a firm surface such as the ground, and when compacted the press of a button rapidly telescopes it out to its full length.

Like most advanced and dangerous weapons, the most commonly accepted practice of obtaining a mema sword is to earn it as a gift from a respected craftsman. For swordsmen, they typically must describe publicly or at least widely within a martial artist organization a circumstance in which they used a conventional sword responsibly and with appropriate restraint. They then explain why they believe they should have an extending sword, ideally by citing how having one would enable them to continue to demonstrate proper responsible use of a sword for constructive purposes. Sometimes they may be loaned one, and if they later show an ability to wield it with honor and restraint, they will be gifted one

## Cybernetic Augmentations

Cybernetics include a broad range of electro, optical, and mechanical devices, but the term is most commonly applied to machine parts that extend mental function rather than those that restore a common human ability. For more information on the cultural attitudes towards cybernetic enhancement see the subsection of [Major Lifestyle Augmentations](#) on Cyborgs.

**Brain-Machine Interface, Broadcast:** A cortical implant reads brain activity to act as an interface device that allows the user to issue mental commands. The specificity of commands varies by level. Level I acts like a macro-keyboard. Connected devices are keyed to a handful of set trigger thoughts that can run-preset commands. With training, these can be chained together to silently, mentally command a series of events like deploying a drone and instructing it to follow a target. Level II allows a user to send enough inputs to play a piano with a robotic hand. Level III allows the user to control multiple complex systems, such as a vehicle, avatar, or exosuit.

**Brain-Machine Interface, Receive:** An implant in one of the sensory cortices allows digital simulation of additional input. This can be used to provide a mental impression of seeing a light turn on or off; seeing a short line of text; hearing unique notification chimes; or feeling a pinprick if the input is meant to create an additional reflex sense. The volume and quality of the input increases with levels. The first level provides a level of input similar to an old-fashioned pager. The third level is like an additional computer monitor in your head.

**Random-Access Memory integration:** An implanted chip enables the beneficiary to recall the order of a deck of playing cards with ease, or hold a 25 digit number in mind. To operate effectively, however, players must practice good sleep hygiene.

**Storage Memory Expansion:** Provides an eidetic memory, increasing Knowledge by 1. Like RAM integration, this requires the user to be well rested to fully function.

**Parallel Processing:** Organic microcircuitry strengthens interconnecting regions of the prefrontal cortex, allowing for the integration of higher-level thinking between multiple applications of functional ability. Each level reduces the amount of time a character requires to perform skill combinations. Combining skills allows a player to add half of a second skill (rounding up) to their relevant Attribute and Skill when calculating their Ability Score.

**Advanced Interface Layer:** organic soft-circuitry based microchips can be designed to perform complex calculations and operations. When implanted in the brain these provide enhanced synthetic abilities within the organic cognition loop. The most popular implementation allows hackers to incorporate a variety of common routines and penetration tests into rapidly recallable action packages once per day.

This exhaustible skill is redundant with the mental hacking abilities, but more flexible in its use. Designwise, this is meant to reflect that similar abilities can be achieved through training and conventional learning if a character is averse to cybernetics, but cybernetic modification still provides a meaningful benefit. This concept - of using embedded dedicated organic microprocessors to augment a specific kind of problem solving or improve intellect within a narrow application - is included in part as a demonstration of how cybernetics can be used to justify other exhaustible Abilities that players may ask for.

by a master swordsmith. Grey market mema swords are obtainable, but subject to the same restrictions governing any grey market weapons.

These make an excellent upgrade item for sword-using characters. They perform in combat the same as a conventional sword, but in addition to being more concealable, the extending sword offers a +3 advantage to intimidation checks. If one wishes to acquire this as a player, communicate that as a goal to your GM.

A **conventional extending bo staff** consists of a telescoping housing that allows such a staff to extend from 45 cm to 1.5 m. Offers a +2 advantage on intimidation checks.

A **mema bo staff** is similar to a conventional extending bo staff, however instead of telescoping, the mema staff uses air pressure to rapidly inflate a flexible-to-rigid inflatable body before it converts back to rigid. This allows a full-length staff to compress down to around just 20 cm or less. Offers a +3 advantage on intimidation checks.

**Lugger ants** are a pack of biomimetic ant robots. When not in use it will cluster up around a user's shins or in a pouch. Spray an item with the pink 'collect this' spray, and the ant swarm will get under it and follow the user about. You can also send them off on a path using the mauve 'follow this' spray. Don't confuse them!

A **Harvester's pouch** is a bag designed to preserve fruit and vegetables when picking. The harvester's pouch is capable of taking out 'field heat' to keep things fresh, or even freezing/freeze-drying your bounty while you cycle home.

### Software Tools

Readers are encouraged to be expansive in their imagining of the kinds of digital assistive tools available through AR/XR. Video playback of a recent event, frequency isolation, live translation, voice identification and such should generally be considered widely available.

Readers are also encouraged to imagine ways these tools would be employed for accommodating disabilities and differences in physicality and neurotypes. Players and GMs are encouraged to imagine live captioning for the hearing impaired; identification tools for the face-blind; and countless other apps for mitigating dyslexia, dyscalculia, attention deficits, sensory sensitivities, and so on.

Any such tool should also be understood as a general-purpose asset for anyone who wants it, and not as a signifier of incapability or an exclusive tool limited to people who meet diagnostic criteria to demonstrate their need. All of these systems are meant to help people better understand the world around them. Within the world of Fully Automated, our concept of "able-bodied" and "disabled" is far less common than a holistic understanding that each of us throughout our lives experience a wide range in our ability to perform various functions. Most people don't consider sight impairment a disability if it's correctable with eyeglasses. In the same way, the universal availability of prosthetics and computer assistance with cognitive obstacles have made many conditions we consider "handicaps" today into unremarkable ways of experiencing the world.

**Telescopic vision** uses similar technologies as underwater vision to allow an individual to observe far away elements clearly or perceive small elements from across a room as though they are close. As with other vision mods, cosmetic changes are offered optionally.

**Enhanced smell:** A genetic modification that increases the density and sensitivity of olfactory receptors to allow a character to detect chemicals, identify people, and track them.

**Enhanced hearing:** A combination of genetic modification and minor surgery that increases the size of the ear canal and replaces several components of the ear with synthetic materials that increase the sensitivity of the ear canal and brain. The ears may also be enlarged and their control strengthened to allow directional hearing. People with enhanced hearing may have no external visible signs, but this modification is typically coupled with pointed ears.

**Nictitating Membranes:** A [nictitating membrane](#) is a transparent third eyelid that can cover an eye while still allowing it to see. Nictitating membrane mods allow the recipient benefits afforded by sunglasses and other eye protection. These membranes are often impregnated with adjustable pigments that allow their opacity to be consciously modulated. Their most common function is as simple UV-protective sunglasses, however they can also provide some protection from debris, saltwater, chemical irritants, low pressures, or a specified wavelength tailored for routine potential exposure to laser emissions.

### **Mental Abilities**

- Reason & Learning Abilities
- Assistance Abilities
- Hacking Abilities
- Persuasion Abilities
- Skill & Ability-related Abilities

These mental abilities may be based on conventional acumen alone or the augmentation of drugs. It can be assumed that the characters are able through their experience and training to exert themselves once a day (or more frequently if they acquire multiple acquisitions of an ability) when rested to perform at an exceptional level, or that they can achieve these effects using pharmacological assistance. In gameplay, we've sometimes had players describe taking "future adderall", in recognition that this kind of drug-assisted performance boost already exists.

In many games, the use of performance enhancing drugs is moralized through a presumed negative consequence or social stigma. Players are encouraged not to feel obligated to maintain this. They can certainly include harmful effects where narratively appropriate, but are under no obligations to reinforce antiquated assumptions that unnatural chemical effects are implicitly different from any natural, behavioral, or dietary choice for adjusting the body's functioning.



Jacob Coffin