Operator

Operators are sentient military androids created and fielded by the New Dusk Conclave. They are primarily designed to 'operate' starships, fighters, mecha, and other military hardware.

Essentially a human-shaped, intelligent Power Armor, Operators are capable of acting in a variety of roles. They can be found commanding ships, leading fighter/mecha wings, and as part of elite ops groups. As with all true AIs within the NDC, they hold the same rights as any other citizen.

First introduced in YE 42.

Overview

Operators are human androids designed to support the New Dusk Conclave's military efforts. They are particularly well suited for taking direct control of fighters, mechas, and ships of all sizes. While their conscious mind thinks and feels like a normal human, their subconscious handles tasks like a computer, making them excellent at multi-tasking and greatly increasing their reaction time.

Their bodies are designed to be strong and robust, with a variety of useful features to improve their effectiveness and survival rates.

Noteworthy capabilities:

- Excellent multi-tasking and sensory processing capabilities
- In conjunction with other intelligent ship systems, Operators can drastically reduce the amount of crew required for any given vessel
- Able to lift up to 600 kilos and jump up to 20 meters
- Can use their built-in Orchestra system to manipulate nearby objects
- Can use their built-in Crescendo system to provide power to nearby objects
- Can use their built-in Electronic Camouflage System to conceal themselves

While an Operator's human shape allows them to wear Power Armor, they are no more strong or capable than an organic while doing so. Additionally, unless specifically designed for an Operator, the defensive measures in most Power Armors negate the android's Orchestra, Crescendo, and ECS systems.

Nomenclature Information

- Designer: Department Of Advanced Research And Development (D.O.A.R.A.D.), Noval DSS
- Manufacturer: New Dusk Conclave (with components from Black Wing Enterprises, Noval Heavy Industries, and Galactic Horizon)
- Nomenclature: NDC-AI-2
- Name: Operator
- Type: Synthetic Military Personnel

Appearance

Operators typically look like humans with a pair of protrusions on their forehead.
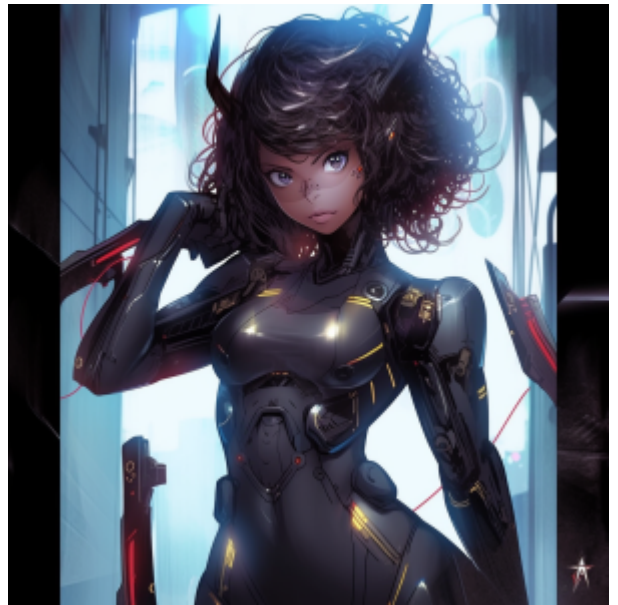
- Build: Typically lean and muscular, more gymnast than body builder
- Height: Varies between 5'2" and 6'4"
- Hair color: Any metallic (silver, gold, copper, platinum, etc), with a preference towards silver. Normal human hair colors are also available, though less common
- Eye color: Typically red, orange, or pink. Normal human colors are available, but less common. Some Operators have black sclera, but this is rare
- Skin color: Any normal human color with a preference towards gray shades that look something like a vintage photograph or have a doll-like complexion
- Field sensors: A pair of small sensors on either side of the Operator's forehead. These look like either a set of short, pointed 'horns' or a set of retractable, insect-like antennae

During their Initialization, Operators begin to form a mental image of themselves which is later applied to their actual physical look. As such, an Operator's appearance is very much a reflection of how they *think* they should look. Once their mental image has been set, they can make only minor changes to it. New components, parts replacements, etc, adapt to fit this image.

The Operator's build has little impact on their actual physical capabilities. An Operator that looks heavily muscled has the same amount of actual 'muscle' material as one who does not. Most physical differences are purely cosmetic in nature.

When performing various network-related tasks, a glowing ring around their iris appears.

Variants

Occasionally, an Operator's mental image may include details that don't fit the human standard. These differences offer no additional capabilities over the basic look, but may be functional within reason. All Operators, variants included, look predominantly human with small horns.

The following are variants common enough to have been given their own sub-designations.

Operator-C

The Caerbannog variant, or Operator-C, adds a set of prominent, rabbit-like ears and a long, bushy tail to the default human look. Sharper teeth, a short fur-like skin covering, and other predatory features are sometimes selected. The ears and tail are functional, but offer little (if any) functional advantages over the default Operator body. Operator-C's tend to be on the taller side, with an average height of 6'2" (not including their ears).

Operator-D

The Drake variant, or Operator-D, slightly lengthens the forehead horns, adds a long, reptilian tail, and coats the forearms and lower legs in a scale-like covering. Additional scale details may be present elsewhere on the body. Some Operators choose to add a set of small, reptilian wings to the lower back to 'complete the look'. Scale color is typically the same metallic shade as the Operator's hair.

As with the Operator-C, these additions are functional, but don't noticeably improve the Operator's capabilities.

Initialization

Before an Operator's body is created, its NDC-AI-2-A Mental Matrix is setup through a process called Initialization.

First, all of the basic required knowledge and skills to operate within the military are preloaded. Additional knowledge and skills are included for their intended role, with a specific focus on ship system management.

Second, a semi-random selection of personality traits are selected that allows each Operator be unique, but still highly motivated towards their work. A starter set of physical traits, such as height, hair/eye/skin color, and general appearance are also generated at this time. After this point, their mind is too unique to accept direct knowledge and skill downloads.

Next, the new Operator is dropped into a shared virtual space where they can meet other AIs and budding clone minds, continue to define themselves, and refine a mental image of themselves that they are satisfied with. They will train and socialize with these others until their eventual assignment.

After their entry into VR, they continue through the same Synth Creation Process as any other manufactured citizen in the NDC. They will learn new skills and make their pre-loaded skills their own. Near the end of the process, they will be loaded into a generic Operator body that has been customized, within reason, to fit their mental image.

Last, the new Operator will be shipped to their intended destination.

Personality

Most Operators are deeply task-focused and may give off an air of superiority, haughtiness, or curt military professionalism. They naturally organize themselves by function and rely heavily on Contribution to decide how to interact with others, which means that those who can contribute *less* are looked down upon. Some Operators take this a step further and view all non-synthetic 'Naturals' as less-than, while others seem 'normal' by human standards.

As with humans, however, Operators run the full range of personality types and interests. While they have their norms, there are plenty who do not follow those norms.

All are adamant professionals and take their jobs very seriously - sometimes too seriously.

Naming

Operator first names are typically common, one or two syllable western names, like those of the clones that much of their skills are derived from - Mark, Jane, Alex, and Jay. Simple, punchy names that have more in common with nicknames or pilot call signs are also prevalent. (A fun, potentially NSFW in text only, resource for call signs is this page.)

Operators are allowed to choose their own names when they are mentally mature enough to do so. Until then, they are called by their Cohort and a simple identification number. Often, they will choose a name that others have used for them - though this is not always the case. In the case that multiple Operators wish to choose the same name, they will typically add a sequential number to their first name to make it different, such as "Jacob-2".

As AIs are not born into families, they will typically use their Cohort number. Cohort numbers are somewhat randomly generated and tend to be three or four digits long. Some will, instead, choose to take the name of their Cadre as their last name.

Some sample names:

- Jane 2222
- Goose 505
- Magnet Warrior
- Dice-2 352

Core Systems

The Operator is a joint effort between Black Wing Enterprises, Noval Heavy Industries, and Galactic Horizon, drawing from their existing Power Armor, AI, nanite, and field manipulation technology.

Many of the android's core systems are distributed throughout the body for efficiency and redundancy.

Power

The Operator's power comes from two primary sources. The first is a compact aether tap contained in a dense Madite-C shell. During normal use, the Madite-C safely shields the aether tap from outside detection. It typically operates in a trickle fashion, providing just enough power to maintain normal body activity and top off any systems that might require it.

The second is a distributed power grid comprised of numerous small fusion batteries. This system is modeled after the Phantasm's battery setup and provides 'burst' power for more strenuous activities and the Operator's more greedy sub-systems.

In the event that this is insufficient, the aether tap can provide additional power. This greatly reduces the Madite-C's ability to mask the aether signature and can even lead to overheating under extended use.

The Operator is expected to have a 10 year lifespan before the fusion batteries require replacing. Operators who frequently find themselves pushing their bodies to the limit may cut this time period down.

Locomotion

Another mirror to the human body, the Operator is moved by a weave of synthetic muscle fibers drawn from the NDC's power armor suits, such as the BW-PAK Phantasm Armor Kit and Revenant Power Armor Mk II. Arranged and connected in an anatomically similar fashion to a human body, they provide excellent range of movement and fine control.

Much like the armors the synthetic muscles are derived from, they grant the Operator enhanced physical abilities. Operators can run swiftly, jump up to 20 meters at a time, and lift up to 600 kilos. In combat, the muscles shield against the shock of impacts and deliver exceptional force to any melee strike.

Primary Systems

An advanced, multi-function android, the Operator's body has a number of major and minor systems working together to allow it to function in its task.

Computers and Electronics

The core of the Operator is the Mental Matrix, a powerful computing system that handles all of the android's thought processes, sub-processes, and system management. It is BW-E-2 Anima System compatible and gives the Operator all the same functionalities as a G1-N2 "Geist" Advanced Interfacing Implant 2.0.

The use of semi-intelligent sub-processes allows the Operator to exert incredible levels of control over a system. Whatever it is in charge of becomes an extension, or temporary replacement, for its body. Many of the ship's minor and major functions act in an autonomic fashion, like breathing or blinking, and require the Operator's attention only when something happens outside of expected behavior. Advanced weapons targeting, fighter deployment, shield management, and so forth are likewise simply natural extensions of the Operator's normal capabilities.

Sensors

The majority of the Operator's senses are derived from or comprised of military grade hardware. Their electromagnetic sensitive 'horns' are used to further refine the detection and management of local energy fields.

An Operator has access to:

- Optical 200x Zoom, Thermal, Infrared, and Low-light Vision (from a set of custom MOSS, located in either eye)
- Visualization of local Magnetic Fields
- Tachyon Particle Tracking, up to 300,000 km
- Ultra Wide Band Radar, up to 1,500km

Normal human senses, including taste, touch, pain, and so forth, have been faithfully recreated. Unless otherwise noted, they function no differently than their organic counterparts. Operators tend to experience their 'extra' senses in ways that are unique to them and their experiences. Some prefer hard, military-like readouts while others prefer to 'feel' the data.

Operators have a limited ability to manage their senses to be more or less sensitive. They cannot disable them entirely and their senses automatically trend back towards 'normal' over time.

General Anatomy

The Operator body is a sophisticated imitation of the human form. While they have some external features that are clearly not natural, they are generally indistinguishable from a human unless under close inspection. They show the usual signs of life, including breathing, blinking, and other minute body movements. Their skin and hair looks and feels like the real thing. They respond to external stimuli in the expected ways. They even possess whatever reproductive elements are appropriate for the gender/s of their choice, though Operators have no true reproductive system.

The majority of this imitation stems from the influence of the original EVE AIs on the Operator development process. Up to this point, a number of EVEs have chosen to inhabit organic bodies so that they can experience a more human life. Given the opportunity to guide the new android project and the NDC's stance that AIs are to be treated as full citizens, the EVEs made a strong case that the new androids should have the full human experience.

Major body parts, such as the head, arms, and legs, are attached via magnetic hardpoint and various safety catches. In the event that a body part takes more damage that it can sustain, if it would cause catastrophic damage to the rest of the body, or by a triple-confirmed mental release command, it can be cleanly released from the body. Doing so causes the magnetic hardpoint to release its hold and the safety catches release their hold on the synthetic muscle tissue and the body part's synthetic skin to cleanly separate from the rest of body.

Reattaching a part, whether it be new or replacement, is as simple as holding the part up to the appropriate area and forming a secure, wireless connection between the Operator's body and its new component. Once all safety checks have been completed, the new part can simply be held in place and the Operator's body does the rest in short order.

A general layout of the Operator's internal systems follows.

Head

The Operator's head contains the following systems:

- Mental Matrix: The Operator's electronic brain. Supported by distributed computing systems throughout the rest of the Operator's body.
- MOSS: One unit per eye provides the Operator with excellent visual sensory information
- Organic Analog Senses: Taste, smell, and so on have been faithfully reproduced
- All-Range Sensor Suite: Tachyon Detection, UWB Radar, and other components of the Operator's sensor suite are primarily located within the head

Torso

The Operator's torso contains the follow systems:

- Honeycomb Fabricators, 2: Located between the lungs and 'scapula' on either side of the upper

chest cavity. Replenishes the Operator's nanite stores from consumed materials

- Aether Tap: Located in the same general areas as the human heart, the Aether Tap satisfies the majority of the Operator's moment-to-moment power needs
- Molecular Decomposer: Located in the gut area, this chamber leverages nanites within the Operator's body to break apart consumed foods and beverages into useful components. Excess or unnecessary material is queued up for later disposal.
- Respiratory Heat Management: The Operator's primary method of regulating their temperature is via gas exchange. While lung-like in shape, it functions more like a forced-air cooling system than a traditional respiratory system.
- Orchestra/Crescendo: These two systems are sandwiched together in front of the Aether Tap in the upper chest cavity, just behind the 'sternum'.
- Shield System: The Operator's conformal shield system is located on either side of the abdomen.

Musculature

An Operator's muscles are a weave of synthetic muscle fibers, commonly found in NDC Power Armors. As the Operator does not need to save room for an occupant, they are considerably more dense in the Operator's body.

Bundles of these fibers are attached to the Operator's artificial skeleton with strong magnets and locking catches. This allows for easy repair of muscle clusters or entire limbs - an existing limb can be easily detached and replaced without the need for any tools under most circumstances.

Skeleton

Comprised primarily of Usonium with a Madite-C coating, the Operator's 'bones' are highly resilient to damage and capable of a limited degree of self-repair.

Power and data transmission is conducted within each 'bone' and at contact points from bone-to-bone. The Madite-C coating masks the majority of this activity and protects it from outside influence.

Skin

Nanocellulose, developed as a joint effort between Noval and Galactic Horizon, is a nanite-saturated compound that looks and feels like human flesh. Color, tone, and various imperfections are all replicated in high fidelity to avoid any uncanny valley issues. The skin provides a reasonably greater degree of protection compared to normal human skin, including the ability to reseal itself after being cut or punctured.

To assist in maintenance or repairs, the skin can open itself as if by a very clean incision and pull away from the desired system or body part. This causes no pain to be registered, but has been described as 'tingly', 'weird', 'ticklish', or 'outright uncomfortable' by various Operators. When service is complete, the skin will reseal itself.

In addition to basic repair functions, the nanites in the skin draw features from both the Electronic Camouflage System and Sensory Smart Coating. This allows an Operator to conceal themselves to an extent.

Hair is created from a similar material and can slowly 'repair' itself over time to grow in length.

Damage Capacity

See Damage Rating (Version 3) for an explanation of the damage system.

- "Operator" Synthetic Military Personnel: Tier 2, Medium Personnel

Auxiliary Functions

Operators have a variety of supplemental systems designed to make them more effective or improve their life expectancy in dangerous situations.

Orchestra

All Operators are equipped with a built-in Orchestra System that allows them to manipulate nearby objects without directly taking hold of them. This manipulation is limited to a simple hold, release, and move interaction, but allows for a significant amount of flexibility.

Operators working on repairs can hold their tools in the air near their hands or pull on distant levers. An Operator that finds themselves in Zero-G can grab onto a nearby surface and pull themselves to it.

Any 'held' object transfers its weight and force to the Operator's center of mass. This acts as a limiting factor on how much the Operator itself can be used to carry. Similarly, each additional object requires a small amount of computational power to track and manage that can add up.

The nominal range of the Operator's Orchestra System is 4 meters, after which it becomes increasingly harder to grasp an object.

Crescendo

Operators are able to use this system to provide power to nearby objects without making direct contact. This is typically used to maintain power to small nearby devices, such as a personal shield system, but can also be used to provide backup power in the event of an emergency.

The nominal range of the Operator's Crescendo System is 4 meters, after which power efficiency and transfer begins to drop off steeply.

Geist Suite

While Operators are not equipped with an actual Geist unit, they have all of the required software and hardware to emulate its features. The Operator's built-in HUD, network connectivity, and remote machine controls are all based on the Geist's system.

Electronic Camouflage System

A hybrid of the Electronic Camouflage System and Sensory Smart Coating is used to give the Operator a limited ability to camouflage themselves. Nanites are released through the skin into the air near the Operator and have just enough range to cover up most clothing and small held objects.

The smaller radius of the Operator's ECS means that it is less effective at concealing swift movements or large objects than the standard system.

Honeycomb Fabricators

Operators use two Honeycomb Fabricators, located in the upper chest, to replenish their nanite stores as needed. These nanites are primarily tasked with maintenance, repair, and camouflage.

Each Honeycomb Fabricator contains its own internal power supply. In emergencies, this power can also be used for the rest of the body for a limited time.

Heat Management

The majority of the Operator's heat management is performed during their simulated respiration process. Excess heat is dumped into a series of radiators in their 'lungs' with each breath taken. During strenuous activity, exhaled air can become quite hot.

A lack of atmosphere can cause heat to slowly build up within the Operator's body. In this case, heat will be channeled into nanites, which are then released through the Operator's skin as a sort of dusty sweat.

Matter Decomposition

Operators are able to eat and drink in small amounts. These 'materials' are broken down by nanites within the body and stored for use in creating additional nanites.

Once per week, Operators should drink a sort of metal-rich slushy to ensure they have the right balance of fabrication materials. Failure to do so over a prolonged period of time will degrade the quality of their body's nanites until they are no longer functional.

Unnecessary materials are expelled in the 'usual' organic fashion.

Conformal Shield

An electromagnetic conformal shield unit provides additional protection for an Operator when they find themselves in dangerous situations. While it offers no resistance to kinetic forces, it appreciably dampens the attacks of energy weapons. The shield's field sits just a few inches away from the Operator's skin and clothing.

Shields of various types have been known to be hazardous to nearby organic life and interfere with long-range sensor readings. Operators are recommended to use the shield only in times when it is necessary.

Customization

While Operators are androids, they are highly proprietary in nature and not designed to work with off-the-shelf components. 'Aftermarket' modifications are strictly against military protocol.

Minor cosmetic alterations, such as tattoos or hair dye, follow standard guidelines.

Decommissioning

In the event that an Operator is discharged or wishes to permanently leave military service, their military-specific hardware and capabilities are disabled. They retain much of their strength and overall resiliency, but are otherwise similar to a top-end civilian android. This is a simple parameter switch in the NDC's secure AI registry and cannot by bypassed by the Operator.

Corporate/Military Security

While a variety of corporations collaborated on the design and construction of the Operator android, the Mental Matrix and the software running on it are a closely held secret within the New Dusk Conclave's development centers. As such, while many of the Operator's components are easily acquired via military contracts, the ability to produce a true Operator is available only to the NDC.

OOC Notes

Whisper created this article on 2020/09/25 09:55.

- Approval Thread

Tech and References

The majority of the article pulls from the BW-PAK Phantasm Armor Kit and, to a lesser extent, the

[Revenant Power Armor Mk II](). Existing androids, such as the [Mimic Computer]() were lightly referenced as a bar for what is/isn't reasonable. The intention is that Operators are like a less durable Phantasm with a human appearance and has some extra tricks built into all that free space - because that's pretty much what they are.

Roleplay Considerations

Operators can be approached in a variety of ways when using one as a character. The 'default' personality of an Operator always has some degree of superiority over their non-manufactured colleagues. They believe themselves to be stronger, smarter, and overall better at doing their jobs, and how well you do your job is the thing that they care the most about. Their actual personality might be ostentatious, flat, energetic, or something else entirely.

Despite their android nature, Operators are intended to act in ways similar to how a normal human would act. Their conscious mind is basically the same as our own. The key difference is how they interact with their subconscious. Maybe your Operator can see a list of sub-processes on their HUD. Maybe they periodically hold internal councils with alternate versions of themselves. In any case, the ability to manage these internal thoughts is a big part of how Operators do their thing when they're in command of a ship and the main advantage that they have over someone using a Geist.

That said, they *are* still androids. They don't have to breathe or eat. They can pop off body parts and reattach them. Parts of their body can open up on command. Go on space walks without suits and use technology to bring your drink over from a nearby table. If you want to play your character with a more robotic personality and behavior set, you certainly can! If you want to focus more on being human-like and largely ignore the robotic parts of the character, you can do that, too - although I'd still recommend leaning into the basic personality traits mentioned before.

While Operators are physically powerful, they aren't the natural fighters that Nekos or ID-SOLs are. They are strong and fast, but their strengths lie in using their built-in tricks, like the Operator, Crescendo, and ECS, to win their fights. Or, better yet, don't get in that type of fight in the first place - you're much better off when you're in command of something bigger and scarier than your android body is.

Another key difference is that Operators are meant to be considerably fewer in number compared to Nekos or ID-SOLs. Where Yamatai might feel comfortable throwing a thousand Nekos at a problem, the NDC might send 10 Operators. This doesn't mean that each Operator is worth a hundred Nekos - merely that they have to approach their problem solving in a different manner.

As Operators are manufactured, not born or grown, you have a decent amount of control over your character's appearance. Things to avoid are appearing too directly similar to the setting's other races or over-complicating your look. There is a lot that you can accomplish within the mildly expanded color options that will still let you find cool art online to match your character's appearance.

Remember that anything you add should be neutral in terms of power gained. If you were to add full-size wings, your character still couldn't fly and you'd be stepping on the Elysian aesthetic too much.

Operators as Pilots

When piloting a fighter, mecha, or some sort of armor, an Operator may be manning the controls or taking possession via a Geist or Anima system connection. The possession route is recommended, because now your Operator's body is the fighter/mecha/armor and you get to roleplay that. Suddenly, you're twenty meters tall! It should be fun. Interacting 'directly' with all of the craft's sensors, weapons, etc, is also something that should be fun to do. You can choose to task some of this out to various sub-processes or continue to manage it all directly.

One suggestion is to find ways to visualize all the data coming in so that you can represent it well in your writing. Operators have excellent reaction times, thanks to their computer-like ability to keep track of lots of stuff and make near-instant decisions on that stuff. Writing something like...

- ”... the projected trajectories of the incoming missiles filled her mind's eye. She spun up a sub-process to plot a course through the projections. Just as the missiles began to loom too close for comfort, the course appeared in her vision. The fighter's thrusters were pushed to maximum as she sent the craft screaming through the plotted course. Missiles streaked by what seemed like inches away from her cockpit, drawing close but never quite touching the delicate armor of her light fighter. ...“

... is much more interesting than

- ”... he flew headfirst into the missiles, dodging them as if by magic. ...“

Explaining the how and why of what you're doing is usually much more cool than hand-waving it. Ultimately, it's your character and your writing - so have fun with it your way.

Operators as Ship AIs

The primary purpose of Operators is to serve as a walking, talking ship AI. Rather than continue to staff their ships with hundreds or thousands of living beings, the NDC has instead chosen to staff their ships with a handful of Operators, various support drones, and some smaller number of living beings. In this way, the ship is an extension of the Operator's body - or, to look at it another way, they're the brain of the ship.

For you, this might mean that you're subordinate to the ship's captain. You might act as a pilot and comms officer simultaneously. Conversely, you might have the entire bridge to yourself and operate as part of a small fleet of ships, each with their own Operator captain.

Handling everything going on in the ship, including its maintenance, manufacturing, etc, is a good way to add color to your posts. Damage or maintenance issues might register as acute pains or aches. Repairs might tickle. The specific ways that the data is interpreted will vary from Operator to Operator.

You are the ship. Be one with the ship!

Inspirations

Operators pull from a lot of sources. Originally, they were intended to be Newtype parallels, but have since transformed into something more akin to the various anthropomorphized ships, tanks, guns, and fighters common in anime and anime-inspired video games. Their purpose - to be excellent fighter and ship pilots - has remained the same, however.

Arpeggio of Blue Steel is a particularly strong influence and a lot of fun.

species	
Species Category	robotic
Nanomachines	Perfect
Symbiotics	Immune
Pharmaceuticals	Immune