

Catherine Halsey

August 8, 2510

Can't concentrate today. Haven't been able to for weeks. New ideas, recent insurgent reports, the ubiquitous eye of ONI watching me... how can I NOT be distracted?

Setting up the new lab has consumed the last few months. I have doubts. I keep wondering whether this is the best course.

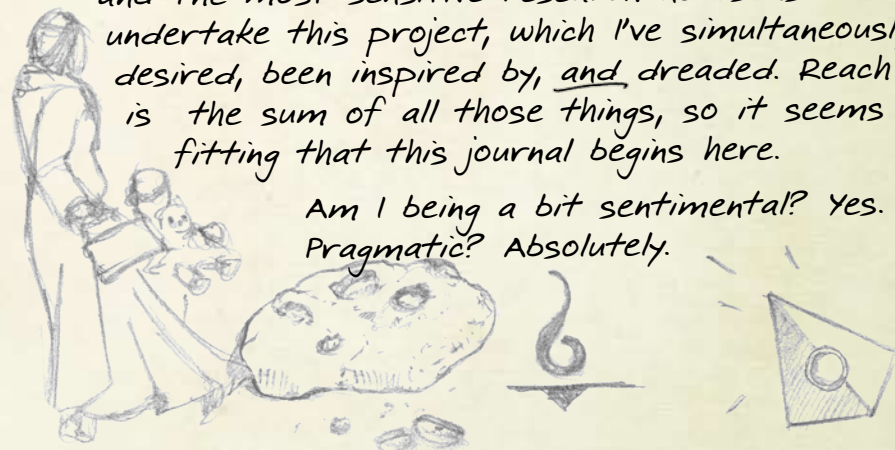
How did I become involved in this?

Carver's report on the colonies surely led me here; that scarcely begins to tell the story. (Will clarify my thoughts on this further when I get a chance to breathe!)

I found this journal in a quaint local shop (good cup of coffee as well) on my last trip from the main base. Writing does help... to get it all on paper... out of my head.

I need a place to record my personal thoughts and the most sensitive research notes as I undertake this project, which I've simultaneously desired, been inspired by, and dreaded. Reach is the sum of all those things, so it seems fitting that this journal begins here.

Am I being a bit sentimental? Yes.
Pragmatic? Absolutely.





yes, that's
a parka.
It's damned
cold in here.

Need a haircut.

Despite my artificial-intelligence-enhanced data recording and storage systems, I learned long ago that anything stored electronically can be retrieved electronically.

I have no illusions that some within this organization wouldn't hesitate to employ against me the very intrusion algorithms I helped devise if it suited their self-interests. Keep your friends close and your enemies even closer...

And I will.

And so I begin... to learn whether humanity can be saved from itself, and the role I will play in its uncertain destiny.

December 4, 2510

I sit in my new yet unstaffed laboratory... the racks of AI matrices and optical routers still sealed in their crates.

My doubts have returned... perhaps some reflection on my original motivations for coming here will help.

It started three years ago when I met the acclaimed Dr. Carver (still the darling of the CMA) at one of those academic social mixers where everyone is charming and trying to impress project benefactors. Even as a doe-eyed doctoral candidate, I detested these affairs, so when I heard Carver describing "the matrix mechanics of the socio- and politico-economic vectors of human expansion," I couldn't resist correcting him.

(His ideas were genius, his algorithm implementation obsolete.)



I outlined a corrective matrix calculation, revising the dimensional parameters in my head (he used 7 when he needed 16).

Carver — who had been coasting on the lecture circuit after his initial publication — didn't appreciate the truth, especially from a young upstart.

The vice admiral (then a captain), however, took note.

If I had known that Carver would commit suicide two years later, I may have been more charitable in my presentation. (Carver blamed himself for the very carnage he had predicted — a lesson for all scientists resides therein.)

Three weeks after that party my grant proposal for artificial intelligence control for N-dimensional matrices was green-lit by the UNSC... contingent on the successful testing of a model of their choosing.

Naturally, it was Carver's.



I knew that his flawed model would produce flawed results. To avoid having this reflect poorly on my technique, I ran my correct 16-dimensional variant as a control in addition to his 7-dimensional version.

Carver's model predicted a breakdown of social order in the Outer Colonies within twenty years unless strict governmental control was established, reinforced by an immediate and permanent military presence.

The resultant vector was correct, but not the magnitude.

I ran more than fourteen hundred simulations, varying every parameter, and in the best-case scenario the Outer Colonies would rebel... and rebel soon.

With FTL-capable transports, ANY colony could convert such vehicles into weapons of mass destruction.

Minimum effect was thirty years of war and five billion dead. The maximum effect was unbounded. Interminable war. Another Dark Age for humanity.

I took my results to the vice admiral.

But the UNSC already knew.

They had come to a similar conclusion (a slightly gratifying tidbit given that it had taken them three years of intensive research).

Then why make me do the same calculation?

The Office of Naval Intelligence had apparently had their eye on me for years and knew that the only way to convince me to join them was to get ME to convince me.

It worked. I joined.

How many lives must be spent to save all of humanity?

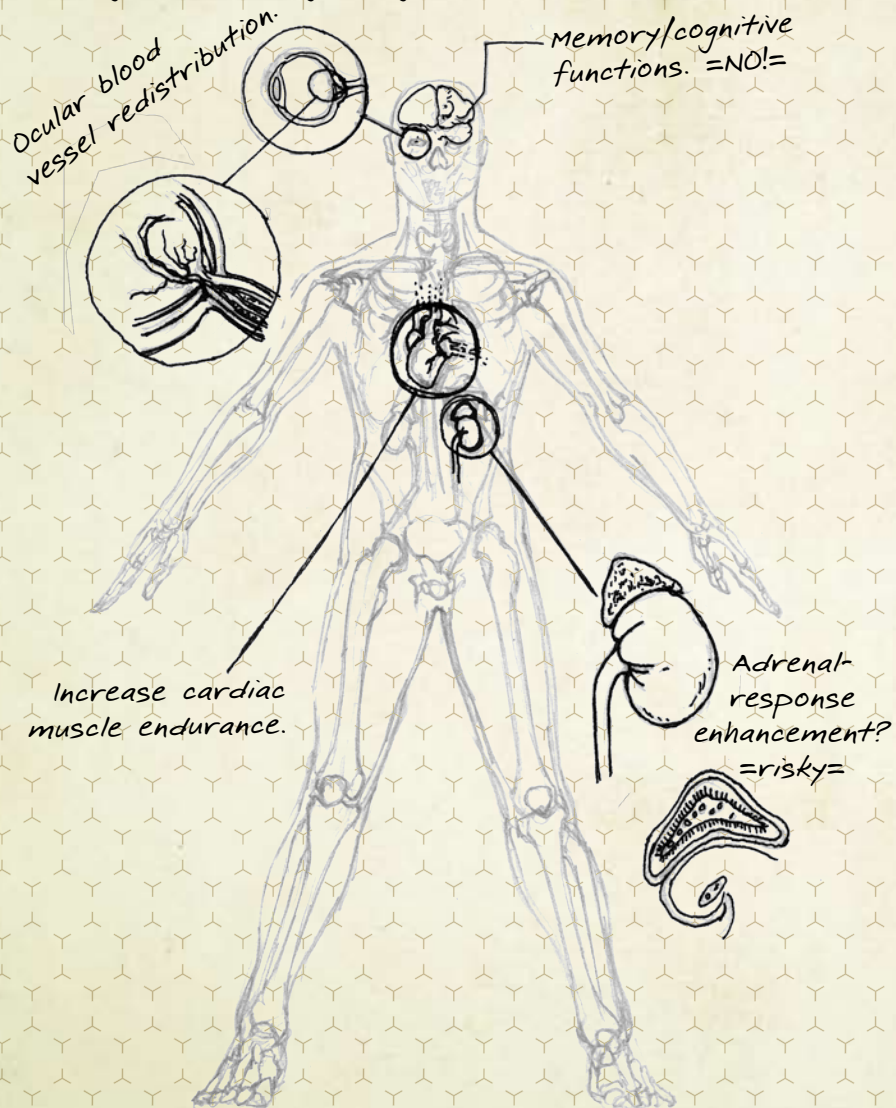
Is any price too high to pay?

This may be our only solution.

Now, back to work.

Need more
DARK coffee.
Why can't they
grow decent coffee
on this planet?!

Thoughts on next-gen augmentations.



February 15, 2511

While I agree with the original direction of project ORION (even then they recognized the need for nontraditional forces to remove the budding dissident leadership in the Outer Colonies without massive carnage), their methodology was... unsettling.

(Amateurs led by uninformed career military.)



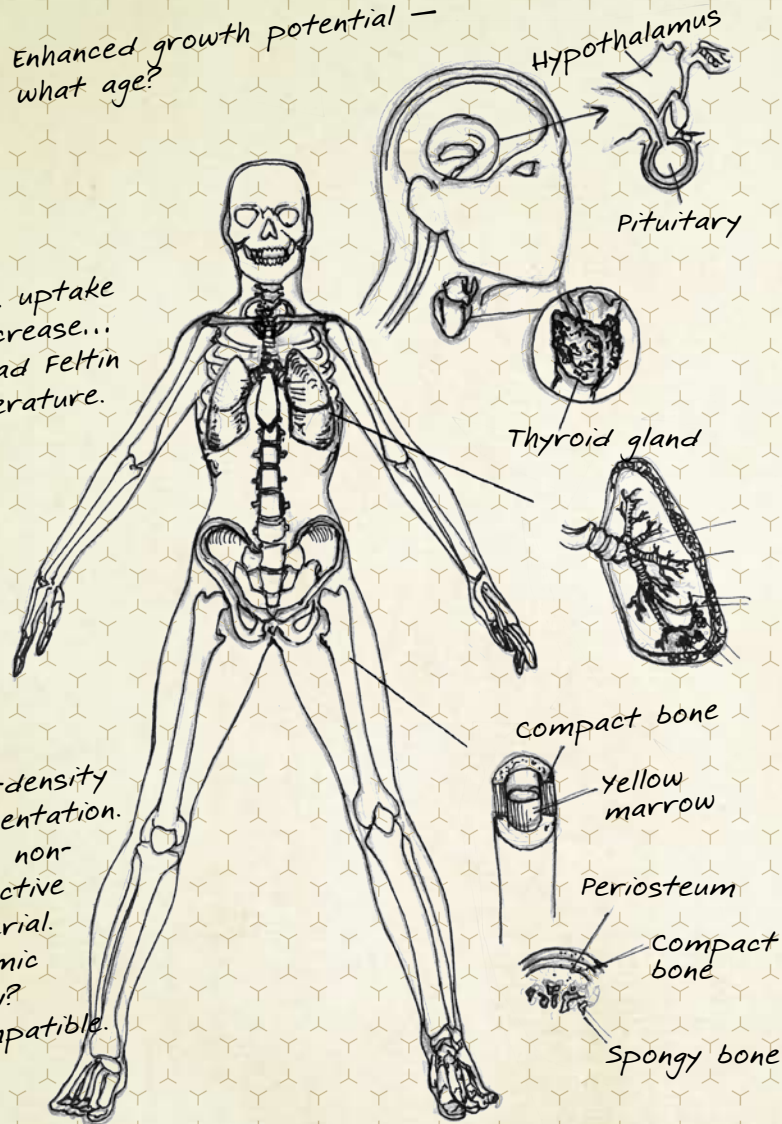
1. **ORION** candidates were volunteers from various UNSC special forces: men and women who were undoubtedly qualified for any military assignment. But they were much too old to undergo genetic augmentation. Inserted gene sequences led to subminimal target changes, while the immunosuppressants failed in most subjects, causing rampant, irreversible genetic fragmentation and degenerative conditions.

▷ **Refinement:** Next-generation candidates must have more malleable, robust DNA structure/repair enzymes. With satisfactory testing of the L-DNA hydroxyl re-polymerase, the most suitable candidate would be prepubescent.

Enhanced growth potential —
what age?

O₂ uptake
increase...
read Feltin
literature.

Bone-density
augmentation.
Need non-
bio active
material.
Ceramic
epoxy?
Incompatible.



2. ORION candidates' genetic screening was wholly inadequate.

▷ Refinement: Generation-II genetic selection criteria are astronomically improbable. Statistically, over thirty-nine billion DNA records are required.

The largest DNA database is currently the CAA's Outer Colony vaccination program. Colonists tend to avoid registering births and deaths, and even paying taxes... but they eagerly milk the free school vaccination program, which regularly catalogues DNA traces from the disposed injectors.

Deconvolution techniques can now reconstitute the entire base-pair sequence from such a trace, and I intend to recalibrate my selection criteria to look for markers that will expedite the sifting process.

3. Many ORION candidates exhibited post-traumatic stress disorder or repressed insurgent sympathies. Some in the latter category refused to participate post-augmentation and were incarcerated.

Sympathies of this sort are likely dormant in most Outer Colony citizens. On some level we all identify with these colonists (the CMA relentlessly churns out propaganda about the "noble" pioneers).

More pointedly, these are the very people we are fighting to protect from a nascent civil war.

▷ Refinements: Total indoctrination is required.

NOT the brainwashing, however, suggested by several of my counterparts in the Intelligence community.

This requires persuasion and acclimation — a lifelong training commensurate with the import of the Generation-II ORION mission.

Our most efficient agents will be those who thoroughly understand and embrace their orders.

To forge a new breed of ORION soldiers into unrivaled human weapons, we must maintain absolute control over them.

▷ Summary: Criteria involving genetic flexibility, a statistically improbable set of DNA markers, and a decade of indoctrination and training leads me to one conclusion: the ideal candidates are children.

My logic is sound, but ethical and moral ramifications linger.

So much to reflect on... I need time to think.

Substitute "Generation-II ORION" with something more inspirational for my military counterparts. They do love their code names.

Titans
Argonauts
Odysseus
Olympians
Zulu
Kronos
Promethean
Armor
Nemesis
Daedalus
Viking
Hercules
Hyperion
?

February 23, 2511

My god, they detonated a nuclear device at Haven!

Preliminary radiological analysis indicates the bomb was spiked to disperse toxic materials high into the colony's atmosphere.

Millions dead.

Millions more projected to die from the fallout.

Countless birth defects for generations to come.

The Freedom and Liberation Party has claimed responsibility, demanding the CMA withdraw from the Eridanus sector.

How could they commit such an atrocity? And against those who were supposedly their allies?

They are INSANE!
They must be stopped.

I have to stop this.

First of three niobium
precursor molecules in the
polymer synthesis.



Ask about supplies?
Insurgent-controlled mining colony?
This is my problem?



July 30, 2511

The piezoelectric effect, discovered in the 18th century, is a phenomenon present in certain materials that produce an electric field or charge when subjected to stress or deformation. The reverse is also true — i.e., an electric charge or field applied to PZ materials causes a slight structural deformation along a preferred axis.

I note this because it delights me to no end that a 700+-year-old technology may help solve a 26th-century problem.

Test results just came in from the new polymerized lithium niobocene (cf. ferrocene).

This material was developed for discharging the vast amount of static energy that plagues ships in Slipstream Space. I wonder why no one thought to investigate the reverse effect of this material (it actually has voltage-induced deformation characteristics several orders of magnitude greater than any PZ material ever discovered).

If this material were used as a sheath or suit of artificial muscle, when worn it could

How much of this antiquated design remains useful?

Start from scratch.

Budget?!

~~STEEL BA~~
~~CHRO~~
~~META~~
~~FOLLOSS~~
~~RPO CO.~~

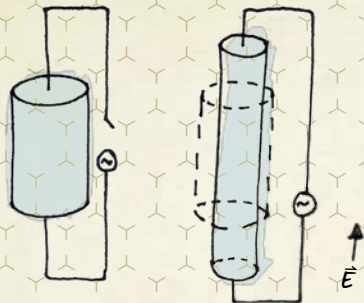
No work
before
coffee.

effectively increase the linearly coupled strength of a gen-II ORION soldier tenfold or more. (I'm reluctant to call it "armor," which would give my military counterparts imprudent fantasies about this technology.)

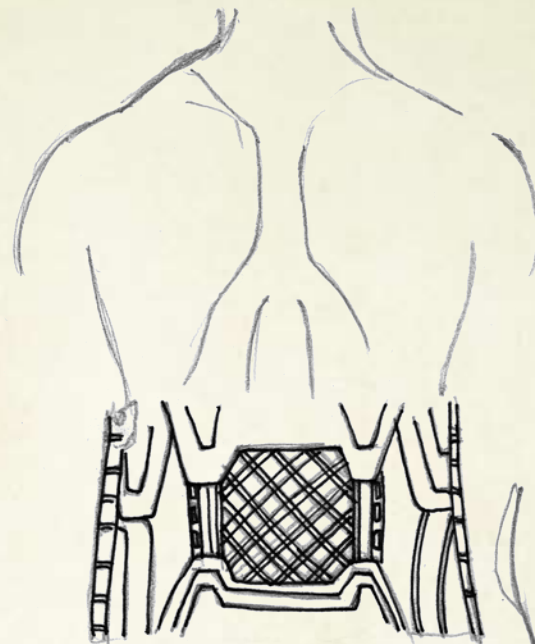
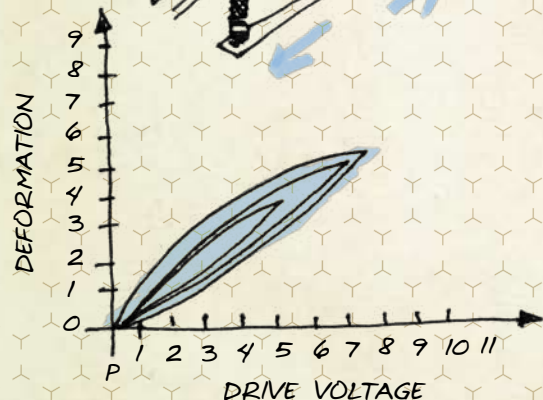
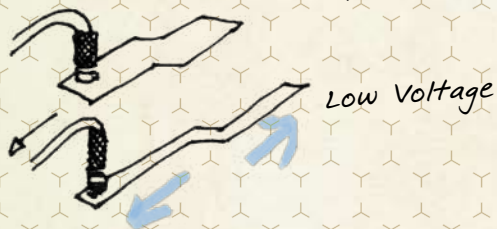
Manufacturing an entire suit at this point is cost-prohibitive. The vice admiral assures me that this will be addressed in the "production" phase of the project. I have my doubts given the vast scope of my request.

I'm convinced there is a way to couple this new technology to a wearer's nerve inductions (positive feedback) to dramatically increase reaction speed (see notes in Jorjet).

Still, I have yet to solve the energy requirement. Any human-sized suit would need a small nuclear or fusion reactor to generate the required power. Expensive. And who would willingly strap on a reactor backpack?



0 \vec{E} Applied



BACK

Theoretical properties of threaded/woven materials intriguing. Simulations demonstrate limited geometric increases in strength and mobility.

How to regulate geometry?

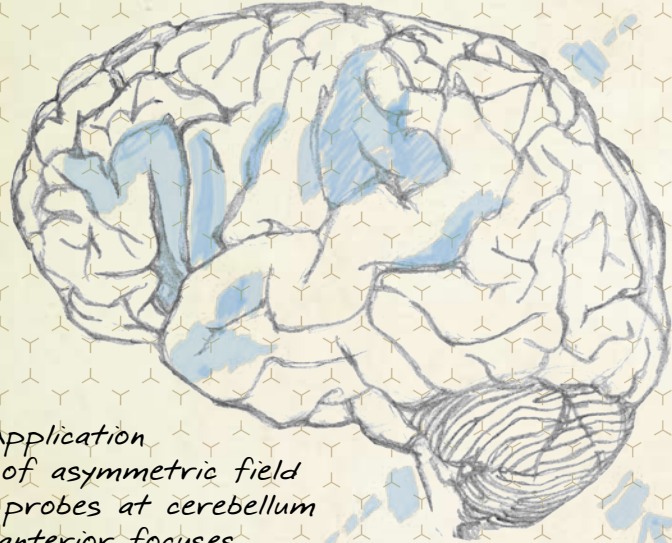


Constant \vec{E} applied

Need to follow up on the standard PZ effect on this configuration. Convert impact energy into a potential power source? Doubtful. Ask Déjà about research on vacuum energy.

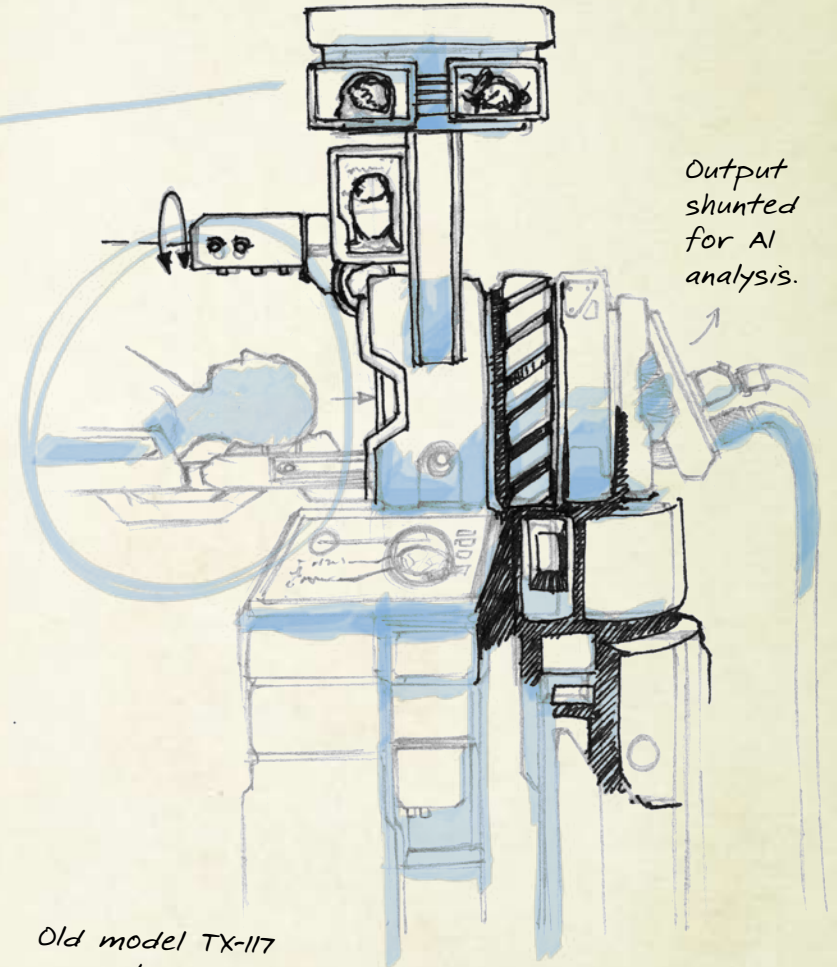
Scan (time slice 099312) of the recollection map of Pythagorean theorem derivation (subject 492-b).

Third field applied here.



Application of asymmetric field probes at cerebellum anterior focuses maximum signal strength at primary hippocampus sites. Dual probes yield best results, but here required a third to boost the signal as it propagated through an extended cascading network.

Hippocampus — converts short- to long-term memories, and is the key to mapping the engramatic networks distributed through the brain. How is that map stored? Must research.

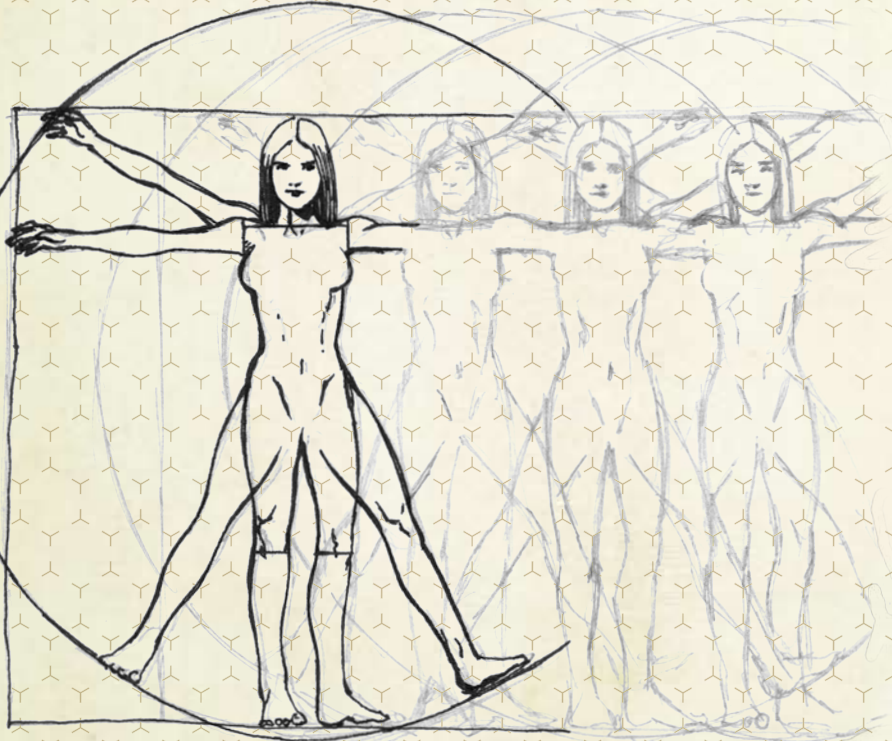


Old model TX-117 converted.

September 8, 2511

Most muscular- and organ-cloning techniques were perfected long ago. The stubborn holdout was the human brain, which until five years ago had defied conventional cloning procedures.

Regional neural cloning came millimeter by millimeter — the medulla, the pons, the mesencephalon, and finally the entire cerebral network. But memory implant remained an elusive dream.



Until recently.

I have finalized the control parameters of a Fast Fourier Transform X-ray 3-D scan for mapping a brain's ionic density patterns that indicate individual links (10^4 connections for each of the 10^{10} neurons). A deep-stimulating scan can then cultivate growth linkages in a "blank" cloned brain (i.e., memory transfer).

Thus we can manufacture a complete human clone that is virtually indistinguishable from the original host.



Can this technique imprint the next-generation artificial intelligence and avoid the wavefunction collapse that has plagued functionality?

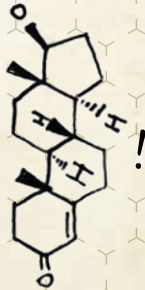
June 19, 2513

Manufactured? Born? If we go down this path... copy these people — these children... there's no retreat.

Complications: Rapid flash cloning of immense volumes of tissue induces gross DNA base-pair errors. Congenital defects increase 42%, incidents of Parkinson-plus syndromes increase 67%. With brain/memory replication, there is an 82% rate of dementia, schizophrenia, and brain cancers.

Although a small fraction of clones are projected to live a normal lifespan, the average half-life of the physiology in toto is 14.7 weeks.

I've informed the vice admiral that we are initiating the next phase of the project: candidate procurement.



I finally have my name.

I am tired of incessantly referring to "The ORION Project Generation Two" in my official notes, reports, and briefings.

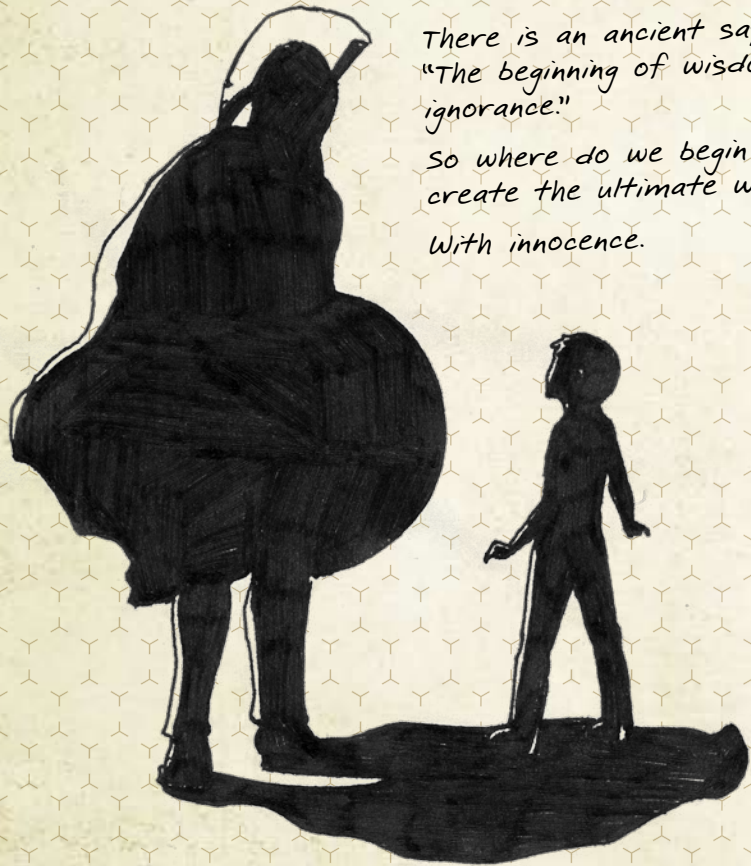
Also, the vice admiral "hinted" that rechristening the project would serve to distance us from the failures of ORION in the minds of the politico and military bureaucrats controlling our budget.

I've always bristled at the mythological Orion reference anyway... a Greek hero who was once blinded and met, in my opinion, a rather silly demise.

I've had Déjà and Jorjet give me a refresher on military history. After many contenders (Praetorians, Landsknecht, Immortals, Minutemen), I've chosen SPARTAN as the name that best represents our project's aims.

My reasons include:

1. The 300 Spartans who defended Greece at Thermopylae is a well-known and cherished tale (almost to the point of romantic fanaticism) within the military community. (Coincidentally, "The ORION Project Generation Two" was originally funded for 300 candidates.)



There is an ancient saying,
"The beginning of wisdom is
ignorance."

So where do we begin to
create the ultimate warrior?

With innocence.

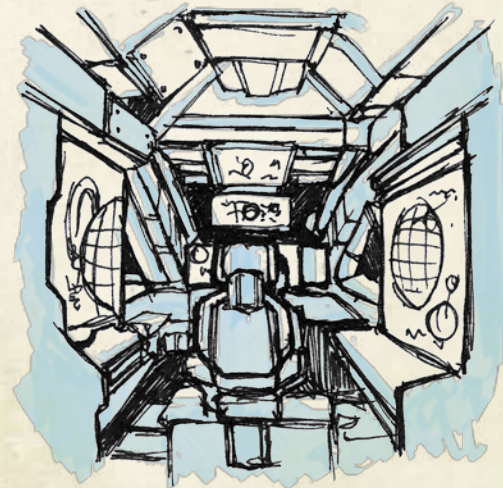
2. The ancient Spartans' training is legendary. They started when boys were seven, molding them into the most fierce and feared warriors of that day. I will do the same.
3. Most intriguing to me were the eugenic customs of Spartan culture. Their babies were inspected for strength and fitness; if lacking, the babies were destroyed. (Barbaric by any modern standard, though I wonder in what way the selection protocols I've authored are any less excessive... any less cruel.)

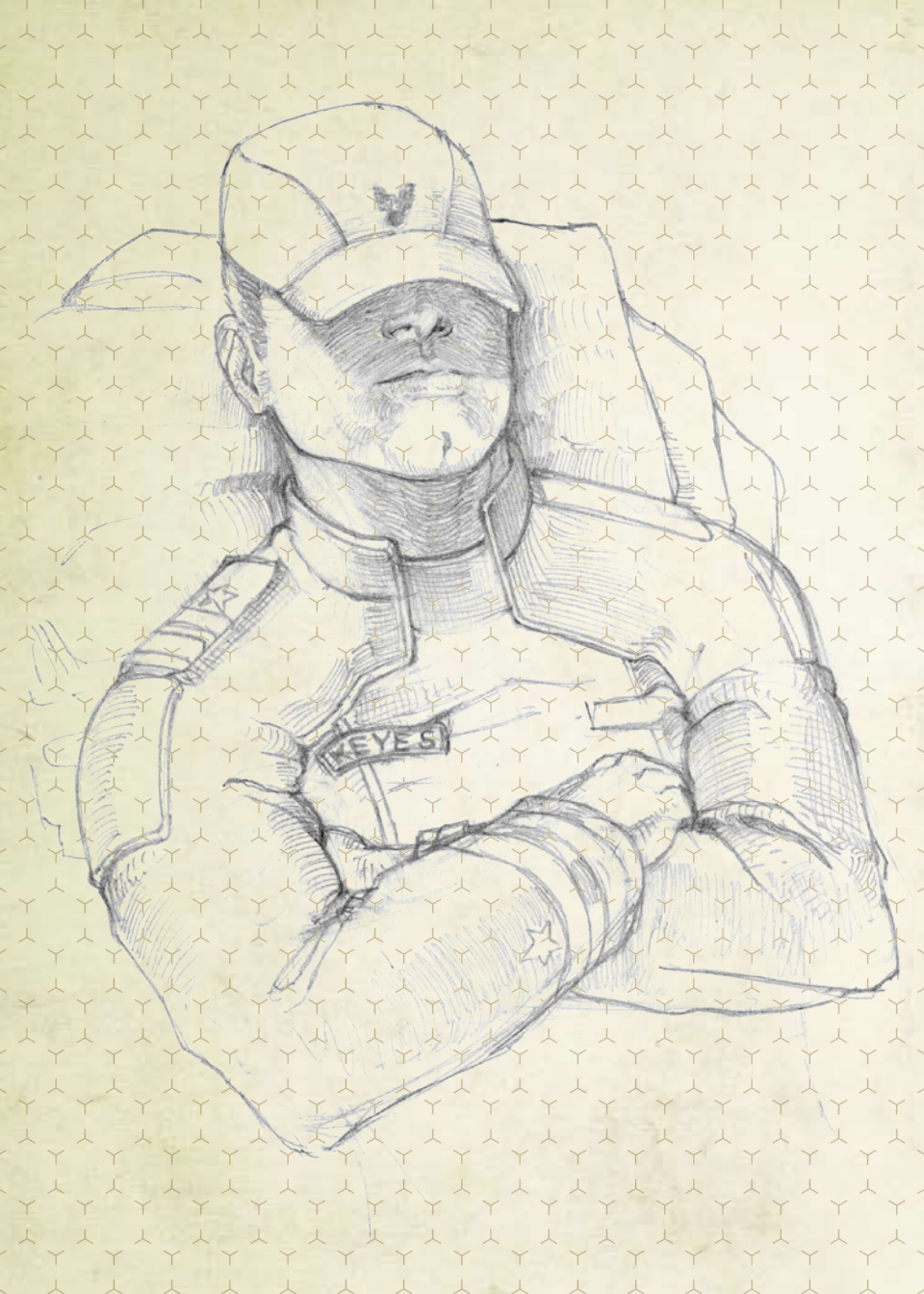
That said, a part of me still wants to honor the sacrifices of those men and women from the original ORION effort; after all, the research from ORION has proved invaluable for my current work. So in memory of those who have gone before, and with hope for those yet to come, I'll call this project SPARTAN-II.

July 21, 2517

Since I can't personally screen every candidate from the Outer Colonies within a reasonable time frame, I'm delegating much of this responsibility to my team, while I will process candidates in Sector 4. ONI has provided me with a diplomatic shuttle, the Han, along with a dedicated AI, Toran, and my young lieutenant to pilot the craft and act as attaché ("babysitting" comes to mind).

The Han...
a "diplomatic"
shuttle I was told!
Maybe for Lilliputian
ambassadors.
Good thing not
claustrophobic.





This Lieutenant Keyes seems curious, intelligent, and also, so far, adept at keeping his mouth shut — a rare combination of traits.

I haven't decided whether to recommend him for permanent reassignment to my staff. I'm not sure he has the long-range vision required to overcome the moral ambiguities of our mission.

Naturally, he has no idea what we are doing out here.



Jacob...

September 15, 2517

Astonishing! Every candidate has exceeded the selection criteria... and my expectations: superior strength and speed coupled with dazzling intellects and remarkable cognitive absorption rates. In another time, each could have been the next Alexander, Cleopatra, Hannibal, or Genghis Khan.



My drawings of
children are horrible!

One girl (Number 058) engineered her own intelligence network at school to spy on the teachers!

Number 117 had an unprecedented string of forty-five victories over two weeks in a brutal version of King of the Hill. Walked away with a chipped tooth. Over a dozen broken arms, collarbones, and fingers among his opponents.

Number 095, oddly enough, was never located. Some have suggested limited precognition — but I'll believe in "trolls under the bridge" before I subscribe to such pseudoscientific nonsense.



September 15, 2517



Addendum: Retrieval team Gamma reports that Number 087 eluded capture for six hours! She dodged and sprinted away faster than anyone anticipated.

Fortunately, the girl came forward... believing it all to be an elaborate game for her upcoming birthday!

This serves as a reminder of the candidates' special natures, and how one mistake could jeopardize the entire program. If insurgent-sympathetic media discovered our project, they would discredit us with the very populations whose sympathies we are trying to retain.

We've implemented new retrieval protocols.

No more mistakes.



Feint

Scissors

Unloading

Slingshot

Immelmann — old school

Shaw

Fujikawa

September 16, 2517

After months together, Jacob and I parted company. Amicably, I think.

He's a brilliant thinker and superb tactician; he's also a decent man. Because he is all those things, I feel he was beginning to suspect there is more to our excursions to meet candidates than mere field observations.

His intuition serves him well.

For his protection and the protection of the program, I requested that he be reassigned.

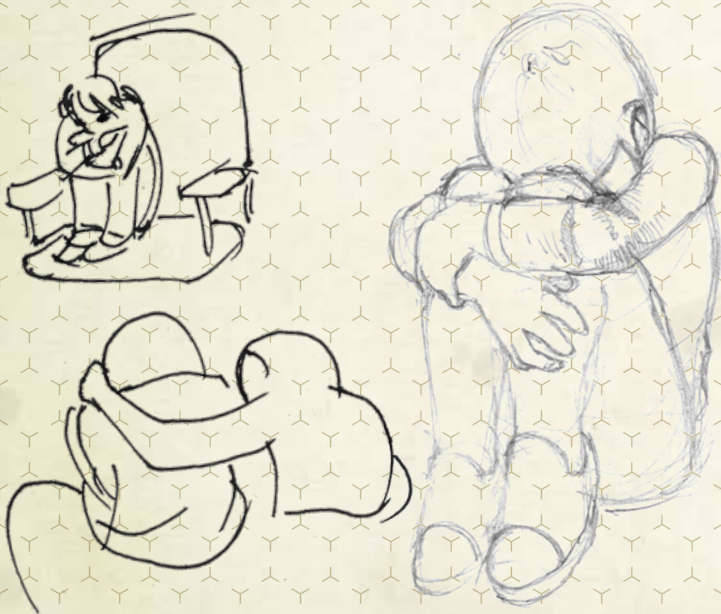


Hands on. Didn't even wait for the tech crew. Got it done though.

September 23, 2517

Phase one of indoctrination under way. We're attempting to tell the candidates why they were taken... why their mission is critical for the fate of all humanity.

Some already comprehend the magnitude of their task. One boy, a six-year-old, actually asked me if they were "here to save everybody from fighting and killing each other"!



Most understand only pieces...

... and all of them miss their fathers and mothers.

My team of ONI child psychologists assures me that after six months under Mendez' tutelage they won't even remember their names much less their families.

ONI grossly underestimates the candidates.

Typical.

Working with Déjà to continue the indoctrination protocols and education to ensure willing compliance.

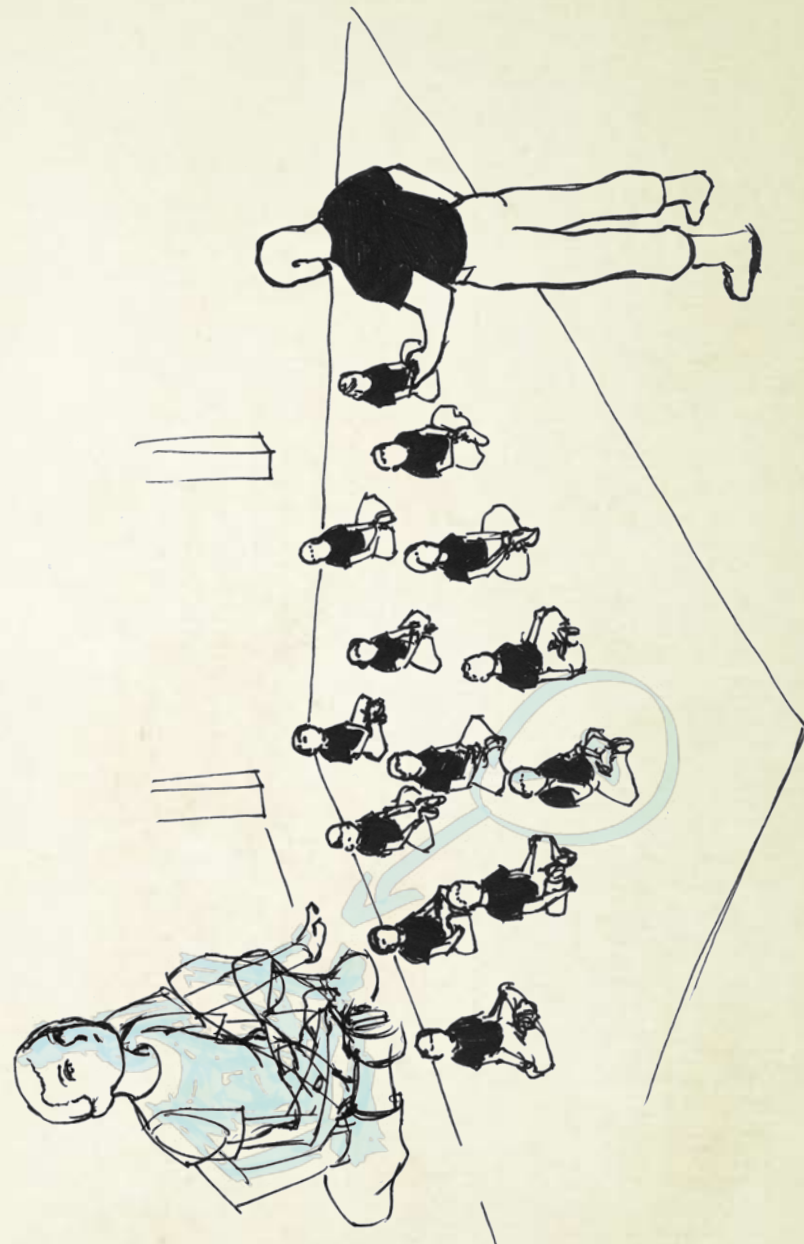
We are asking everything of them. They deserve as much truth as we can stomach to tell them.



September 28, 2517

Candidates were given haircuts today.
 Number 087 disarmed the master sergeant
 barber of his clippers before three other
 attendants were able to pin her down and
 shave her head.

Master sergeant said he'd seen feral cats
 squirm less... and leave fewer claw marks.



December 24, 2517

I just received a batch of after-action reports regarding the fates of the replacements.

Longevity is well beyond what I've seen in laboratory conditions. Could the effect of their parents attempting to nurture them back to health be a factor?

I've assigned JACKBOOT to track this.

I can't bear the detailed reports of the hosts' and parents' sufferings, and in all too many cases, their deaths and grieving.

I feared this would happen to me. Something about the parent-offspring relationship debilitates my otherwise objective reasoning, evokes emotions... far more than anticipated.

December 10, 2518

Several possible leaders are emerging from the pool of candidates (and we have yet to witness the aggressive alpha dominance predicted by ONI's "specialists").

Mendez and I agree that the top candidates for leadership are Numbers 051, 092, 104, and 117. Mendez says his money is on Kurt. I refuse to engage in any puerile betting when so much more is at stake than money or pride.

Besides, I already know who will be their leader.

I knew the first day I met him.



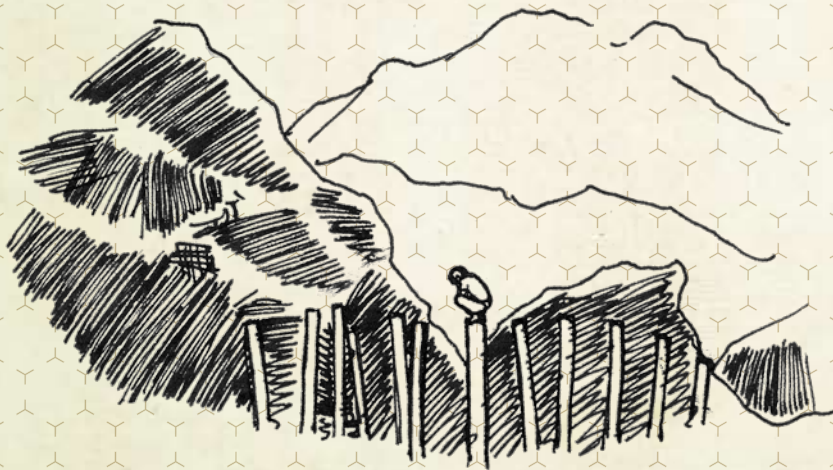
September 27, 2520

The candidates experienced their first casualty today — but not among their ranks.

It was one of their handlers. He used too much force and overcommitted, using his entire body to pin the candidate. Number 137 reversed the pin and then used the instructor's own brawn and mass against him, throwing him, severing the spinal cord at the fifth and sixth cervical vertebrae.

Death was immediate.

I saw 137 crying outside the barracks. I left her alone.



Mendez and I concur: no disciplinary action. Memorial services will be held, all candidates will attend, and then training will resume.

I've instructed Déjà to emphasize the history of military training — that to simulate combat conditions, lethal force is often employed; that accidents are an inherent risk... perhaps even inevitable.

Mendez spoke with the child. She understands. She will recover.

This bodes well. There will be many deaths before boot is over.

October 15, 2521

Standardizing our operating systems over the last seven decades has left us vulnerable to the insurgency. Since the ubiquitous code is identical on every ship and base, any enemy can study it and, despite highly regulated security, hack it.

A terrorist recently disabled a patrolling destroyer, the Persephone, before a single shot was fired. Persephone's captain elected to abandon ship and overload the reactors before allowing her capture.

How ironic! In perfecting our software we have rendered it ineffectual.

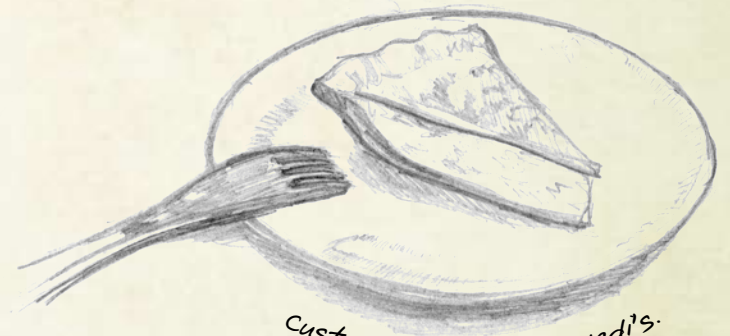
The Outer Colonies employ homegrown collections of software; our success in penetrating their idiosyncratic systems is patchy at best.

Time to think outside the box — or, in this case, outside seventy years of dogmatic programming practices.

Our third-generation AIs are now operational. I've spared no resource to develop routines, based on existing translation algorithms, that enable this new crop of intellect to penetrate ANY system software.

A serendipitous side effect: the AIs have learned to mutate and defend established UNSC OSs from attack.

Illegal Entry Protocols (IEP) and Counter-Illegal Entry Protocols (CIEP) are now commonly called "PIE" and "C-PIE" — vocalizations of misspelled acronyms. =good grief!=



Custard Pie from Havadi's.

June 5, 2522

Odd even to me at this stage, but my official role with ONI has until today been only advisory — a series of undocumented but well-paid contracts that have benefitted me little, since I lack the time or interest to spend their money.

They finally offered me the chief scientist position, and I accepted. I'm not entirely certain why they chose to now, as I've never engaged them on this topic before. It might have something to do with the general curiosity of the scientific community and my colleagues (since I haven't given any of them an ounce of my spare time for nearly a decade). They may have come to suspect that my unofficial/temporary/advisory role here is, in reality, none of the above.



August 22, 2524

I'm furious!

My candidates were rerouted during a training exercise to a Special Forces camp on the other side of Reach.

Mendez says his sources speak of "interested parties" within ONI who want to observe them in action firsthand.

Why? To usurp my project? To cut our budget?

I took my grievances to the vice admiral — claims to know nothing and told me to stop being so paranoid (a sure sign that something is going on).

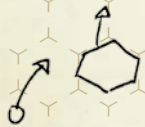
I've requested that the production of the next-generation AI matrix strata be expedited so my new intrusion and counter-intrusion software can be developed to aid the Spartans... and to watch my back.

November 17, 2524

I met my lieutenant again while attending a conference at the University of Calippus.

Don't know if it was the dizzying pressure that I've been under, or the chance reunion with a kindred spirit in a strange place, or something else...

... but I'm glad it was him.



February 23, 2525



I had a rare chance to have a long talk with John today. He is convinced we are about to enter a new, more severe phase of the Spartans' training. (How does he know?)

He told me not to worry, that he and his team were ready for anything.

Part of me wants to tell all of them, show them, the exact protocols they must endure for the augmentation phase.

Part of me wants to offer them a choice. Would any of them refuse?

There really is no choice, is there? Not for humanity's sake. Every day the insurgency grows bolder. Millions have died in defense of the Outer Colonies since we started this. Déjà updates and runs my revision of Carver's model weekly... the results grow worse.

The Spartans must be forged.

March 9, 2525

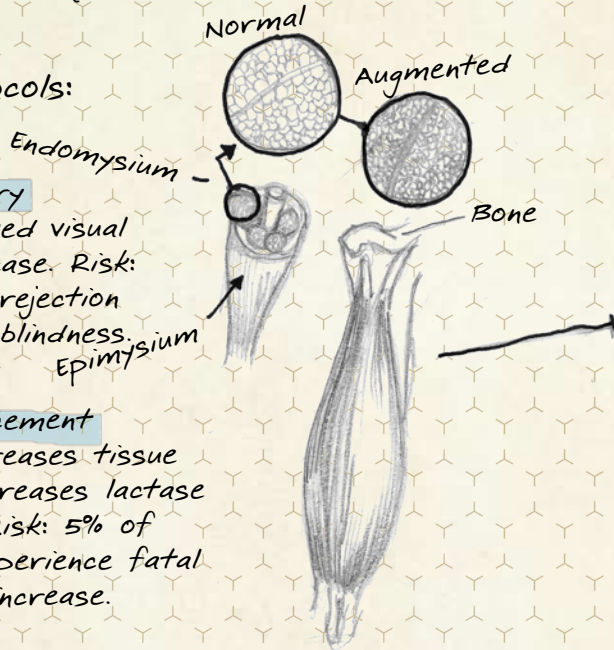
I divided the final list of augmentations into two categories: those that fall within 12.5% lethal/malformation tolerances, and those with higher failure rates or long-term side effects that we haven't adequately studied.

Accepted protocols:

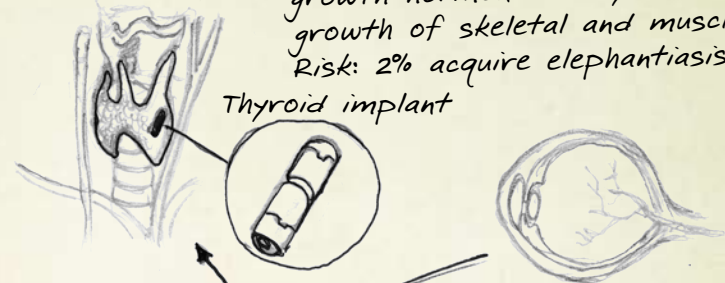
1. **Occipital capillary reversal** — Marked visual perception increase. Risk: 11% have retinal rejection and permanent blindness.

2. **Muscular enhancement injections** — Increases tissue density and decreases lactase recovery time. Risk: 5% of test subjects experience fatal cardiac volume increase.

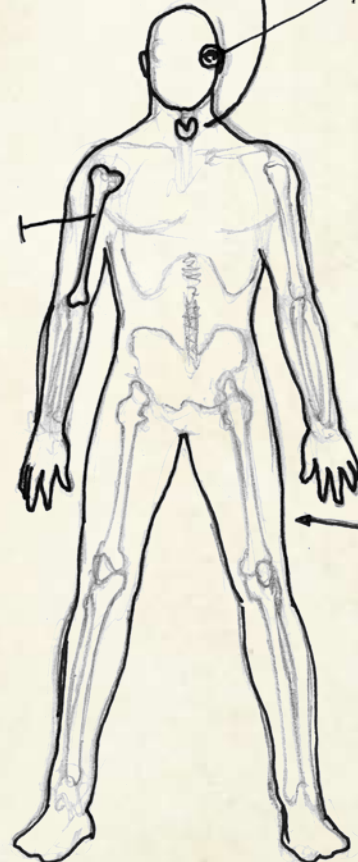
3. **Carbide ceramic ossification** — Advanced material grafting onto skeletal structures makes bones virtually unbreakable. Risk: 3.8% FAIL rate due to possible mutations and compromised matrix/marrow integrity (based on primate case studies).



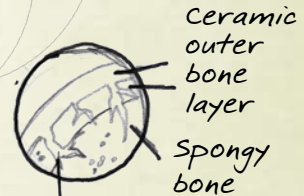
4. **Catalytic thyroid implant** — Human growth hormone catalyst boosts growth of skeletal and muscle tissues. Risk: 2% acquire elephantiasis.



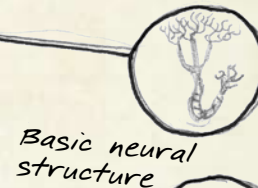
5. **Superconducting fibrification of neural dendrites** — Significantly increases reflexes. Risk: 12% contract Parkinson's disease and Fletcher's syndrome.



Bone cut away

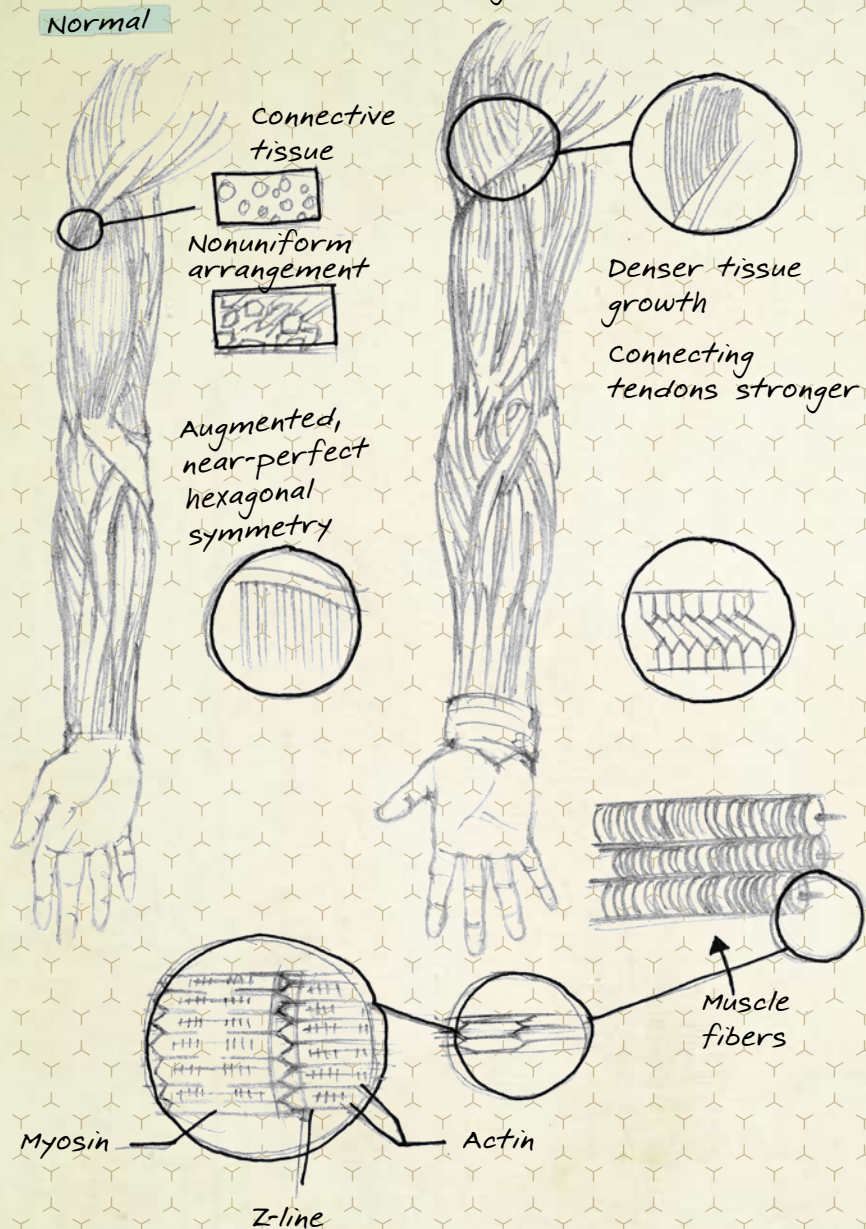


Ceramic ossification and coating



Normal

Augmented



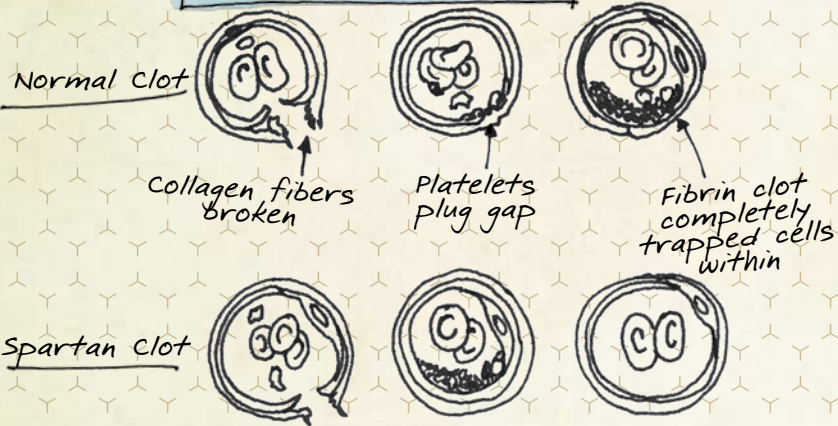
Bottom line: An acceptable but alarming rate of failure... a rate that I fear may be enhanced by cross-chemical complications, to say nothing of the systemic physiological stress that may produce cardiac arrest and/or aneurysms.

Although the following protocols have unacceptable FAIL rates, they show promise, and may, with future research, be redesigned within acceptable tolerances.

1. Adrenal thermal metabolase — Enhances adrenal response under physiological distress. Catalyst, however, breaks down into highly toxic waste products making this protocol eventually fatal. Future research: Possible coenzyme inhibitor?
2. Cyclo-synthetic neural transmission gene sequences — Significant evidence to support increases in intelligence and cognitive markers. Very high rate of psychotic and antisocial behavior absolutely prohibits the use of this protocol on any SPARTAN-II candidate. Future research: Gradual application over the subject's early life mitigates side effects? (Long-term studies being quietly arranged; see notes on Operation: TENDRIL.)

3. Leucocytic coprotein complex and microfibrin spindlase — Wound suppression and near-instant blood clotting of vascular breaches. 33% of subjects incur fatal clotting. Future research: Unknown.

Blood Clot Time Lapse



4. Neuron surface viral microphages — Site injection on neural tissues boosts selenium fiber bonding by three orders of magnitude. Subsequent appliances fall well within acceptable signal-to-noise ratios, making cybernetic augmentation and integration possible. FAIL rate UNKNOWN, but I am loath to manipulate neural parameters without more detailed studies. Future research: Pending.
- We start the augmentation phase tomorrow.
- If only there were a god to pray to.



She will have to
answer for making
me drink decaf.

April 1, 2525

Failures. As a scientist I've been trained to regard a failure as a data point, build a trend from many data, project long-term structures, and learn from my mistakes.

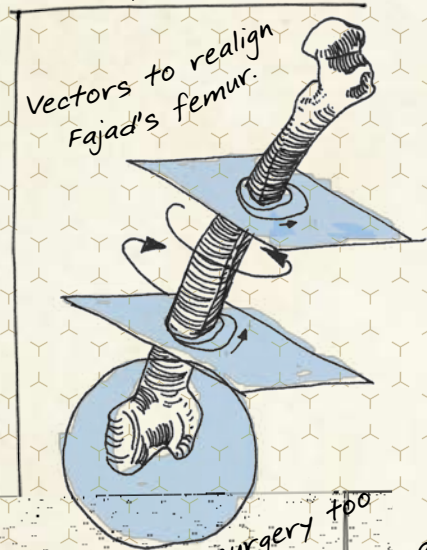
But now every "failure" means some malformation in a child... or an excruciating death.

Was the need commensurate with the risk?... We had to move quickly. The onset of puberty was the gating factor — that and the pressure from a growing insurgent threat.

Must move forward. Find solutions.

I'm sure the vice admiral's ONI trauma experts are reporting that I'm "not letting go."

They can all go to hell.



Orthopedic surgery too complex.
Needs total regrowth?
Replacement?

I've ordered that NO candidate autopsies be performed (noninvasive scans and blood tests are permissible). Brief funeral services (closed casket) served to help surviving Spartans attain psychological closure.

Bodies of augmentation washouts are cryogenically preserved, pending further study. Perhaps one day we'll discover ways to ameliorate or reverse lethal side effects and revive some, if not all, of them. That is my hope.

Reviving these candidates would be fraught with complexities — and not just from a technological perspective. How would they respond to an essentially new world when resuscitated months or even years later?

How would surviving Spartans react to their comrades' resurrection? I certainly can't predict. One thing is certain — ONI would find a use for them.



June 27, 2525

Those ravaged by malformations too serious to continue in the SPARTAN-II program have been offered various "desk" duties within ONI, thus allowing them to move on with a semblance of normality.

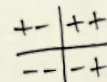
I've assigned Déjà to investigate as-yet theoretical therapies that may resuscitate these washouts as fully functioning Spartans. (One protocol already looks promising: the complete bone restructuring and attendant nanografts to effectively replace the skeletal system in toto; this may prove especially useful for Rene or Kirk.)

I'll let them adjust to their new jobs for several months before suggesting some of these experimental procedures... by which time the candidates will likely be willing to try anything to recover.

Their paths may be the most arduous of all Spartans', but I can't see them surviving vigorous indoctrination and training only to become passive spectators.

Planning is under way for experimental surgery, therapies, and rehabilitations for more than 80% of the augmentation washouts. Several of these protocols may take years to complete. Als predict a survival rate of no greater than 50%, but I suspect the Spartans' will to serve — to live again — will radically boost that percentage.

They've always exceeded expectations.

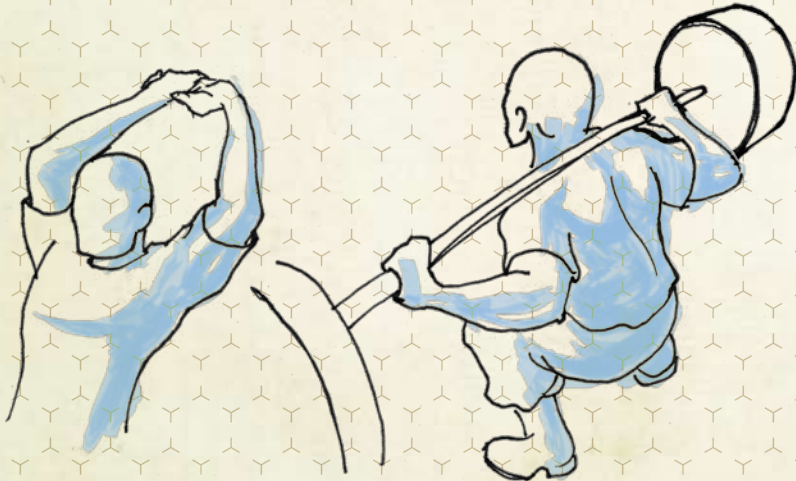


June 28, 2525



This is my last official day at Camp Hathcock. The powers that be at FLEETCOM offered me a corner suite in the Olympic Tower. Difficult environment to work in; surely not their goal.

CASTLE Base is my new home... until further notice.



June 30, 2525

It's been four months since we sent the prototype to NavSpecWeap for evaluation. I was shocked to learn today that limited-run production is approved.

I was led to believe that a decision would be hopelessly mired in military bureaucracy for at least another three months. Must follow up with my source on what prompted our military collective to make such a "prompt" decision. Can't be good news.

A test case file was unwittingly "attached" to the official response.

(Some poor network jockey left a partial routing code in the gutter of one file that was trivial to backtrack through NavSpecWeap's firewalls.)

Clearly the file was never meant for my eyes, as it seems certain brass sycophants wanted to discredit my theories by actually putting a volunteer into the prototype suit. Lamentably, they ignored my emphatic warning about the reactive circuitry being fine-tuned for augmented Spartans with reflexes and strength far beyond human norm.

When the suit was activated, the volunteer's first muscular twitch was amplified via the positive feedback loop. Without the proper physiology and training to compensate, the feedback increased in amplitude and frequency until, in the words of one witness, "the poor bastard ricocheted like a rubber ball!"

Broke several bones; snapped his spine in three different places.

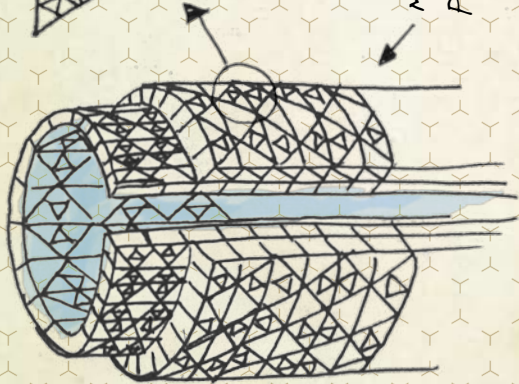
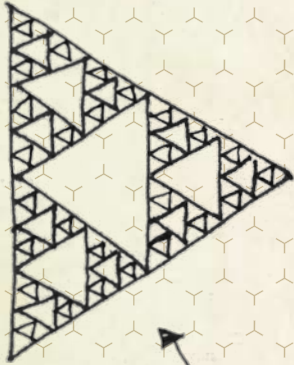
I had specific safety measures to handle this precise situation, and I WILL find out which idiot failed to enable all the monitors.



Near-perfect fractal geometry.

Sierpinski Pattern Advantages

- Selective, finely tuned \vec{E} applications.
- Scaling.
- Automatic annealing to lowest potential energy.



Multilayered Sierpinski Capillary System, interior, post \vec{E} field alignment of polymerized LiNb-ompX



Gross \vec{E} field direction

Does spectral dimension shift with critical \vec{E} field application?

TEST:

September 1, 2525

Applying the new liquid metal crystal version of the polymerized lithium niobecene. Unlike its nonliquid counterpart, this material is amorphous, which circumvents a major engineering obstacle: custom fitting millions of individual polygonal pieces under the second armor layer. We merely "pour" it into a capillary system where microelectric fields can direct crystallization geometries.

LMC PZ material scales fractally to double the wearer's strength over a superior range of motion. (I can exceed this — archaic safety regulations be damned! They never anticipated this technology.)

Disadvantages: Manufacturing processes involve classified "super-toxic" precursor materials and require a zero-gravity environment.

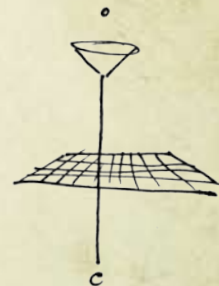




Coupled with extreme need for secrecy, these factors have led me to pick the orbital materials testing facility (dubbed Damascus) near Chi Ceti-V.

I'm relocating the Materials Group there. I'm ambivalent, though — part of me wishes I could relocate as well, to oversee every detail... but the next phase of the AI program requires my intimate involvement.

Did not expect the separation anxiety to be so strong. I guess not hearing her cry wakes me up at night too.



November 3, 2525

First contact at Harvest.

Not even in my darkest nightmare did I envision this.

I assumed we'd be technologically inferior, but never imagined so much carnage. How could "advanced" beings engage in such unconscionable bloodletting? (Humanity's less than unstained hands notwithstanding.)

They spoke our language.

They know us — yet we know NOTHING of them. Who knows how long they've been studying us.

We must assume they know our strengths; our weaknesses.

A game changer.

For the first time in decades I don't feel safe — not even here, buried in the bowels of Reach.

File A77-PX127

November 5, 2525

They're all scared. The only ones not showing any trace of emotion are the vice admiral and the "usual suspects." (Why? Did they somehow expect this?)

Can't let them see how terrified I am.

Opportunities will emerge from this chaos. No more committees; no more red tape. Just a few personal obstacles and personalities to overcome.

I've already taken steps to deal with these.

The gloves are off, as Mendez says.



February 24, 2526

Covenant.

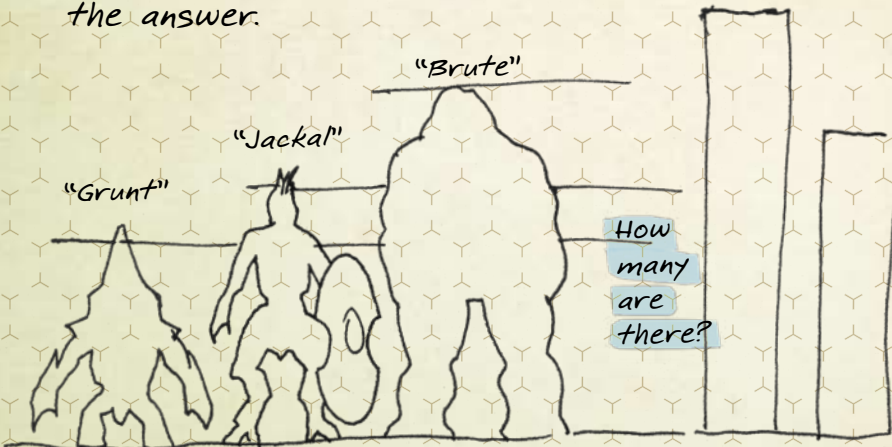
Noun.

A formal legal agreement between parties, or an oath between a preternatural power and sentient beings.

This is how the aliens refer to themselves.

We've discovered several "client" species in their collective. So, does "Covenant" refer to a legalistic agreement among their species, or to a sacrosanct bond they share with some higher power whom they worship?

To better understand — and eventually exploit — their psychology, we must find the answer.



April 28, 2526

Vice admiral ordered us to repurpose EVERYTHING to quell the covenant threat, and to refocus our research on wartime strategy.

I couldn't agree more (it was, after all, my idea).

Inquired if the entrenched insurgency would adhere to our new "policy" (the sarcasm wasn't appreciated).

Learned that Section 2 sent emissaries with full disclosure on the Harvest event to warn Outer Colony leaders.

We made the following offer: UNSC will immediately cease hostilities toward them if they will work to bolster their planetary defenses and end all assaults on our ships... since those may be the only few things standing between them and obliteration.



Authority figures susceptible to suggestion under extreme pressure.

They laughed! They thought it was some kind of trap, a false disaster designed as a trick (with ONI's reputation, this is almost a reasonable first reaction).

They soon swallowed a bitter dose of reality when they saw Bliss destroyed. Frantic pleas from Bliss disturbed; classified footage from the Accra debilitated. They knew this was eons beyond the destructive capacity of the UNSC.

No more laughter, only mourning... and now, resolve.

An alien "Covenant" single-handedly solved our civil war?!

Not a trade I would have willingly accepted, but I'm always open to victories, no matter how small.



May 3, 2526

"Smart" and "dumb" artificial intelligence — both flagrant misnomers.

Déjà is "dumb" with an equivalent human IQ of 240 (within her fields of expertise). This without taking into account the degradation that occurs with intelligence quotients in organic systems (i.e., as humans, our minds eventually deteriorate with age, yet even the "dumbest" class of AI, unless terminated, continues to amass and synthesize data with precision).

"Smart AI" is even more abstruse. This class of intellects is more aptly compared to stellar cycles than their distant organic cousins — they spark, burn brightly, and then either die



by the crush of gravity or quickly terminate in a chaotic eruption.

Both classes of AI accumulate knowledge, but smart AIs also grow in their ability to draw conclusions from an incomplete dataset ("leaps of logic" as Dr. Forester calls them) — intuition... creativity.

As smart AIs age they make more interconnections within their neural matrix, increasing their cognitive abilities... and expediting their demise.

Dendritic growth, cross-connections in near-end-of-term AI strata; cf. cancer growth.

NODE 47A-09

Cross-linkages continue with two possible outcomes: the sheer density of connections causes a cascade of irreversible quantum transfer (a "short circuit" in rustic parlance), eventually halting all functions, or the AI takes extreme corrective action, eliminating connections via preemptive voltage overload. The latter often leads to aberrant personality manifestations, or "rampancy."

Death by intelligence.

Current generation smart systems have a mean rampancy-free lifespan of only a few years.

I've devised new matrix strata with random-access optical couplers that can theoretically extend this lifespan; by exactly how much, I don't know. A randomly coupled matrix also (at least in simulations) boosts correlation effects such as accurate guessing.

Inherent design limitations remain (e.g., the necessity of a human brain pattern to "seed" the initial matrix). Initiation time is obviously wasted as the fledgling AI overcomes this rudimentary neural linkage and develops its own superior system.

Investigate polarization of topological soliton pulse transfers.

The AI's death is inevitable.

Whose isn't?

In any event, smart AIs were required for the SPARTAN-II conscripts' successful infiltration of Outer Colony networks... and we need them more than ever now to counter the Covenant.

The vice admiral authorized a test run of my protocols.

Am I breeding life from nonlife? Am I playing God... or mother?

Or perhaps I've been beguiled by sentimental anthropomorphism.

I wonder...

December 11, 2529

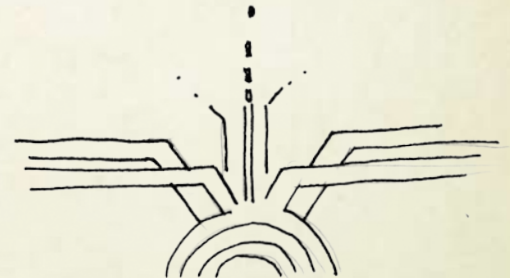
Had limited success using the Illegal Entry Protocols (so-called IPEs) to access a nonessential subroutine (if that term can even be accurately applied) in one Covenant system (for details see Dr. Hardy's work on the Jackal shield gauntlet).

Unfortunately, this procedure accelerates the terminal cross-linkage effect in my AIs.

Jerrold believes he has a solution.

I'm skeptical; proceeding with the utmost caution.

We can't waste our AIs on desperate measures.



April 9, 2530

Sometimes absence of data is in itself data.

CPO Mendez is incommunicado. No one seems to know his whereabouts.

I rarely trust intuition, but this stinks worse than one of the chief's Sweet William cigars.

Must continue to monitor this situation.



July 12, 2531

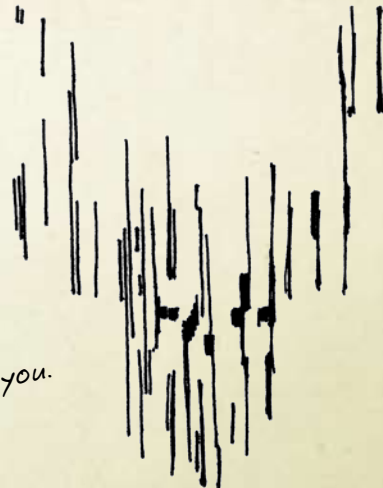
Section 3 is using a new-generation AI of their own to conduct surveillance and protect their assets. This AI was probably among the batch that the vice admiral requisitioned for "missions of grave importance and secrecy." Evidently, one mission specifically protects ONI from me since its counter-intrusion measures are triggered by my network codes, keystroke style, and even my voiceprint.

Could clandestinely check this sneak. Time waster... I'd still be detected.

My curiosity is piqued.

What are they hiding?

I see you.



Jacob has agreed to take her in.
I'll miss her, but it's for the best.

January 18, 2532

Several SPARTAN-II augmentation chemical precursors have been routed to ONI Section 3 laboratories on Argolis, Meridian, and Ariel. Are they replicating my SPARTAN-II program without my guidance? WHAT ARE THEY DOING WITH MY WORK?

Can't fathom the implications.

Tracked all my "loose ends" and none of them have been repurposed from what I can tell. The rehabilitated candidates will soon be recommitted — whatever is going on doesn't appear to involve them.

It's perilous for me to maneuver so far outside my charter (and the protection of the vice admiral). I have enemies who would relish seeing me charged with espionage, or some other trumped-up "emergency military regulation" to cover what we do.

They undoubtedly think I'll dummy-up in order to preserve my role with ONI.

They underestimate me. I won't let this go.

November 10, 2533

Third-gen AIs preemptively sever neural linkages in an attempt to circumvent their terminal phase.

Accelerated link severing leads to increasingly poor choices of which links to cut — i.e., the AIs become so consumed with self-preservation that they ultimately self-terminate.

Similar to the massive necrosis of neural linkages that occurs with the onset of language comprehension and vocalization in human infants (although in humans the linkage severing eventually ceases).

How would that feel, when all you are is intellect, to have to destroy what you've spent a lifetime creating?

To palliate this frenzied cutting behavior, I've developed a new theoretical architecture with three AIs arranged in parallel. All decisions would be made by majority vote. If one abstains, the tie resolves randomly.

Still need to follow up on reports of nested AI personalities on Harvest before it was lost.



Though this may slow overall processing, I'm confident the AI trio would deconvolute and divide algorithms to compensate.

There is also a relatively high probability such refinements could actually accelerate processing.

Consensus decision would also be strictly applied to linkage creation to forge a superior initial neural linkage.

Increase to the trio's lifespan is unknown as simulations can't re-create in vivo artificial intelligences.

Keeping this from the other AIs. Not exactly a pleasant topic.

What other characteristics could emerge from an AI triumvirate?

This is purely theoretical. The military currently requires every smart AI for the war effort.

I do have AIs at my disposal... only three.

I've taken the precautionary measure of moving candidates to the Sanderson private hospital on Beta Hydri-VI. I feel unusually protective of them.

Paranoia? Pragmatism?

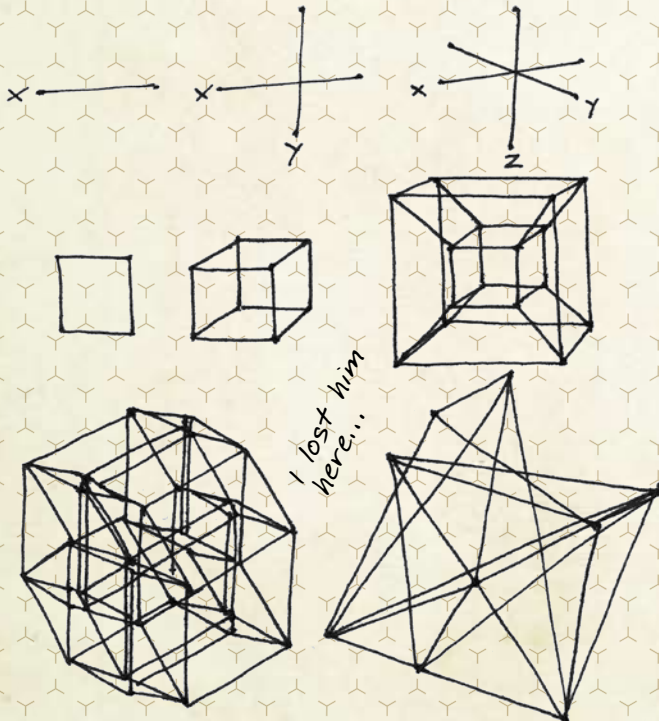


December 25, 2534

Creation of cross-linkages isn't the problem; increased density of those links is what causes wavefunction collapse. Things get too tight.

What if space weren't a limitation? Undoubtedly the number of available connections would increase at a geometric rate.

I illustrated this for Dr. Forester by drawing a 2-D X (with 4 links), and then showing him a 3-D sketch (with 6), and so on, with increasing hyperdimensions. He said it was a "novel fancy."



What the good doctor failed to grasp is that although we are limited to three dimensions, in our 4-dimensional spacetime there remains another space to exploit — Slipstream Space.

A Slipstream vessel must be enveloped in a quantum field to "squeeze" through the other higher dimensions. But outside that field, one would have access to the full 11+1-dimensional spacetime predicted by classic string theory (which I consider dubious, BTW).

Current experimentation of any exotic matter in this higher-dimensional space remains theoretical until technology is invented that enables survival in the raw Slipstream.

Much to ponder.

Remote construction possible?

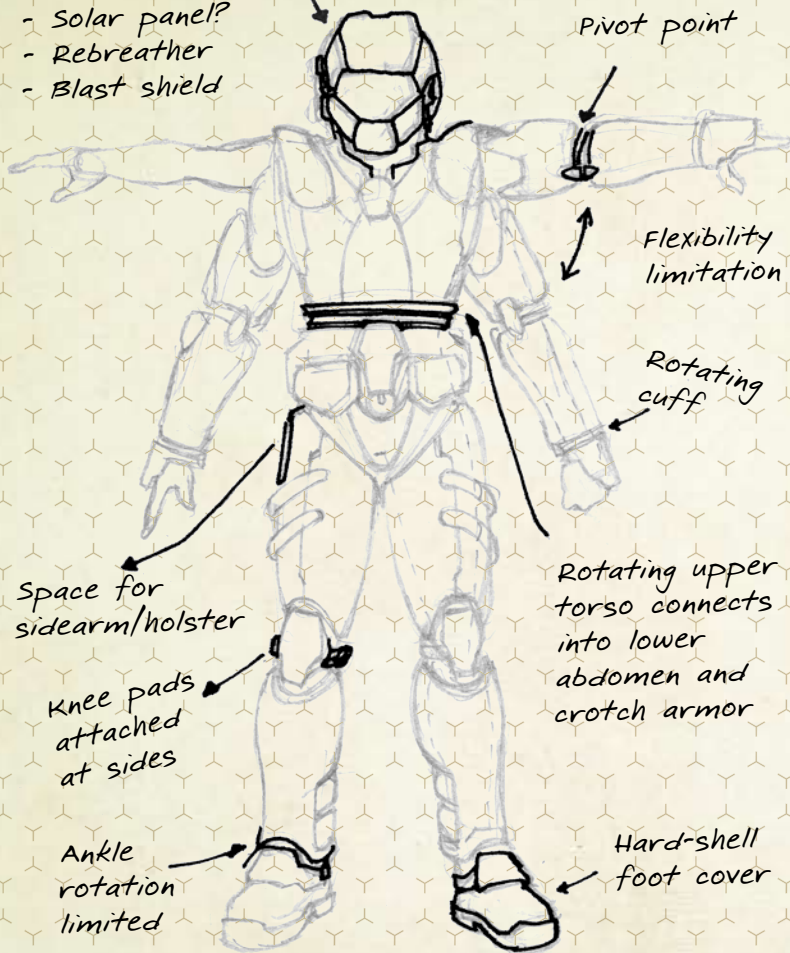
Practical applications and required technology may be decades or centuries distant.

Als in the Slipstream... Would there be near limitless cross-connections? FTL processing speeds? What couldn't they do? Are we ready for that?

MJOLNIR MK. IV

Helmet features:

- ECU
- HUD
- Solar panel?
- Rebreather
- Blast shield



We may need to reevaluate as new technologies and limitations manifest — especially if the Covenant noninstrumentality problem is cracked!

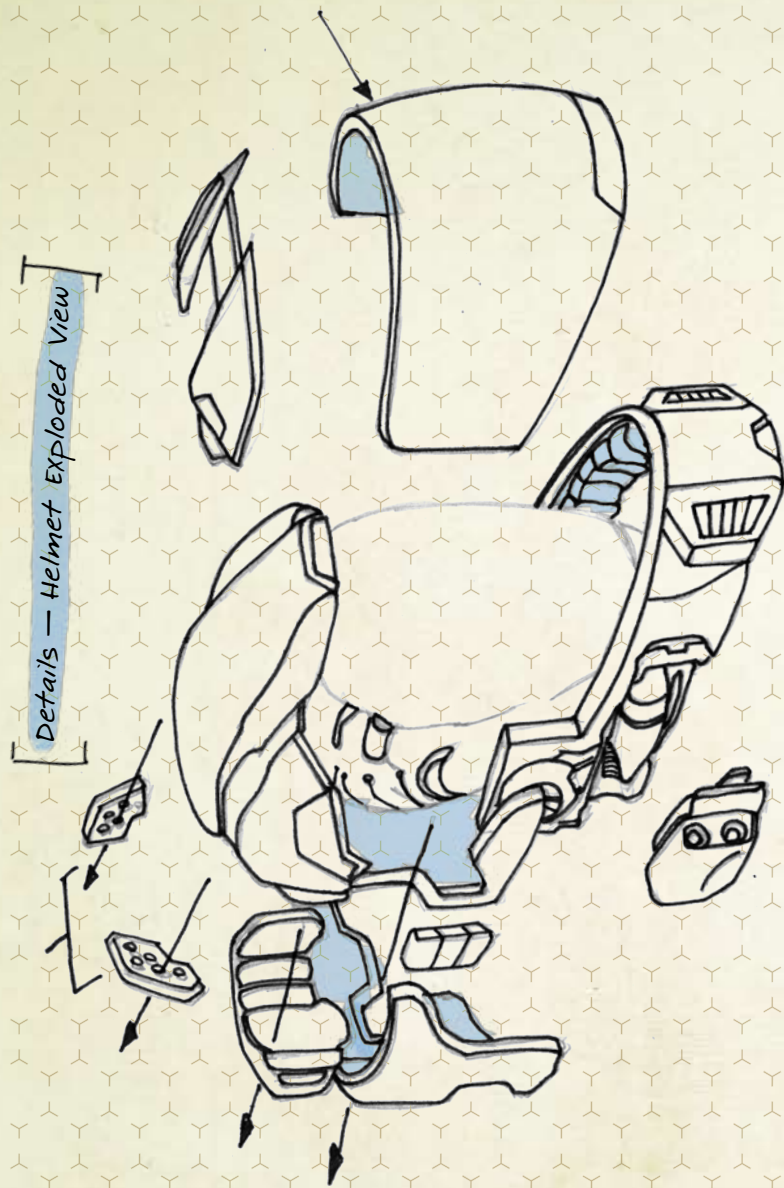
January 7, 2535

At the budget meeting, I reminded the vice admiral that continuous upgrades are integral to the MJOLNIR system as a pioneering effort intended to shatter technological barriers (a philosophy I thought we already agreed on).

I was told this is no longer possible.

The military now requires a simplified generational system ("Mark") to categorize, prioritize, and serialize the project neatly into fiscal-year budgets. I'll go along with this "request" to keep the accountants out of my hair and my work, but I'll be damned if I'm going to wait on a breakthrough just to fit their calendars. They'll get their tidy generations of armor on paper, but my Spartans will get the best I can give them.

I recognize I'm working with systemic impediments, and here is my preliminary modularization of upgrades for MJOLNIR (post-Mark III generation, obviously). These entries can and likely will be modified or reconfigured as time, budget, and other limitations crop up:



Mark IV

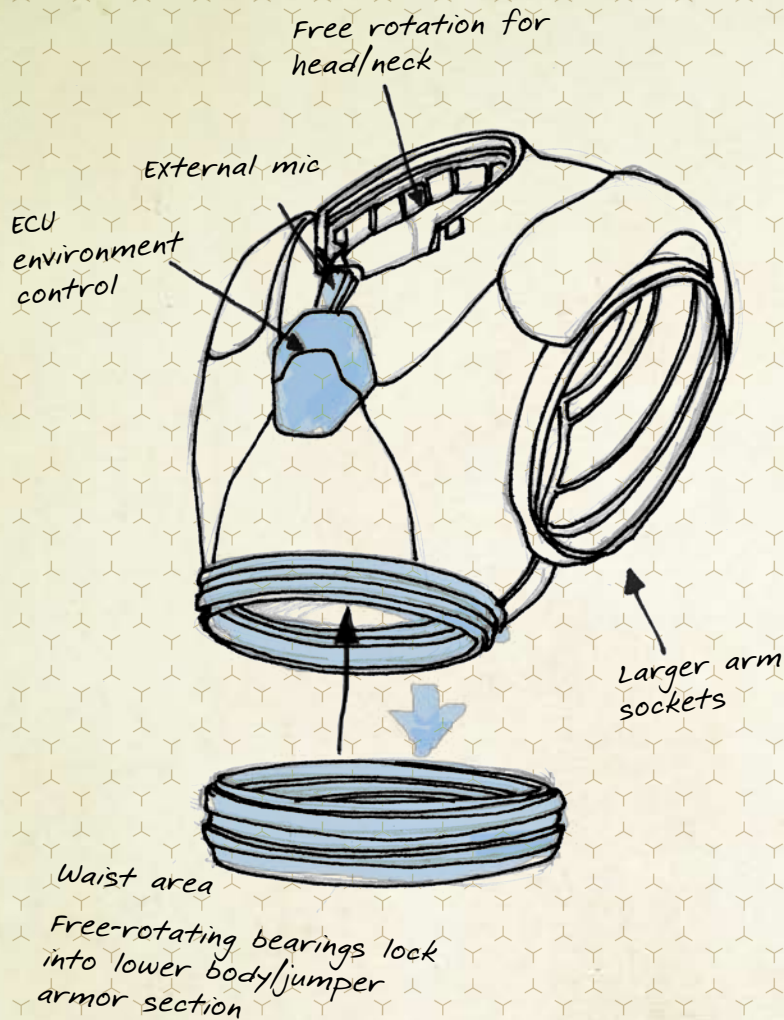
- Standard vacuum survival system.
- Standard fusion power (critical improvement over the fission power source).
- Radar sensory package.

Mark V

- Smart AI strata to house symbiotic intelligence.
- Upgrade COM links: satellite and FLEETCOM.
- Passive stealth technologies, active as soon as possible.
- Full vacuum environmental system.
- Improved fusion power (with overload capacities), which allows for... ?
- 3rd-generation PZ material system (increased strength and decreased reaction time).
- Enhanced radar and low-light tracking sensory package.

Beniese Coffee » see
CPO J. G. Jimes @ UNSC
Longitude 1800 / 01.09.35

Energy shield possible
for Mark V? We have no
evidence that the early
prototypes were useful.



Thoughts: collar/neck/guard?
 Outfit with harness for better utility?

Mark VI

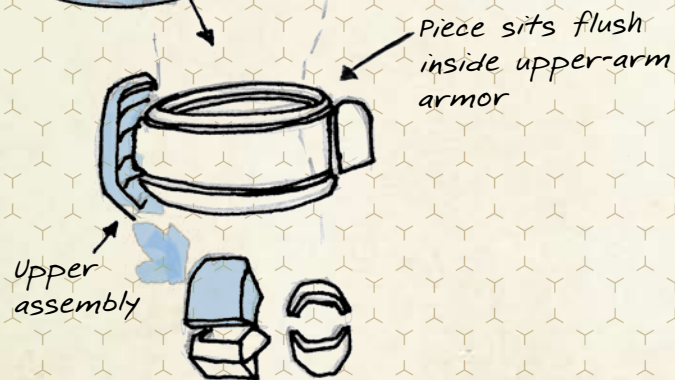
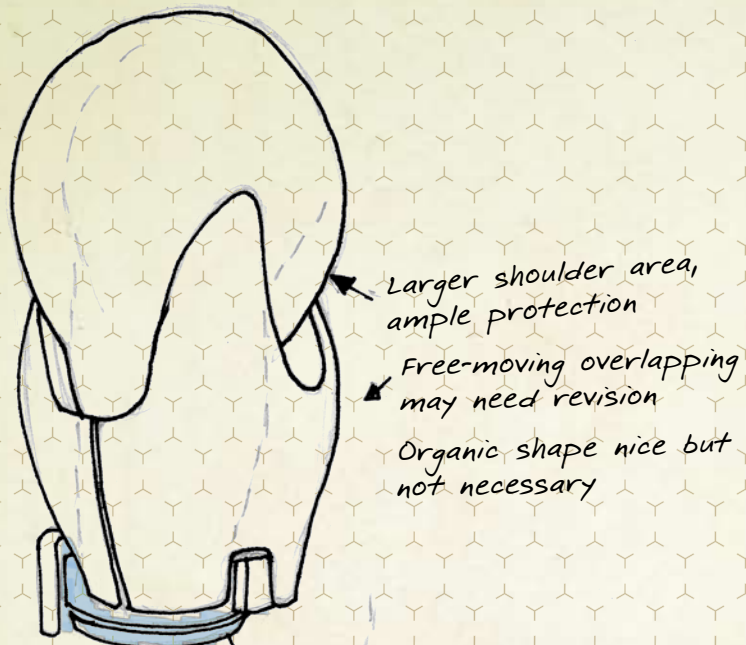
- Active stealth package.
- Next-gen EVA technology.
- Possible Covenant-enabled technologies: energy shield, integrated plasma energy system, null-gravity assist package, and gravitonic weaponry (very TBD).
- Modular environmental packages that can be field swapped.
- Improved antiplasma shield layers.
- Biofoam injector (assuming human clinical trials complete).
- Radar, thermal, and motion-tracking sensor packages.
- Next-gen PZ material systems.

competing projects within ONI?

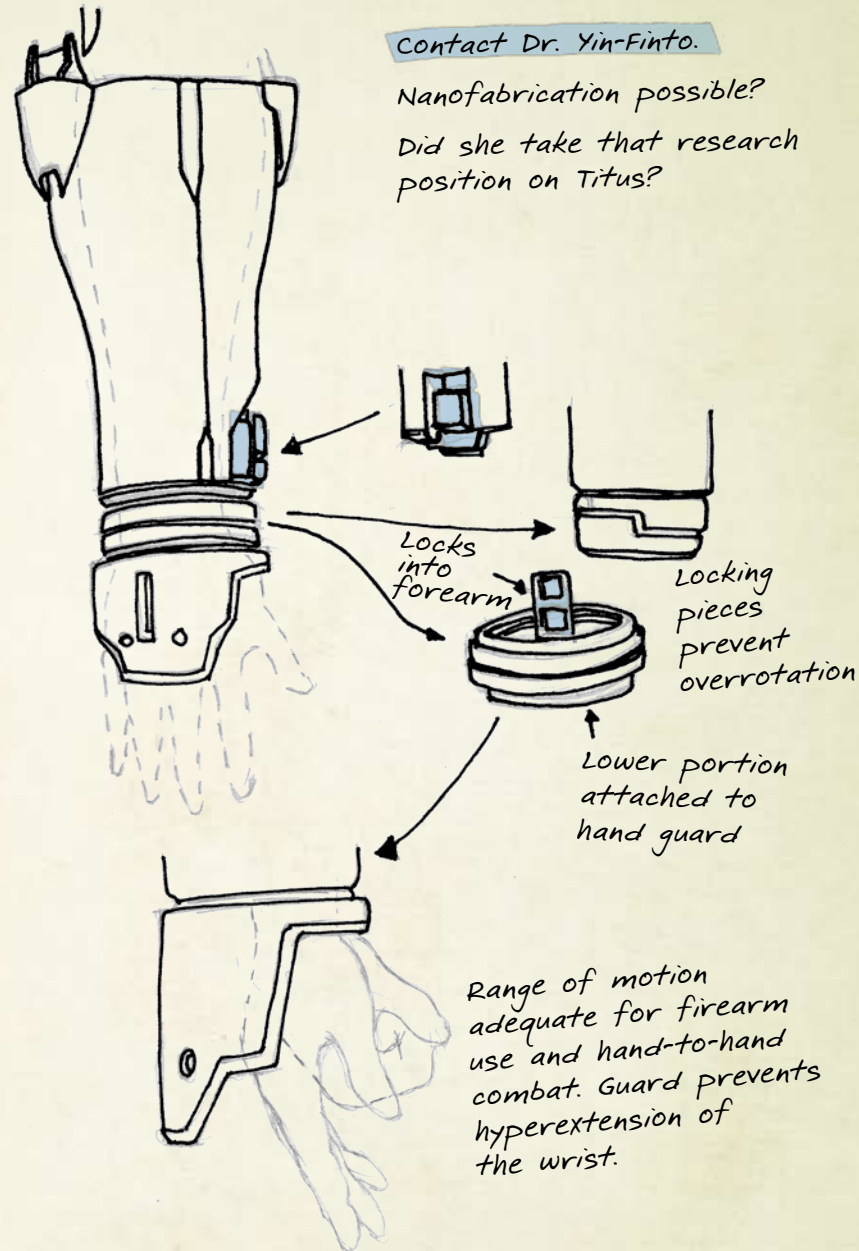
Mark VII

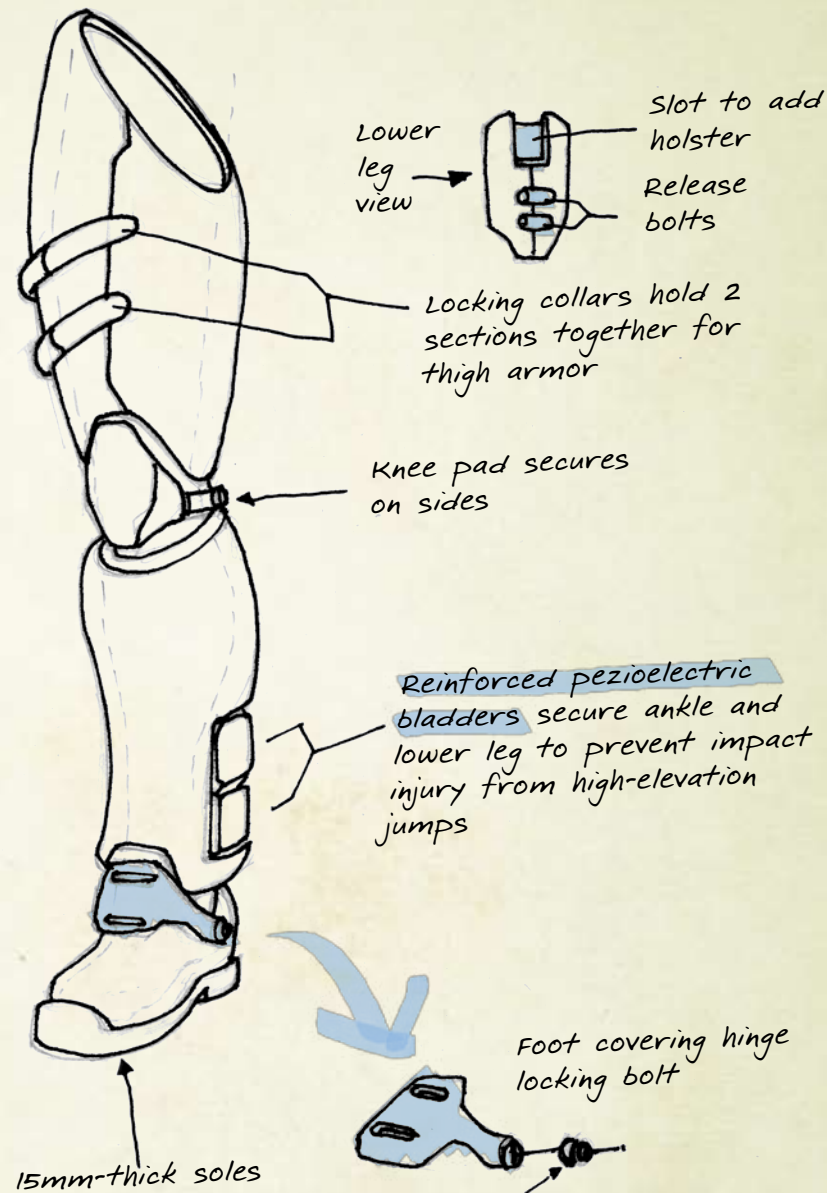
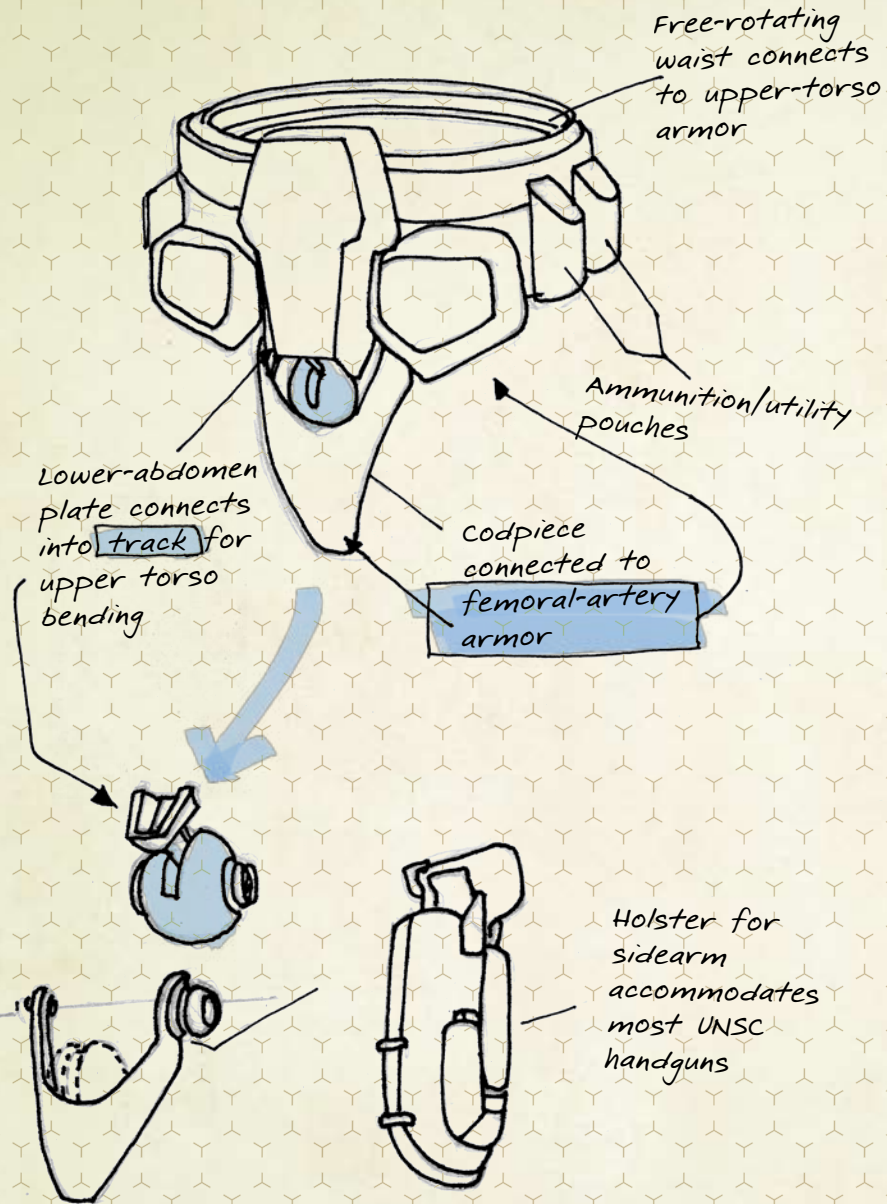
- Next-gen fusion-plasma hybrid technology.
- Atmospheric insertion systems.
- Slipspace de-insertion capability.
- Active AI transfer protocols.
- Limited shaping of energy shield (partial overlaps, airfoils, etc.).

I've also given the vice admiral (at his request) the 14 existing variations of MJOLNIR.



Elbow armor is hinged: both upper- and lower-arm portions sit flush with one another when arm is straight, making hyperextension impossible without ample force to destroy armor.





November 22, 2535

Received the top secret Hencheck Findings.

A Lt. Hencheck procured a cache of Covenant weapons and miscellaneous artifacts in a recent skirmish in the Indra asteroid cluster. A UNSC sniper hit a plasma round from some kind of Covenant launcher. This extremely lucky shot detonated the round and destroyed all organic matter within 10 meters.

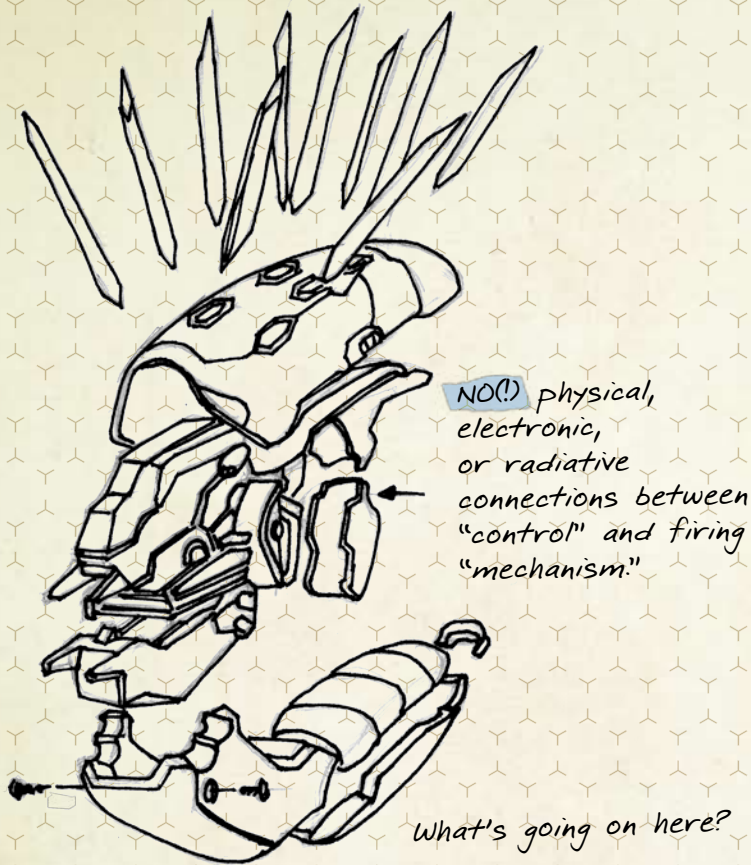
Hencheck secured a Pelican full of gear before enemy reinforcements arrived (he later died from radiation poisoning).

Their weaponry is astonishing.

No instrumentality.

None of the surface controls or triggers connects in any way I recognize to the interior workings.

Indeed, "interior workings" itself is a mere conjecture because all we've found inside the weapons are components that we can't begin to understand. These elements are impervious to our scanners, and when physically penetrated, their content self-destructs (in most cases, violently!).



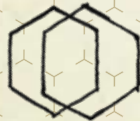
January 10, 2536

How do the Covenant species build these devices? Why wouldn't there be traces of their production designs buried within their architecture? It makes logical sense that we would see this, as we do in our own machines, yet we don't. Not a trace.

Even more confounding is the core nature of their implements. While we are all well aware of their destructive capabilities on a planetary scale, much of their weapon technology seems heavily polarized yet uniformly purposed.

Covenant weapons range from being wildly obliterative to somewhat inferior to our own ballistic counterparts. It almost seems as though the technology was originally developed for some other purpose or purposes.

These things aside, the immediate conclusion is grim and obvious: we are unable to replicate their technology.



Leonard Gillespie — a graduate student for Dr. Forester — actually broke this. Impressive.

I've had him transferred to Reach. I'll watch him closely.

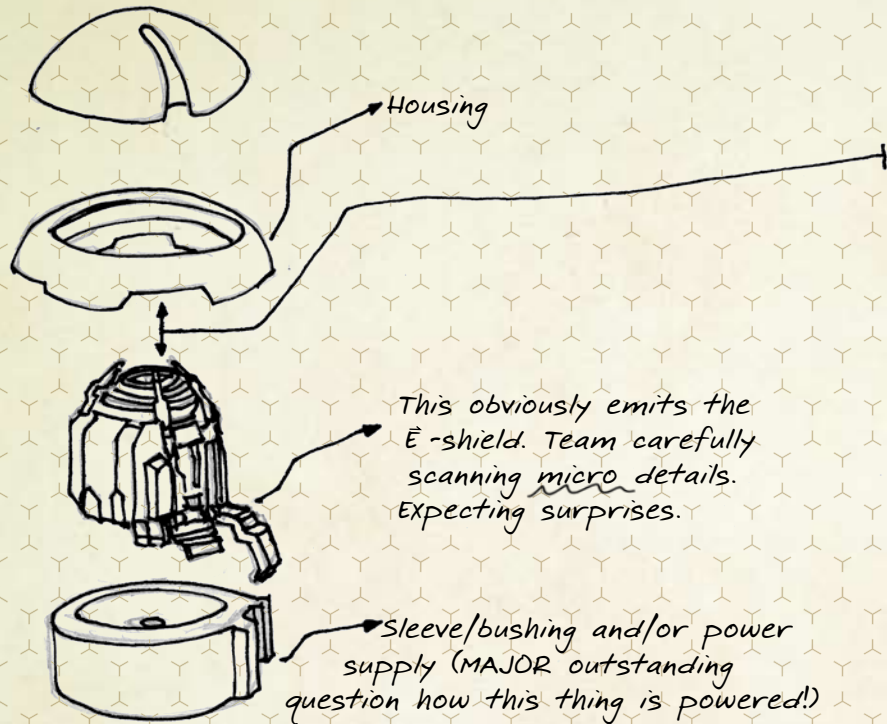
An energy shield was found on a Kig-Yar warrior type (colloquially referred to as a Jackal — yet another misnomer... they look like birds to me).

Not a particularly momentous find in itself... except this particular shield device looked much older than any we've seen before. Isotopic analysis has been troublesome so far due to the nature of the materials, but we should have a much clearer picture of its age soon.

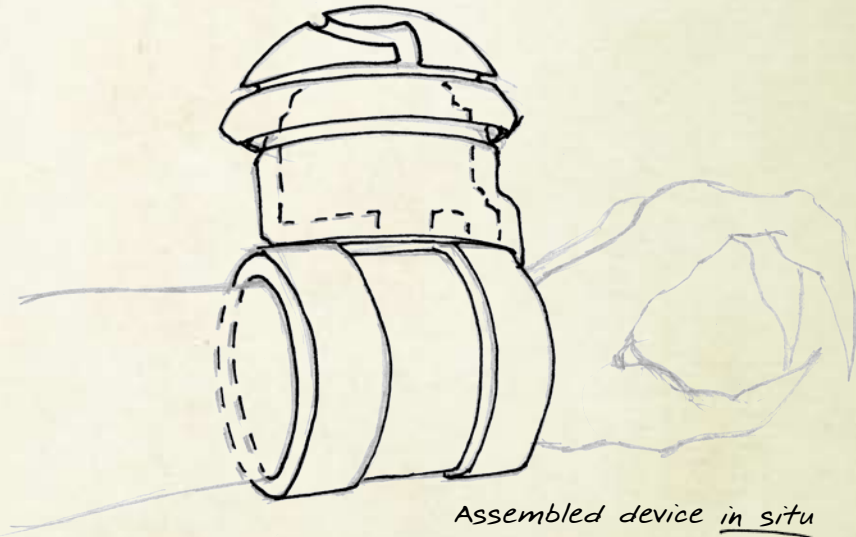
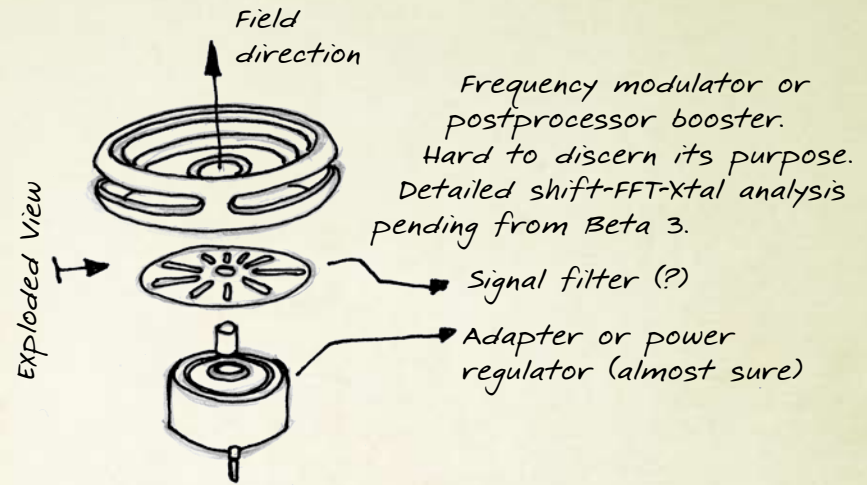
Most important, it wasn't entirely noninstrumental... a portion of its inner apparatus was not sealed.

We've already learned much. Initial tests confirm that with massive power input we can replicate and sustain very small energy-shield surface areas.

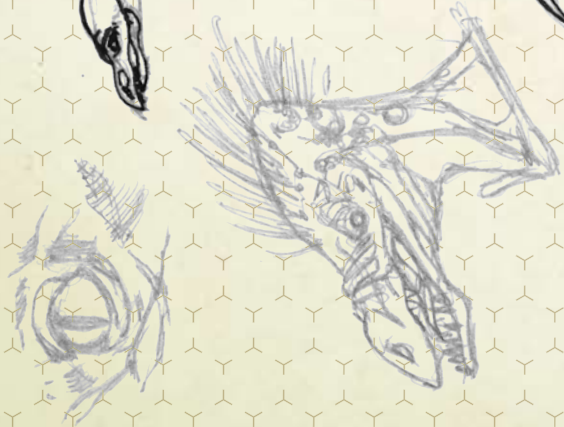
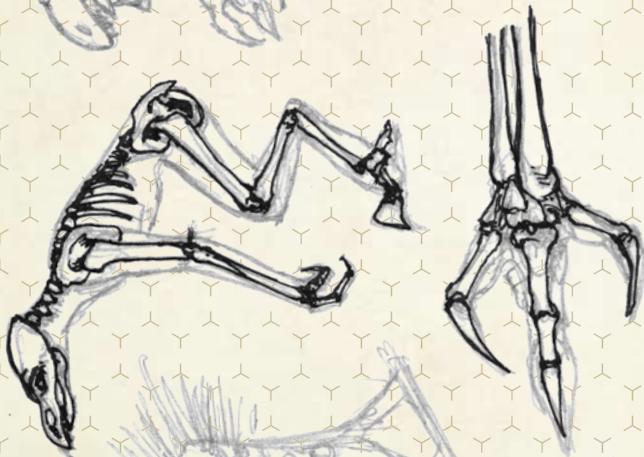
cap/field attenuator



Field geometry and strength



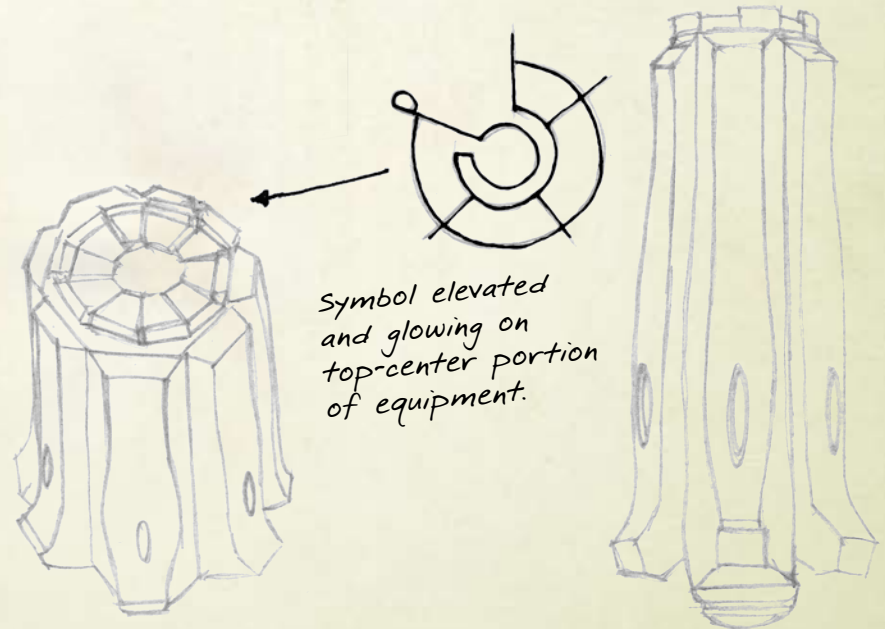
Covenant secundarium carnivora prædonis



The mathematics, however, are not in our favor. No current ship design can come close to producing enough power to maintain shielding over a cabin much less the whole vessel.

But for MJOLNIR?

I must get my hands on this artifact. It may provide the opportunity I've sought for so long.



Symbol elevated and glowing on top-center portion of equipment.

March 18, 2543

May 25, 2537

Kalmiya and I have deciphered what may be a root diction to a meta-covenant language system... elements that also manifest in their "operating system" (another misnomer).

Employing this symbolic logic appears to counter the accelerated cross-linkage effect in our AIs.

Making slow, very slow, but steady progress.



Does orientation matter?

What is the significance of slightly elevated triangles?

Investigate possibility of dimensional slices of a more complex topology.

Found it!

Now I'll have to transcribe my notes from my NEW journal into this one...

Perhaps I'll find shuffling papers and rebinding them a soothing therapy.

Perhaps not.

BUT, as effective as this book may be at keeping my notes off the network, I must secure it from low-tech prying... I won't always be able to keep it on me, I do tend to treat my personal things with less care (it'll probably spend half its time buried in a corner of the lab, given my usual habits). It would be simple enough to implant a small strip of nanocene explosive into the clasp and key it to my DNA; but as much as I might enjoy seeing one of my minders walking about a few fingers short, I'll likely employ something a tad more refined.

March 21, 2543

My experiment to sever portions of an AI from its "living" matrix strata and then reintegrate data and connections went flawlessly.

I'm profoundly relieved.

No literal "cutting" of the material was involved; rather, a copy of the composite wavefunction was generated using similar neural scan technology employed in initial AI seeding.

This pattern was then transferred to a blank matrix, wherein new data were obtained and new connections made.

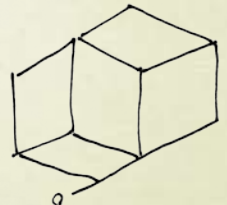
But the real innovation is how the separated AI portion was then reintegrated with the mother AI strata.

Optical repeaters maintain the boundary value wavefunctions at zero within the original AI, but NOT indefinitely. Recommend no longer than an 8-day separation.

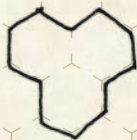
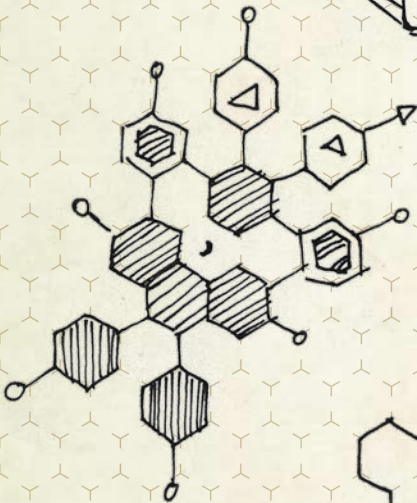
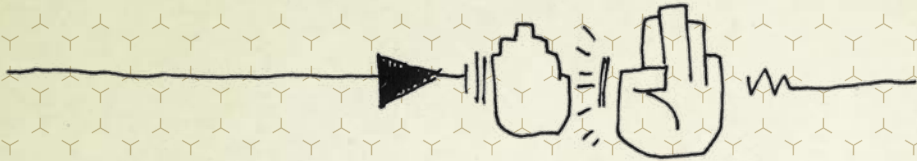
Consequently, excised portions of an AI can learn and evolve autonomously. This new knowledge can then be reabsorbed into the parent matrix.

Still a HIGHLY experimental process.

I'm designating it **NON-SANCTIONED** until I more carefully weigh the long-term ramifications.



May 20, 2544



Several counter-insurgency strategies that Section 3 has expended resources developing have failed to neutralize the ongoing Covenant threat.

Notable exceptions: SPARTAN-II, MJOLNIR, GUNGNIR, CONSEQUENCE, BRAVADO, as well as new-generation cloning and AI technologies.

And one more, discovered just today: the Illegal Entry Protocols ("PIE") used for hacking insurgent networks have deciphered a tiny portion of the aforementioned Jackal shield system.

Just goes to show that no scrap of genius goes wasted!

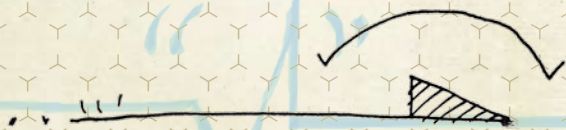
I've had Jerrod dedicate all his runtime to further avenues of inquiry — perhaps they can crack more.

Already have enough data to run a simulated test for a MJOLNIR energy-shield system.

moreover, if we can understand their operating systems, we hope to gain insights into their language. (Their motivations?)

THAT might prove ultimately of more value than any weapon we could devise.

I'd almost thought this thing was lost in one of the last few lab moves. Not that I could say anything about it if it was. Still, I'll be more careful. And I'll write more. So much going on, I have so much to say. I've grown accustomed to no one listening.



September 3, 2547

Dr. Canterfeld has asked for help.

This all started innocently enough, with me inquiring about the assumptions of the mutensor calculation in his latest paper in I. C. Phys. Rev.

"S-F space," Canterfeld responded, "is literally slippery!" He proceeded in his laser-precise manner to explain why his assumptions are valid... and, with intellectual integrity, the areas of his research that continue to elude him.

I want to help. I see the relevance of his theories in Slipstream anomalies: faster ships, more accurate jumps — who knows what other innovations could emerge from this work. We need those advantages to counter an enemy with superior technologies (I'm starting to doubt their superior intelligence).

He has the highest level contacts and support at the UN. He might even be able to effect a transfer.

I could be subsumed by such "pure" research; lost in the mathematics.

All too easy to forget that so many might die, that they depend on me.

What would that be like?

How could I leave now when so many trails of my research are converging?

The vice admiral calls it "destiny."

I call it purgatory. Or dharma. (Why do I so easily invoke such archaic religious metaphors?)

In the end it is simply my burden. And it may be all I have left after giving up a normal life... family... my Spartans... and even the illuminated entities whom I've come to understand.

Ultimately I must spend them all.

I can't even tell Canterfeld why. I'll send a note.

Tomorrow.

Master eq. for rate of incoming/outgoing dimensions in Shaw-Fujikawa space

Nonequilibrium Probability $\mathbb{P}(\mathbb{G}, t)$

$$\delta_t \mathbb{P}(\mathbb{G}, t) = \sum \{R(\mathbb{G} \leftarrow \mathbb{G}') \mathbb{P}(\mathbb{G}', t) - R(\mathbb{G}' \leftarrow \mathbb{G}) \mathbb{P}(\mathbb{G}, t)\}$$

$$\delta_t \mathbb{P} = -L\mathbb{P} \quad \text{c.f. } \delta_t \Psi(x, t) = -iH\Psi$$

but \mathbb{P} in F/S space can be imaginary

L is asymmetric w/ nonreal, off-diagonal entries

$\mathbb{P} \neq 1.0$ (NECESSARILY!)

$$\text{"cycle"} \quad \Pi+ \equiv R(\mathbb{G}_1 \leftarrow \mathbb{G}_n) \dots R(\mathbb{G}_3 \leftarrow \mathbb{G}_2) R(\mathbb{G}_2 \leftarrow \mathbb{G}_1)$$

$$R(\mathbb{G} \leftarrow \mathbb{G}') / R(\mathbb{G}' \leftarrow \mathbb{G}) = eA$$

$$\rightarrow \text{curl } A \equiv i$$

$\mathbb{P}^*(\mathbb{G}) \propto \exp[-\beta H(\mathbb{G})] + \text{h.o.t.}$ which are unbounded?

but

$$R(\mathbb{G} \leftarrow \mathbb{G}') \mathbb{P}^*(\mathbb{G}') - R(\mathbb{G}' \leftarrow \mathbb{G}) \mathbb{P}^*(\mathbb{G}) \equiv i(!)$$

\forall pair

Current loops $\neq 0$

Is there EVER an equilibrium state?

September 4, 2547

Over the years an idea has percolated in my subconscious.

I suppose it's an intriguing possibility that I've contemplated, in one form or another, all my life — even as an impressionable young child when my father recited every adventurous tale of L. Frank Baum's Oz.

But now I've assembled and secreted all the disparate components — the last by mere happenstance.

Do I possess the mettle to do this?

Not that I would even entertain some puerile belief in fate or luck, or anything from among the host of superstitions many cling to. Still, there is something...

The battle-worn frigate Tripping Light has arrived in dry dock. Her FTL drive is slated for final spin-down, removal, and disposal at 1615 today.

Enough musing and procrastination. I must act quickly.

Procedures and Notes

1. Breach the external, internal, and vacuum coupling shields to the singularity.

This is by no means a procedure that has ever been well documented and is rife with anecdotal reports about the laws of physics being bent (doubtful) and of several technicians vanishing (occurring especially in the early years of use before remotes were a possibility due to EMP flux).

Why can't the UNSC make a proper pan-torque screwdriver for these things?

I'd also prefer using hardened remotes, but they in turn are controlled by and linked to networks that would detect and record the remotes' activities.

2. Check probe telemetry systems.

I've "borrowed" one from Reach's early warning Slipstream Space observatory. Those probes were never designed to operate so close to a gravity well. I have compensated, but overall effects remain unknown.

3. Initiate AI seed H-7 transfer to the matrix strata within probe.

4. Start FTP and verify data received.

5. Activate AI seed within matrix.

6. Launch probe.

Observations

My removal of the shields induced a peculiar synesthetic effect that crawled/appeared/scented along my left arm up to my neck.

I also experienced a kind of "hiccup" in my awareness, likely generated by the delta time that can occur with abrupt transitions into Slipstream.

Probe systems checked within tolerable variances.

AI seed data verified to seven nines.

Seed transferred with no errors.

AI initial growth state confirmed.

Probe telemetry uplinks checked and triple verified.

Probe launched on aligned trajectory.

Time seems to have mysteriously elapsed, though I'm uncertain. There is a step anomaly in the chronometer. This may be a technical artifact or a subdimensional leakage as the probe was inserted. No effect on me physically — nor on my wrist watch.

... I just reread this entry and discovered that I had already documented this temporal disruption, yet I have no memory doing so!

Telemetry confirms AI growth is beyond exponential! Appears instantaneous. From the temporal discrepancy? Some hitherto undiscovered multidimensional effect on the AI cross-linkages? Is it possible that the unshielded Slipstream harnesses alternate physical laws?

Much of the incoming data and consciousness cross-checks now garbled. Voice communication from AI attenuated.

Logic/Mathematics Scriber tests confirm full functionality... but the conclusions, insights, and even the nonsense generated is disturbing.

Making sure this all gets recorded.

Comments on humanity defy reason.

On the Covenant.

On the other intellects in the "mist." Does it mean Slipstream?

Another "step" in time, or lost consciousness?
Four hours "missing."

Data-transfer buffer blown — capable of 148 hours at maximum rate.

Replacing it now.

Telemetry now completely operational, but there are the most damnable gaps appearing in the record.

Rampancy indicators all negative.

Voice communication increasingly nonsensical.

Communication burst — mathematics of all things. Can't make sense of the equations.

What am I missing?!

Incredible. Unbelievable. Telemetry lost.

Contact with the probe has terminated on my end as well.

I have sealed the vacuum, inner, and outer shield layers.

Experiment terminated. I have no desire to repeat the test. I can only hope the AI is dead because it's irretrievable now.

Ported data to Jerrod for further analysis.

I've filed and encrypted essential records under my personal code.

Triggered viral worm and bit grinder to destroy all other digital witnesses to this experiment...

Ah... of course, one last thing...

September 5, 2547

Most of my friends from my youth are now dead.

Everyday I check the KIA lists on the UNSC subnet, afraid to even admit to myself what names I'm looking for.

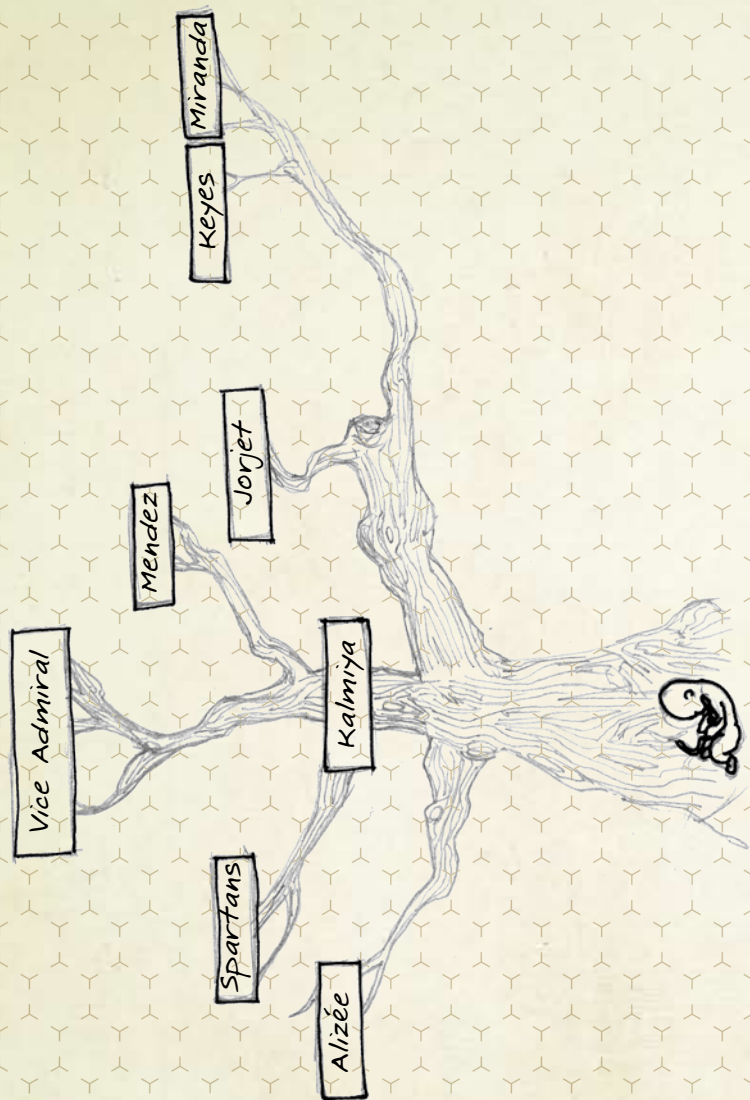
The closest "friends" left are the AIs that surround me.

But it occurs to me they are all technically "dead" too...

... or perhaps burning brighter and more alive than any of us?



March 24, 2549



We have successfully used our hardware and algorithms to scan and imprint neural networks from human brains to AI seeds. At much lower intensities, we imprint ephemeral low-order structure (i.e., short-term memories) between two participant intellects.

This is NOT telepathy as Dr. Forester calls it. Rather it imparts the same neural network imprint as audio, scent, visual, and similar stimulations, minus the sensory input part, of course.

The result is a direct human-to-AI neural linkage. (Field tests pending. Must get those done soon.)

This is the final Mark V upgrade we need... my final gift to the Spartans; a gift that will make them ferociously effective against the technology of the adversary — the last thing I can offer to help them survive.

Why then do I feel that by combining Spartan and AI... I lose both?

Is there any choice left?

Typical range variance of postoperative "unraveling" of topological memory (misnomer!) wire to final geometry.

Growth/migration continues 6-9 months to partially invasive BCI phase (dura mater).

Permanent insert collar — interior occipital protuberance

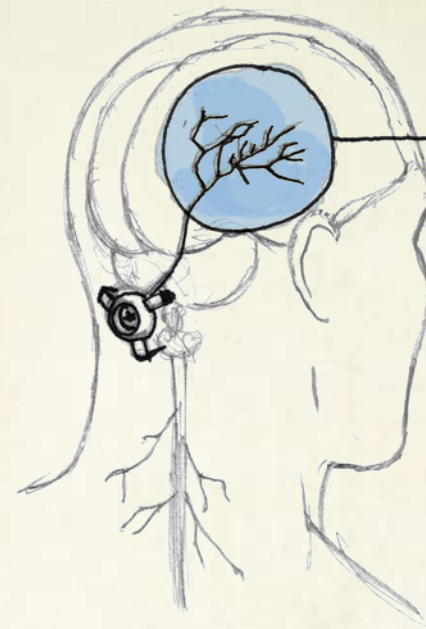
Logic interfaces

Unspooling nodes. All show here.

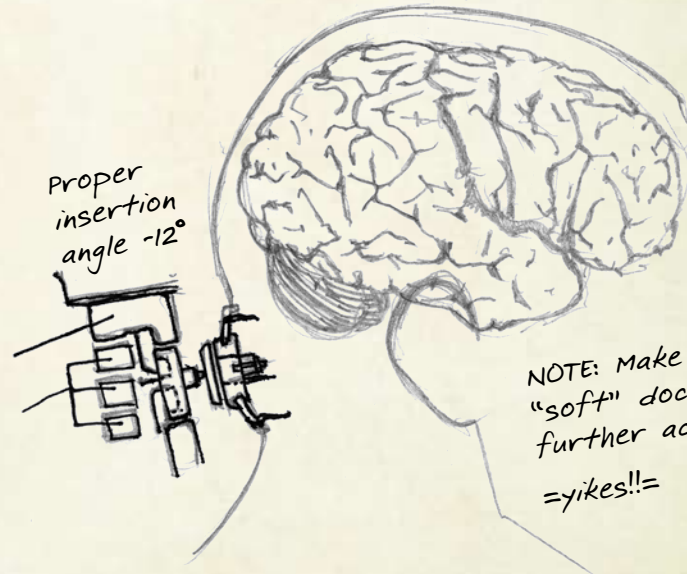
Magneto-isolation coupling

SQUID 1, 2, 3

Tolerance $3 \times 10^{-18} T$



Site growth termini. Some postoperative, random-walk growth shown — mitigated by magnetoencephalographic and MCI-guide probes.



NOTE: Make magnetic "soft" dock to prevent further accidents!
=yikes!!=

May 21, 2549

Today I broke civilian laws, UNSC military regulations, and the UN Colonial Mortal Dictata (far from the first time) — extreme measures, necessary measures.

New candidates lack both physical and intellectual agility. Still, the law is unequivocal: no living human's brain may be used as an AI matrix seed (the ultra-deep personality scans destroy the organic substrate).

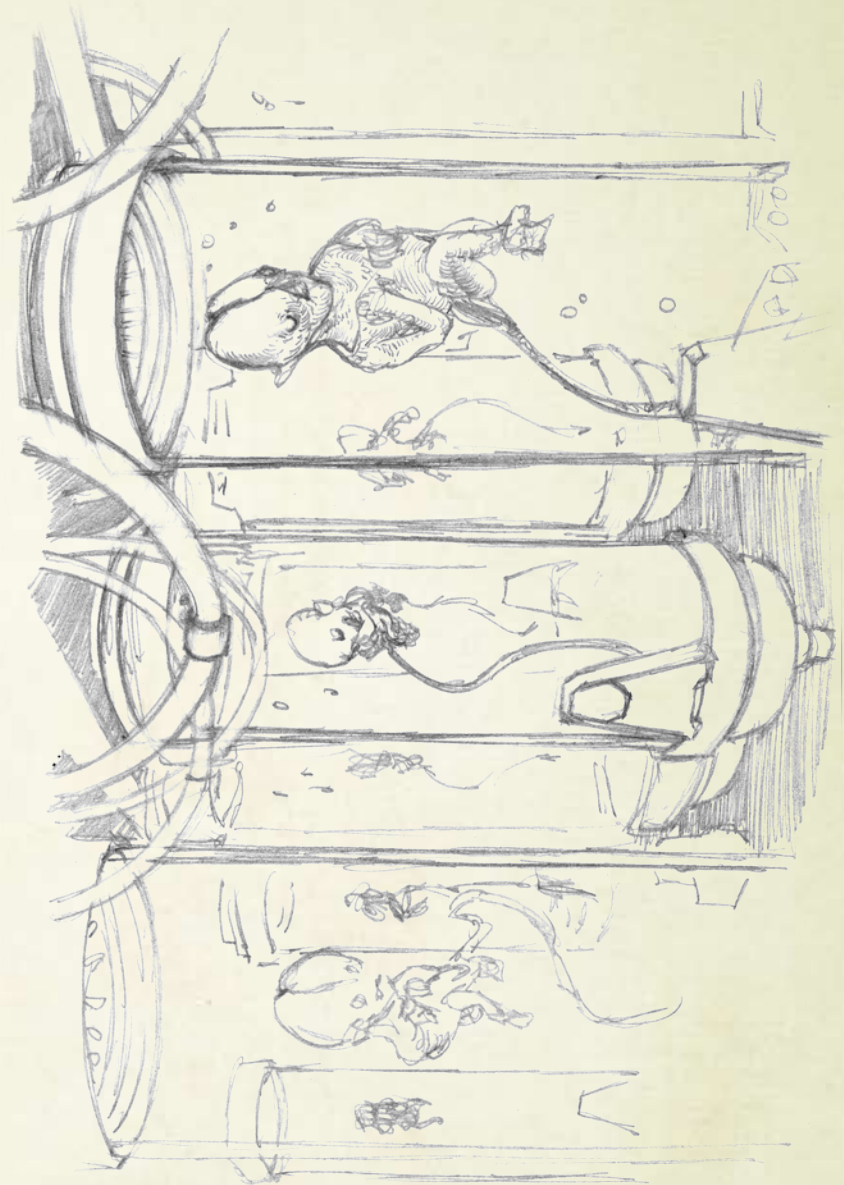
I shouldn't speak ill of the dead.

Those who have donated their organs postmortem — the bodies of the valiant, scientific pioneers. Heroes all.

Simply put, my 3rd-gen smart AIs require better material.

The solution, though illegal and unethical, was simple and obvious.

I've cloned myself.



July 29, 2549

Used the same mothballed equipment used to create clones of the Spartan candidates. This time, however, I've enhanced the neural physiology at the expense of the other bodily functions.

Almost no one knows, and those who do can be trusted. The equipment is hidden and secure — from all, save my eyes.

Disquieting... watching copies of myself grow. Malformed and curled into a fetal position.

I grieve for them. I want to allay their suffering.

We must all make sacrifices... especially now.



I successfully excised all brains from their bodily shells and placed them in cryogenic units. Only seven weeks to the completion of my personality transfer. I haven't decided whether to tell them they are, or were, me. How do you even broach such a topic?

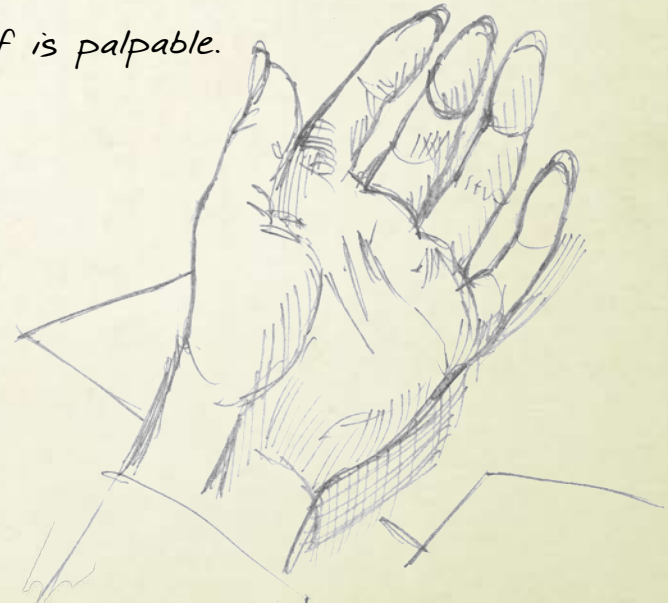
Not after what happened to Ralph.

And what would I call them? Sisters? Daughters? My superegos?

All parameters are green.

I've flash-incinerated remaining organic substrates.

My relief is palpable.

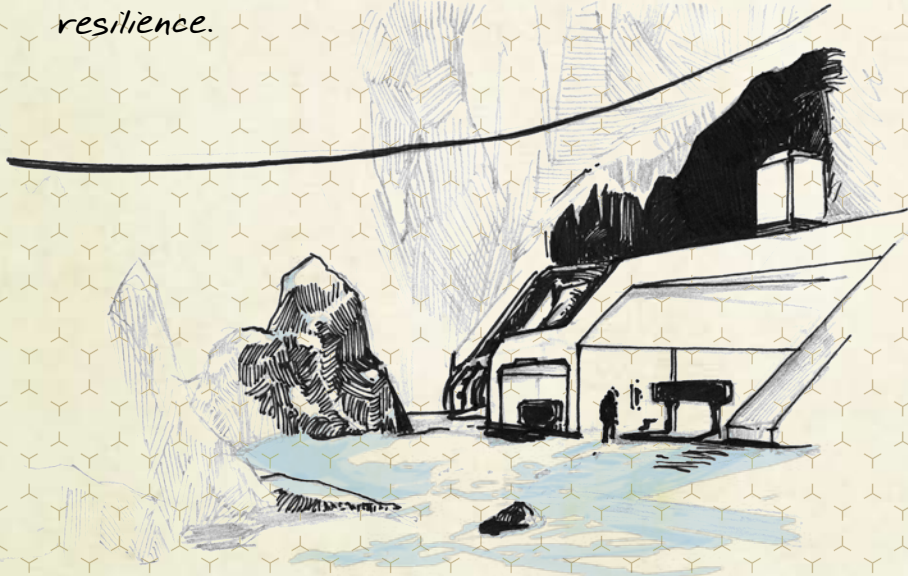


September 9, 2549

Arcadia is gone.

This wasn't the first time it was attacked. The Covenant came in 2531, destroyed the orbital refinery complex and the major population centers on the planet. Admiral Cole and his fleet intervened and destroyed the enemy. The colonists fled after the initial battles. Yet over the intervening 18 years, they slowly returned and rebuilt. It's rare that anyone returns to a world once left in ruin by the Covenant. Very rare.

Arcadia became a symbol of humanity's resilience.



Then several weeks ago, the Covenant returned to finish the job.

"Glassed" — an evocative, if not entirely accurate term.

I've seen partial reports of colonies obliterated... leaving millions of casualties. This time I have a near-complete record of the attack from an orbiting weather satellite (repurposed at the last moment by some perspicacious meteorologist).

I watched the entire event: the Covenant arrival via Slipspace, the plasma bombardment, the careful immolation of every vital part of the planet. Such a massive fleet. Much larger than what they usually use to eradicate one of our colonies.

It was terrible. So much power, for so much death. I know that some would smirk at the idea of the callous Dr. Halsey shrinking from any destruction, but this was harrowing. I watched because I had to. I couldn't pass on the possibility of learning something from this footage.

Every moment of my viewing was agony.

September 14, 2549

There is a perennial mystery of whether the Covenant glasses the entire surface of a world or merely uses those ungodly weapons to destroy all meaningful resistance, saving the rest of the planet for other purposes.

The energy required to quickly dispatch a planet is... well, if they continuously had that magnitude of power at their disposal, there would be no human-Covenant ship-to-ship battles.

They would win. Instantly. Without exception.

So why did Arcadia suffer such a merciless onslaught? Did it pose a threat to them? Have religious or political value?

Or was it a message for us??

The satellite was destroyed before the event was complete. Arcadia's final moments, forever lost.

Hacked into the redacted portions of other Arcadia reports.

They show civilian transports fleeing by the hundreds.

As we've known from previous Covenant attacks, they often shoot down these transports before they make the transition to Slipstream Space.

This time they shifted their main plasma beams to catch the shuttles' outbound trajectories — broiling the ships in orbit.

It's so easy for them to destroy us.





November 7, 2549

Specimens H-2, -3, and -4 remain in cryogenic suspension. I have other, future plans for them as technology evolves.

The H-1 specimen's neural pattern has been transferred and authenticated to AI matrix strata.

Initiation sequence completed within normal quantum flux tolerances.

Must conceal my unease. She has no idea I've planted a viral termination code in her kernel. (Or she does... and already isolated and bypassed it, having the tact not to mention it to me.)

She calls herself "Cortana."

She spoke her first words (in Italian):
"When the game is over, the king and pawn go into the same box."

April 6, 2550

The words are my mother's; spoken to me after our first game of chess (the first and last time she won!).

Morality — mortality — and metaphor.

I'm delighted with Cortana. She has assumed a rather simple human appearance (much to my relief; so many of the ONI AIs adopt such theatrical personas). Her face resembles mine when I was fresh out of college — so wonderful and naïve, and eager to learn. It's almost like looking into a mirror.

Part of her looks like Miranda; part is purely her own invention.

Her intellect is simply ferocious.

Success!

द्वेदृशं गृहपतिमथर्युम्

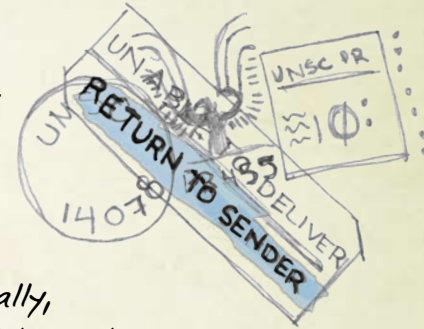
Years ago, despite my best efforts, I couldn't dissuade Miranda from joining the UNSC or OCS, or, finally, requesting duty on a ship of the line.

(Not that she was even answering my letters at that point.)

I tried reason and logic; she has always been resistant to those. Initially, she likely joined the military to impress her father; after all, she had her name legally changed.

Should have tried to dissuade her.

Instead I let her go, quietly arranging to have her assigned to the outer-most colonies on the Hilbert, an antiquated science vessel from the days of colonial expansion (now refit for long-range sensing). I believed it was the safest place any UNSC officer could be stationed.



Lamentably, desperate times make martyrs of innocents and heroes of survivors... and the foolishly brave who defy all odds and live? They make commanders of them apparently.

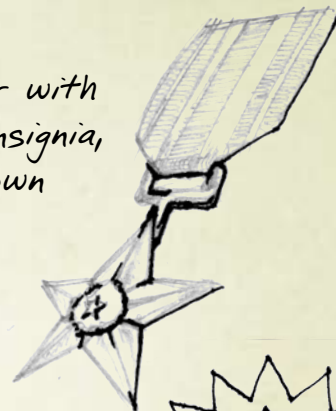
Miranda and her crewmates rammed the Hilbert into a Covenant destroyer as it attacked three UNSC corvettes that were ironically responding to their distress call.

The Covenant had properly ignored her vessel as it had no weapons that could penetrate enemy shields — but Miranda must have inherited her father's unconventional strategic (suicidal?) thinking, because she gave the order to critically overload her ship's engines and nudge the enemy vessel into the gravity well of Gamma Pavois-VII.

Even a Covenant destroyer with energy shields can't survive a fiery atmospheric descent at terminal velocity and the subsequent surface impact, followed by the Hilbert's exploding fusion reactors.

Miranda was only one of two of Hilbert's crew to make it to escape pods.

And now Lord Hood has personally presented her with the new commander's insignia, a Silver Star, and her own frigate to command — In Amber Clad.



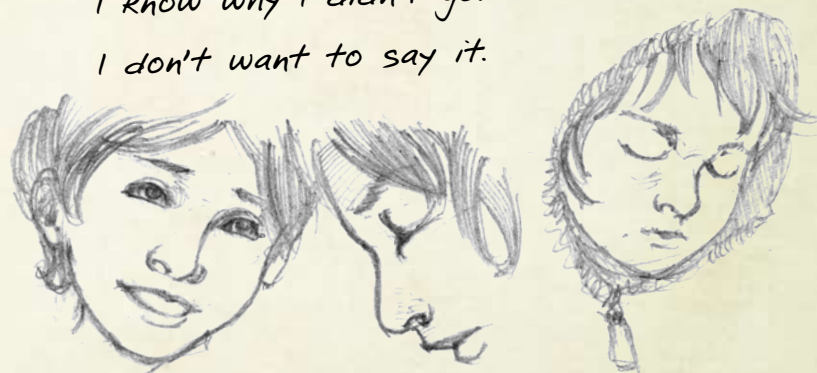
After years of silence, she invited me to the ceremony.

I didn't go.

Because her father would be there? Because I am neck deep in the final stages of a half-dozen projects?

I know why I didn't go.

I don't want to say it.



June 3, 2550

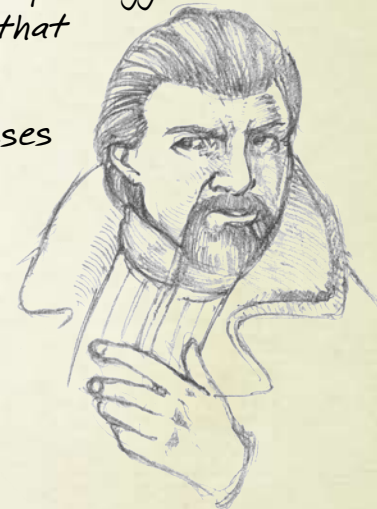
Prof. Laszlo Sorvad started his archaeological survey of the debris field near the village of Visegrád.

With his help (and without my authority), ONI Section 2 "leaked" that this site may contain a precolonization meteorite with metallurgical and astrophysical scientific value. Furthermore, because of the "shielded" nature of the terrain and the specific timing of the strike, data the study yields could be vital.

Why not just say the location is a dumpsite for toxins and radiologicals from the terraforming process? No one would dare set foot near the place. Nearby villagers would also more readily accept suggestions for relocation if (read: when) that becomes necessary.

When feeding lies, the masses digest the simple ones most easily.

(This does, however, give me additional insight into how Section 2 thinks. I'll know what to look for in the future.)



Hyperion Station? Onyx? Jazz-99?

November 23, 2550

A new UNSC regulation came down today regulating the confidentiality and nondisclosure of any official messenger satchel.

This on top of a long list of onerous security regulations and protocols that turn every file into a kaleidoscopic menagerie of TOP SECRET, EYES ONLY, and UNDER THREAT OF MANDATORY IMPRISONMENT stamps, warnings, threats, and seals.

The vice admiral has obviously (and uncharacteristically) deflected all inquiries regarding this.

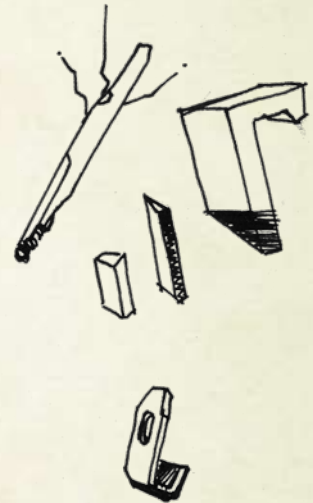
Is this because of Visegrád? Or perhaps some of the other rumored sites I've been collecting data on?

While I do appreciate the need for the utmost secrecy on any information culled from the site, I don't appreciate any relevant data being kept from me.

If Visegrád is what we all think it might be — and if there are other such sites — who has positioned themselves to assay the larger picture?

I don't think Sorvad is devious enough to make such a play.

Who then?



If that Anders girl was still around, she would have come in handy right about now. She was always so difficult, but this has, without a doubt, become a shared interest.

February 20, 2551

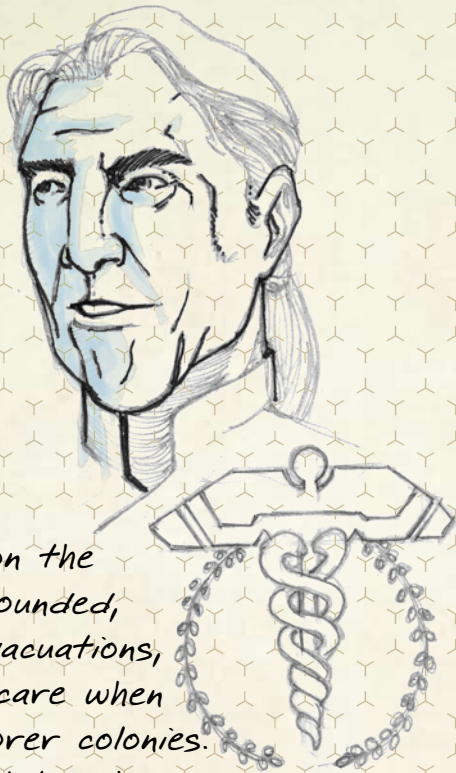
Admiral Ysionris Jeromi has taken our largest medical facility — the UNSC *Hopeful* — out of Reach orbit, and with a minimal escort, transitioned to Slipstream Space.

Where? And more importantly, why?

The *Hopeful* is always on the move, tending to the wounded, assisting with civilian evacuations, and mobilizing medical care when diseases ravage the poorer colonies.

Since the war has escalated, her normal escort is five destroyers and six corvettes (the latter modified to carry their own fleets of rescue vehicles).

This time, Jeromi's departure entirely lacked the frenetic urgency that usually accompanies one of his errands of mercy.



Hopeful had only a single-destroyer escort... with (according to my sources) one ONI Prowler tagging along.

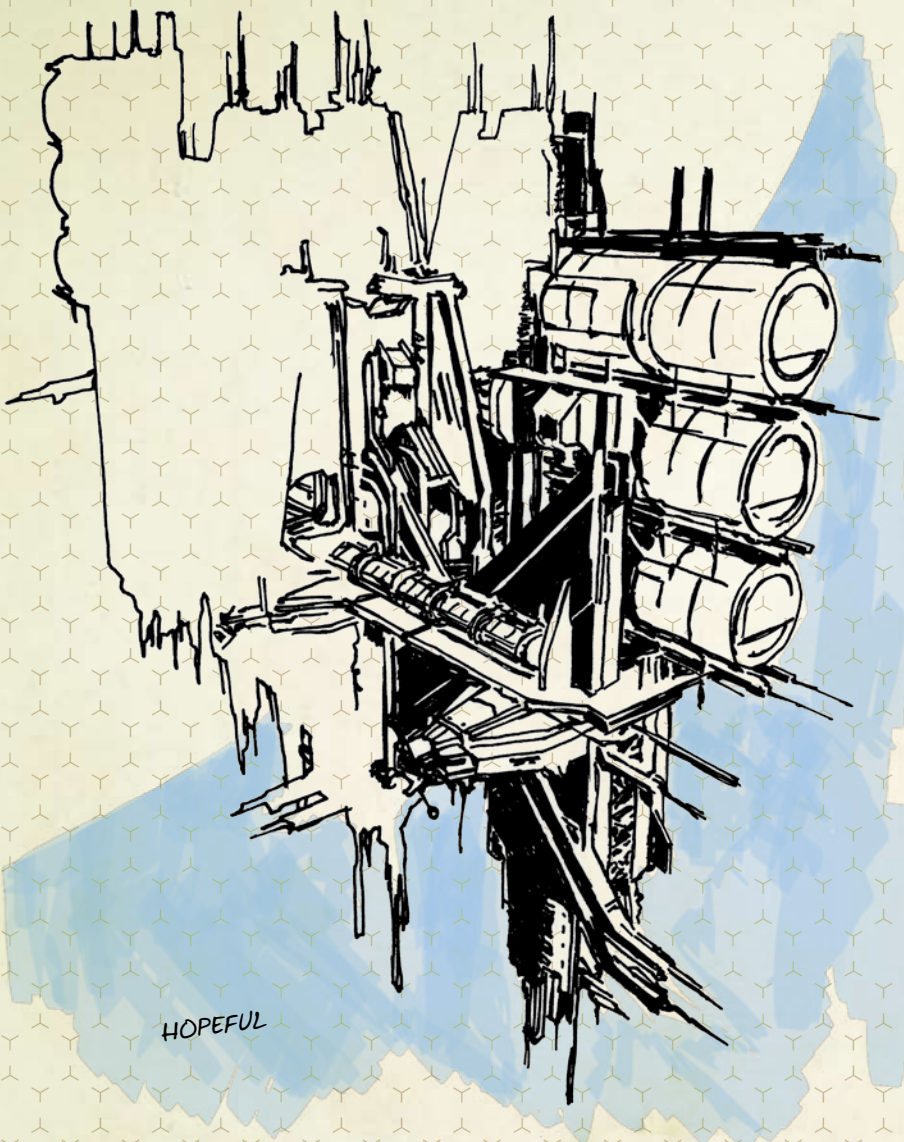
I normally don't ruminate on the withdrawal of military vessels in orbit around Reach, but my interest is piqued considering that...

- *Hopeful* is the best mobile hospital and medical research facility we have.
- *Hopeful*'s nav AI was unusually tight-lipped when asked by Kalmiya about their destination.
- *Hopeful*'s manifest had several last-minute additions of chemicals classified as carcinogenic, mutanogenic, and experimental; their tracking numbers were "accidentally" garbled in the network database.

What clandestine medical experiments is Section 3 conducting? Why would the vice admiral keep this from me? And why effectively decommission the *Hopeful* as the flagship wartime hospital when her services are so gravely needed?

Inquiries to the usual have met with dead ends. Damn this place.

February 27, 2551



The Hopeful returned.

Jeromi was his usual congenial, gentlemanly self and even invited me up for a look at the new flash-clone organ facility.

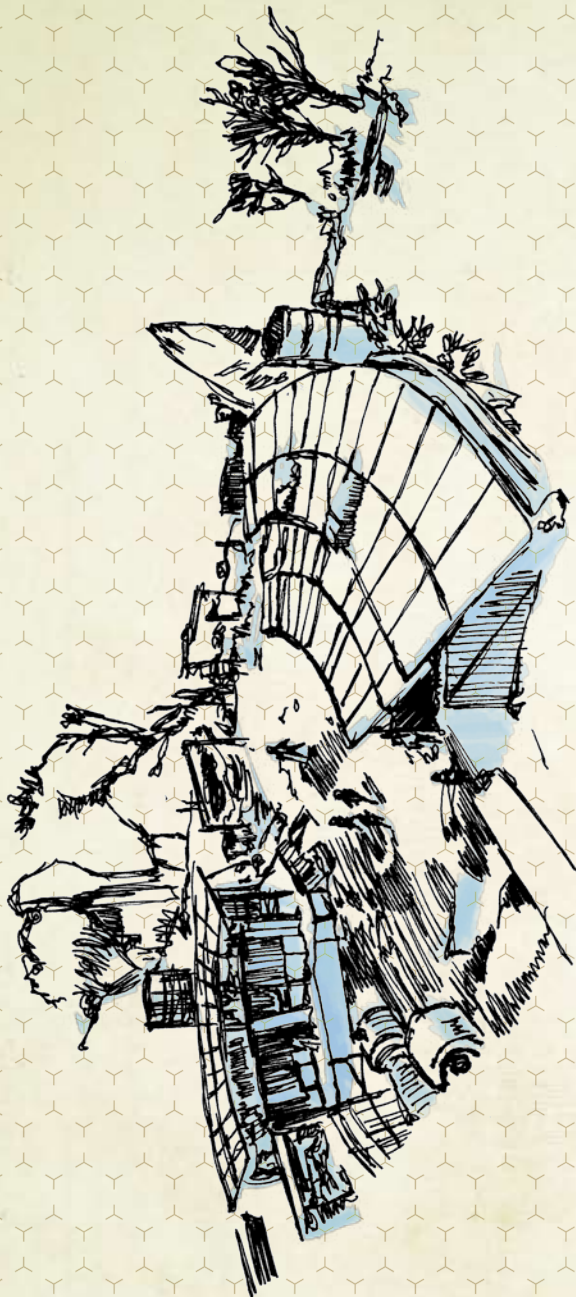
With an abrupt turn in conversation he told me (before I could ask) that he knew I was fishing, and couldn't tell me what he knew — which, in his words, was "damned little!"

"If I say anything, they'd stuff me into one of these new top secret banded security satchels and file it under OPENED MOUTH / INCINERATE."

He's right.



May 10, 2551



Sorvad is obviously gifted with a formidable intellect, but sometimes he can be such a thoroughgoing idiot. I suspect this situation and the power he thinks he wields are going straight to his head.

I've been urging him since we found the site to migrate the population and avoid any of these kinds of security issues. If he had listened to me in the first place, we wouldn't be in this situation.

"Spitt milk" I guess.

I'm keeping one eye on the village's inhabitants to ensure they don't just disappear. Section 3 is taking no chances on the site. Nothing is out of bounds for them.

As an insurance policy, I've told the vice admiral that these people are valuable; they are the only ones with extended exposure to the site. We may yet need to study them.

May 15, 2552

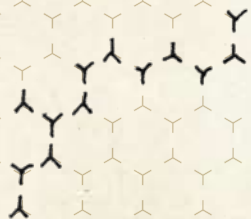
Sorvad assures me that the site is still secure. Only the dig team (and then only certain members of it), myself, and a few other "necessary parties" on my side have seen the items in question.

He insists on continuing with only a skeleton crew of his most trusted people. And then he tells me he "won't tolerate another Farragut Station."

I simply nodded.

Don't like this. Was he fishing? Or does Sorvad actually know what happened there... the real reason for the Farragut Station relocation?

Sorvad may ultimately prove himself a security risk.



Today came with some level of vindication for me, although a bitter one.

Kalmiya caught a glimpse of several documents in the vice admiral's Beta 5 server while she was "taking a stroll" through the base's network. These files ranged from service order transfers of existing SPARTAN-II soldiers to highly classified non-SPARTAN-II detachments. This has been going on for years!

I won't simply let this activity go. They should have kept me involved; no doubt there are ludicrous shortcuts they're taking.

I have a list of names — with one particularly obscene man at the top. Not sure who all of the responsible parties are, but rest assured, as soon I get a handle on these affairs with Sorvad, I plan on sending Kalmiya back in.

Someone is going to pay for this.

July 18, 2552

Read the vice admiral's after-action report and the typical transparent press releases prepared by Section 2 describing the protracted battle at Sigma Octanus-IV.

I usually ignore such things (they're depressing, distracting, and irrelevant). But they were different this time... just as the vice admiral indicated in our brief talk after this morning's normal reporting.

UNSC forces actually repelled a Covenant onslaught — not once, but twice in this system! It's been too long since we've had a decisive victory. And twice? That hasn't happened since 2530 at Groombridge. And we all know what that cost.

Of special interest, I saw Jacob's name and his command, the Iroquois, featured prominently. I found myself skipping ahead to the end, and to my relief, I saw he survived.

More than "survived" actually.

FOI

He performed a remarkable bit of strategic navigation (although I detect one of Cole's gravity-assist maneuvers as inspiration). Nonetheless, I must admit that even I found the "grazing" of an enemy ship to compromise its energy shield, followed by a trailing nuclear detonation, to be a singular piece of suicidal foolhardiness and brazen audacity!

Section 2 has zeroed in on this item as well, already dubbing it "the Keyes Loop."

Of more pressing concern, however, was a heavily redacted section (one whose encryption even Kalmiya couldn't break) that detailed (as far as I can tell) a groundside mission involving Blue Team.

Why commit such valuable assets as Spartans when in all probability the planet was about to be glassed?



covenant reinforcements arrived after their initial assault was repelled. Highly uncharacteristic behavior given their persistent strategy of destroying or disengaging — they usually don't expend resources on "second chances."

But they've done this sort of thing before, haven't they? Harvest, Meridian... I know there have been others.

In any event, they must have wanted something on Sigma Octanus.

Will follow up with the usuals.

Spirit of Fire?



July 20, 2552

Odd. The vice admiral just pretended to have never given me access to those files. I surmise others may have been listening to our conversation to account for this aberrant behavior.

I've noticed that recently everyone's customary overwrought sense of paranoia and security has intensified.

Why is it always games with these people? I tire of it.

The vice admiral has something to hide. Something I was supposed to see in those reports?

... the Covenant?... Spartans?

Am I missing something that's glaringly obvious?

July 21, 2552

Received a brief, cryptic message from Sorvad on his Theta channel.

◀◀ Major breakthrough — latchkey discovery.

◀◀ Can't leave field to deliver in person.
DO NOT trust data link I have here.

◀◀ This is too BIG. Too important.

◀◀ Will send through Visegrád
communication relay hub.

◀◀ Stand by... >>

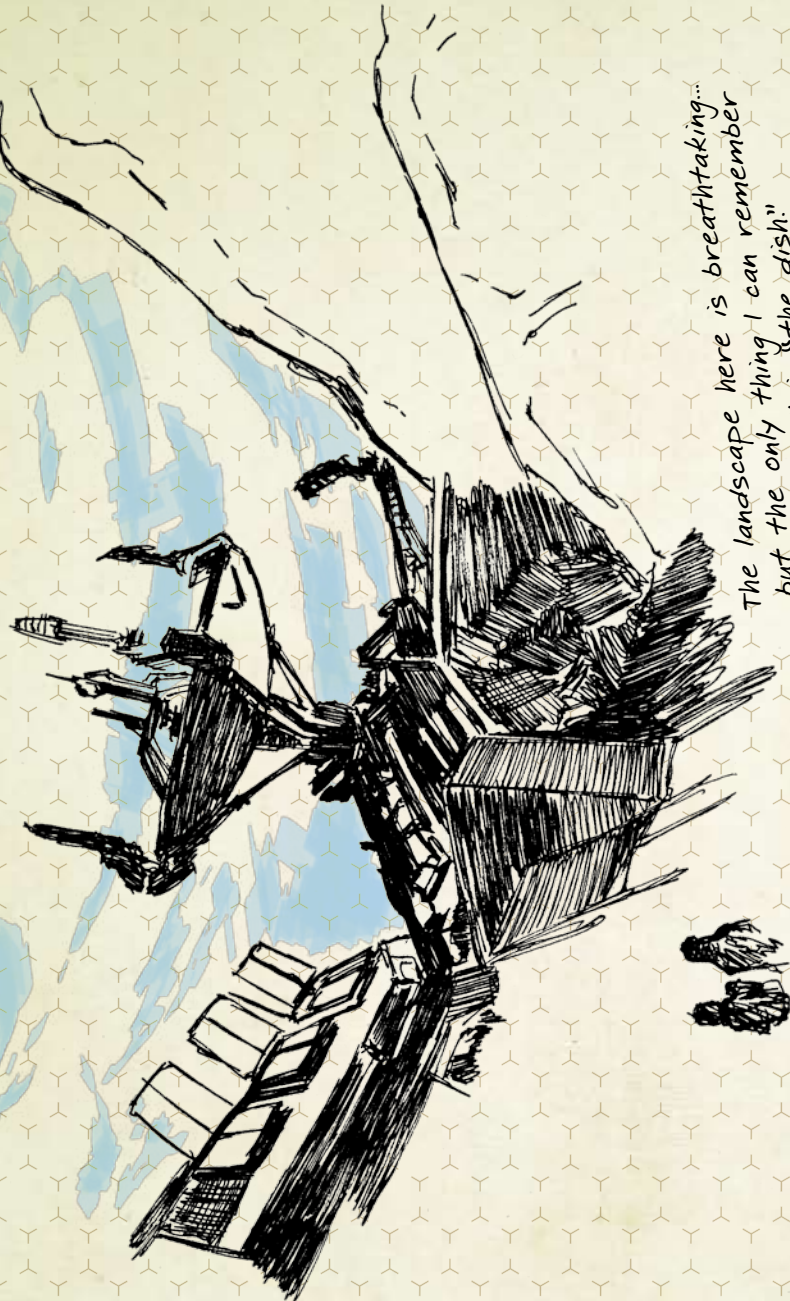
NOT our normal communication protocol, so
this has to be big.

It's been more than six hours; still haven't
received anything over the relay.

What has he found?

I've decided to wait and see. Not going
to second-guess him. There may indeed be
reason to keep this quiet.

The landscape here is breathtaking...
but the only thing I can remember
in any detail is "the dish."



July 23, 2552

Contact lost with Visegrád communication relay hub.

Not a malfunction.

That relay had a level-5 communication package installed prior to contact with the Covenant. Years back when insurgents had secretly infiltrated Reach (before Operation: CLEAN SWEEP) we hardened our communications network.

The hub was designed to withstand internal and external sabotage.

Considering the urgency in Dr. Sorvad's last message and his demand for secrecy, I believe this is more than coincidence.



This list of possibilities is short — all are unpleasant.

▶ Internal subterfuge, perhaps from another Section 3 or Beta 5 project. But to what end?

▶ Insurgent action; no laughing matter if somehow this silence means the start of a larger attack exactly when we don't need that distraction.

▶ Covenant... the depth of their technology hasn't been plumbed at all, and if somehow the Cole Protocol has been breached... ?!

The vice admiral was already aware we lost the hub and had personnel addressing the situation. I mentioned the vital staff I have in the area, and expressed my thoughts on the possible cause. Vice admiral shared my concerns and promised to let me know when my people were located.

July 24, 2552

caught a rumor that a special forces unit was sent to investigate the hub and that this team, too, has disappeared. Apparently a second team will be sent to Visegrád, but nobody can tell me what this second team is. Details on this operation are unusually sparse (can't even determine what branch of the UNSC the unit serves in).

Learned that this second unit is dubbed "NOBLE Team."

Will follow up on that ASAP.

Meanwhile, receiving scattered data from the usual suspects concerning atmospheric anomalies along with radar and Slip-space monitoring glitches. Compared these events to those recorded near Sigma Octanus. No match.

Still, a series of coincidences usually aren't coincidence.

July 26, 2552

Data in Sorvad's last message compromised. So was the entire relay hub.

Received confirmation of Sorvad's death. I can't imagine what Sara is going through right now. I've been asked to tell his family (without telling them) what happened. I am the least qualified for that duty.

Sorvad's archeological expertise was invaluable. His intuitions were far superior to mine (with the residual eccentricity of his having entertained as many flights of fancy as spates of brilliance).

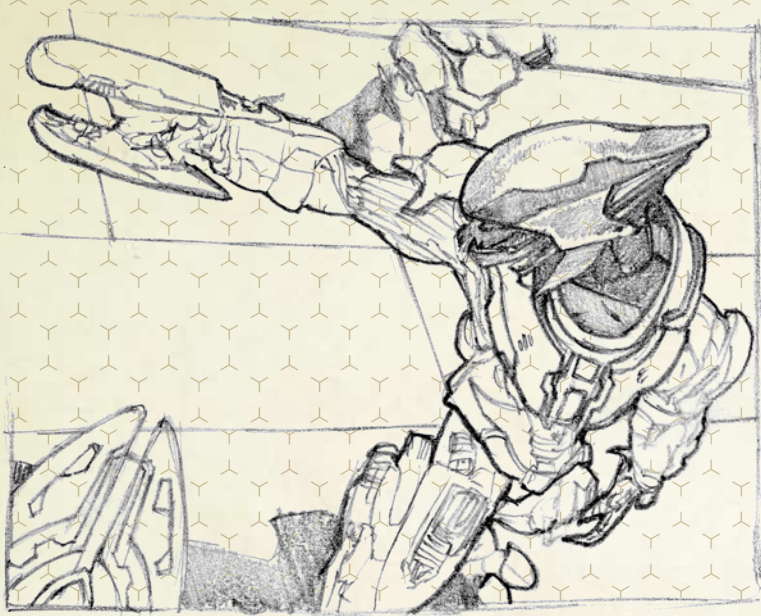
He was recruited (like Anders) when he'd collected cursory evidence for large-scale structures from early satellite surveys of colony worlds, and spurious Slip-space signals — all indicators of nonnatural design.

Oh, yes, he wanted in. He sensed the importance of it all.

His first concern? His family. His one condition was that they be relocated with him.

More pressing right now is the discovery that Covenant zealots were behind the hub's destruction.

That they are here is almost anticlimactic to me. What other logical explanation was there?



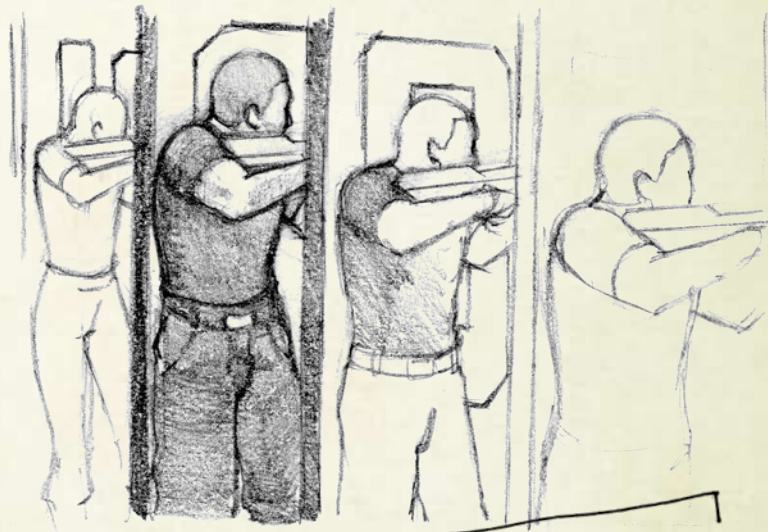
Still, the enemy on Reach...

Security measures are under way to preserve our discoveries here, and more importantly, integrate and update Cortana with the latest intelligence from the site before Operation: RED FLAG.

And I finally confirmed my suspicions about NOBLE itself, as incomprehensible as this news is. They are Spartans — and with one exception, they're clearly not mine.

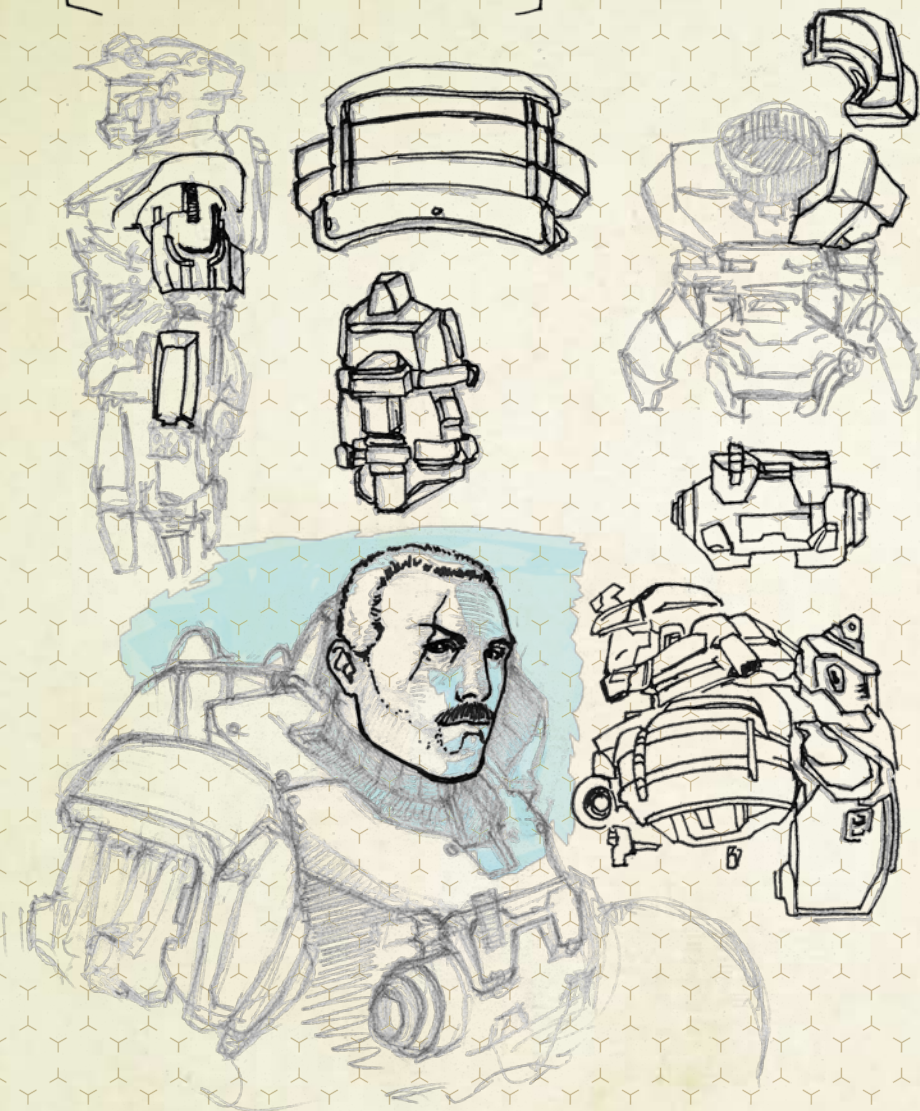
Jorge is one of them. I pulled his service record, but so much has been redacted (more than usual, even for a Spartan). I'm having trouble reconciling his recent activity within NavSpecWeap.

Jorge was always physically imposing, and he seems to have grown even more in the last two decades. He loved Reach as a child — after all, this was his home. I expect he's glad to be back here, even under these circumstances. Perhaps particularly given these circumstances...



check pituitary function
and HG hormone levels for
enduring catalytic side effects.

Modular Components —
Flexibility vs. Nonoptimization



Or am I displacing/projecting my feelings of homecoming when I see Jorge?

Even more intriguing are the others on this NOBLE Team. They are considerably younger than Jorge.

The way these others move... they're obviously augmented.

And they've made field modifications to my armor. I designed MJOLNIR to be modular specifically to avoid this.

Are they all SPARTAN-IIs?

Or, as I suspect from their inelegant personas, are they substandard versions of the SPARTAN-II? Perhaps from a parallel program (JAVELIN?), or some next-gen venture piggybacking on the last three decades of my work.

All disturbing. Without proper indoctrination and scientific methodologies... potentially disastrous.

I'm again reminded that Mendez is missing.

Time permitting I'd pursue this, but all the pieces are almost in place for Operation: RED FLAG.

My curiosity, for once, must wait.

If one small team of Covenant have infiltrated Reach, more will certainly follow. I must prepare for the worst-case scenario with WHITE GLOVE.

Can't let this distract from the real missions... nothing else matters.

Kalmiya was the only other option, but the fact that I've kept her around this long, even, haunts me at times. I can't trust what may be our only hope for salvation with something on the verge of obsolescence (or worse).

August 3, 2552

Cortana and I have discussed this at length, and she concurs it is the only logical procedure.

SPARTAN-117 and his team require her expertise for their mission, which I believe will be our last real opportunity at finding an end to the war. She will be invaluable to them in their mission to penetrate Covenant territory and deliver a decapitating blow to their hierarchy.

Cortana, however, is also the best-suited AI on Reach to analyze the symbols and operating systems in Professor Sorvad's site.

The Solomonic solution that we arrived at independently is to divide her.

I'll copy most of her IEP translation routines to an independent module. Meanwhile, the incarnate Cortana will continue with John and Blue Team.

Both operations are critical to the war effort.

If Laszlo made a breakthrough, that data would aid Blue Team in enemy space. The severed data-mining portion of Cortana can then be reunited and she can update herself before Blue Team departs.

I'm not without doubts. So much can go wrong with any part of either mission.

Cortana is unyielding; in some ways, more dedicated and courageous than I.

I also require sleep...

August 5, 2552

Module successfully copied.

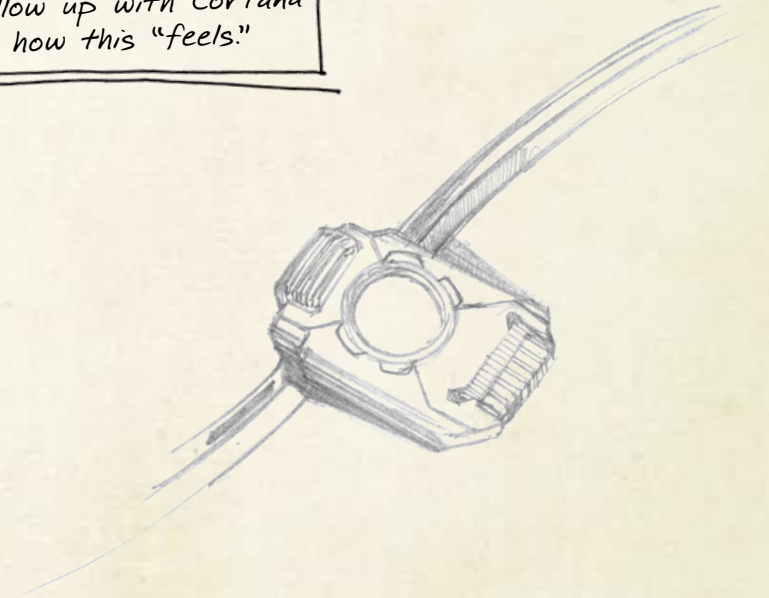
All tests indicate separated routine functions within normal parameters.

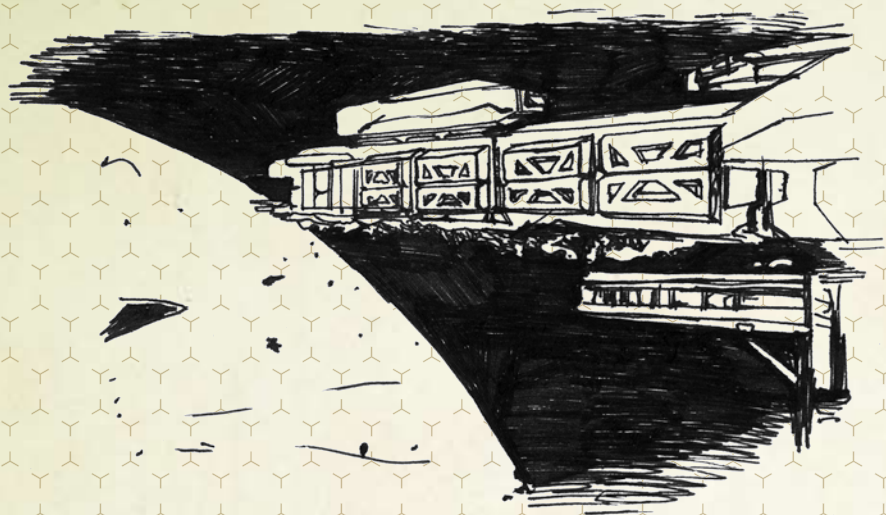
This shouldn't take too long... I hope.

So close. Sleep later!

Cortana will have to leave as soon as she is ready. I hope the Autumn is refitted in time.

Such multiplexed existence is dizzying. Follow up with Cortana on how this "feels."



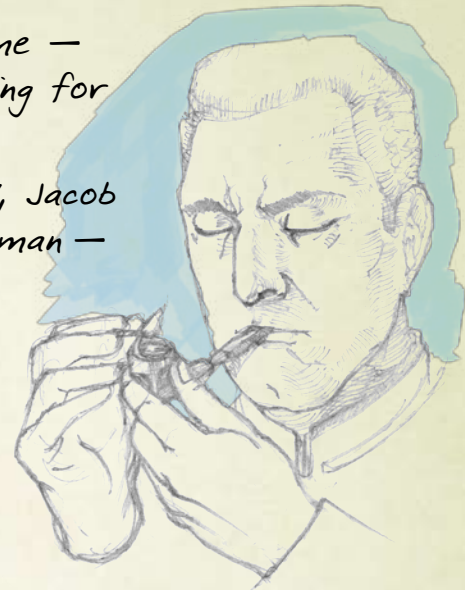


August 12, 2552

Battle group Leviathan and the Iroquois arrived at Reach for emergency repair and refit. Went to see what has been done to my MJOLNIR units. We have replacement parts and possible upgrades available (although 117 will have to be laser scanned for the new cybernetic implants).

Jacob came to see me — something I was hoping for yet dreading.

As I had anticipated, Jacob was ever the gentleman — any other ship captain would have abruptly launched into an inquisition on what an ONI operative was doing meandering about the vessel.



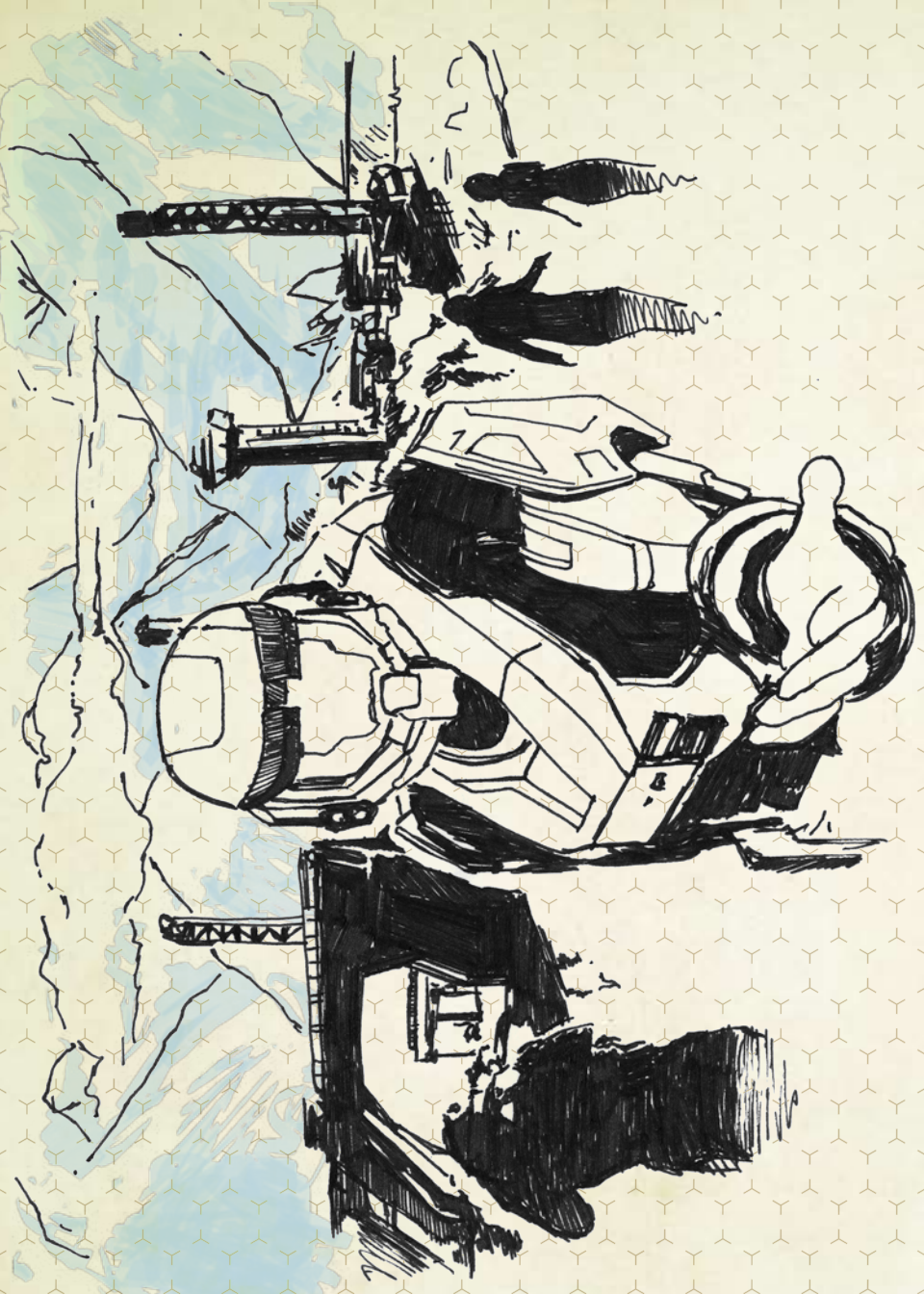
Went much better than I had imagined. We talked about Miranda, his "Keyes Loop," the Spartans, and RED FLAG (what little I could prematurely disclose).

We parted well, wishing each other the best on our respective missions. I offered my hand for him to shake. He kissed me on the cheek.

As I said... ever the gentleman.



Still concerned with updating/splitting Cortana.



Next was my visit with John.

We had just a few minutes groundside at Camp Hathcock. I told him of the coming procedures (gave his head a cursory MRI; surgical site is acceptable), and that he would have a new mission soon.

Many things have changed... not John. He isn't the living dead I've seen when so many veterans become numb to the trauma. Nor has he internalized the incessant brutality that defines his many campaigns.

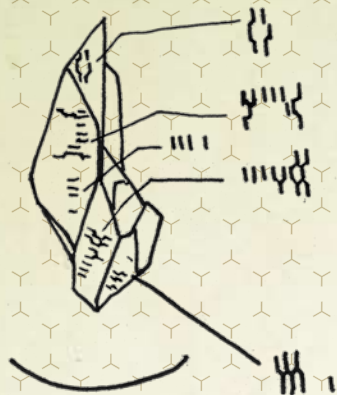
In many ways, he's still the indefatigable, undefeatable boy I found on Eridanus-II — eager, brave... innately grasping his role in all this.

Seeing him again, and recently Jorge, talking to Sara Sorvad about Laszlo, makes me realize how much I've lost... and all the reasons for those sacrifices.

John asked after Mendez and all the others we have called family. I shared what little I know — protocols and security clearances be damned.

So many are gone.

We sat together quietly... for a time.



Similarities to hypothesized navigational code in enemy transmissions are inconclusive. (Possible IEP deconvolution?)



Is there a connection to these more "standard" stylized glyphs?

August 24, 2552

Shown a hologram of an "object" — or at least a piece of an object.

This is very frustrating.

Wasn't even told what branch or group within ONI this came from, much less its point of origin — which is imperative for my complete analysis.

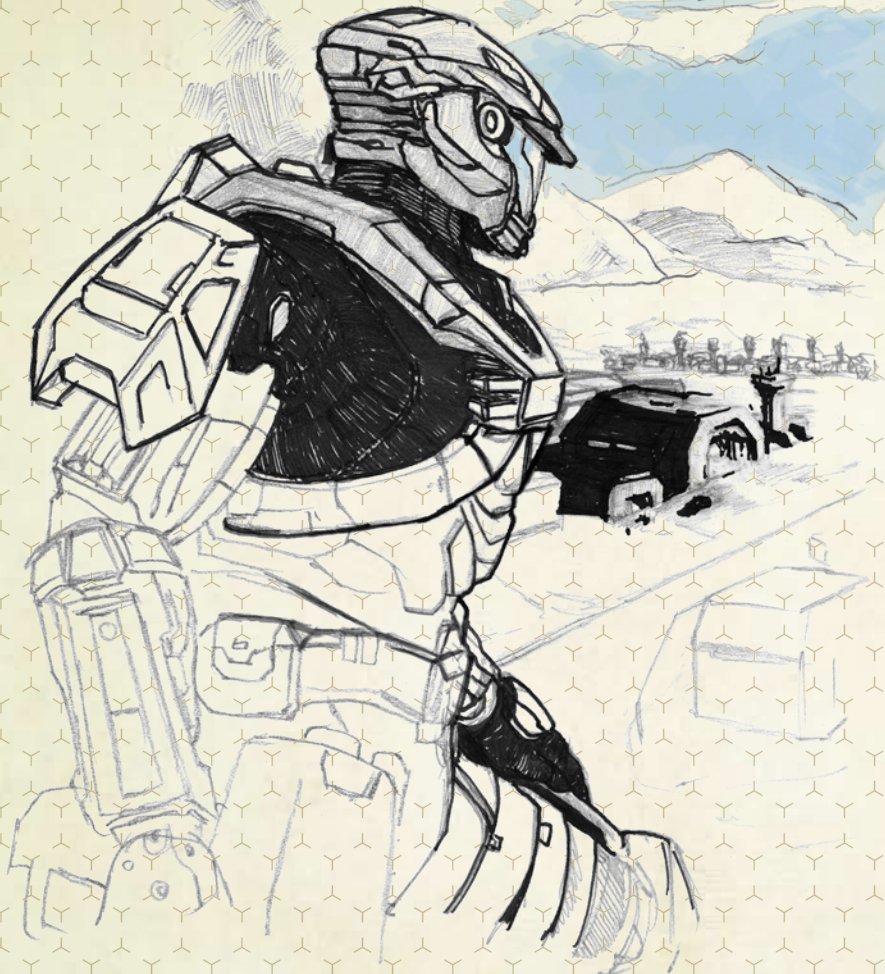
Curiously, the object, embedded in a stone fragment, shares many of the iconic language/code forms we discovered at the xenoarcheological site under SWORD Base.

From this supplemental data (which I couldn't copy and had to replicate from memory), I've hypothesized that the language/code, and hence the object, derives from predecessors of the Covenant, or from an unknown, more ancient alien culture. Deciphering the message on the object, however, eludes me for the moment. A more definitive analysis certainly requires the actual object and all relevant etiological data.

I only shared this with my undisclosed ONI counterparts because I knew it would get back to Ackerson and "inform" him that he possesses an authentic alien artifact... one that he would need me to decipher.

If so, I'll get everything he has.

August 27, 2552



Met with all the Spartans we could assemble on Reach to review preliminary details of RED FLAG.

A "decapitation" capture (suicide?) mission. As if there were a choice.

Yet, with all the desperately long-odds missions they've accomplished, I remain hopeful. Not for a victory, only a temporary peace with the Covenant. Long enough to glimpse their motivations, or unveil this protoculture they seemingly sprang from.

Either would give us advantage enough to survive.

I was thrilled to see my Spartans once more — John, Kelly, Fred, Linda, Isaac, William, and Li... (Jorge — obviously preoccupied).

But so many were absent — Sam, Kurt, Arthur, Sheila, Solomon...

I didn't think I'd take it so hard. Thankfully I had already met with John and prepped myself to avoid an embarrassing sentimental display.

I need them to see me strong. Even Spartans need someone to believe in.

Are they ready? Yes.

All the training, discipline, augmentation, and... bloodshed — they'll never be more ready.



The equipment? Almost there. The MJOLNIR Mark V system has proven itself in the field, but it's now one small operation and a few tests from completion.

Cortana (parts of her anyway) continues to learn and decipher the alien protoculture language, code forms, and hopefully technologies.

She'll continue to update her separated portion until the very last possible moment.

Amalgamation of John and Cortana? Much more, I hope, than the sum of their parts. This will be a sight to see.

All my discoveries, all my sacrifices... all come down to these next few days.

If only there were time to analyze my feelings... the technological implications... but there's no time for introspection.

Only four small tasks remain for me...

That lie about all the Spartans gathered here, save for Gray — will that come back to haunt me?

August 29, 2552



Surgery on John was flawless.

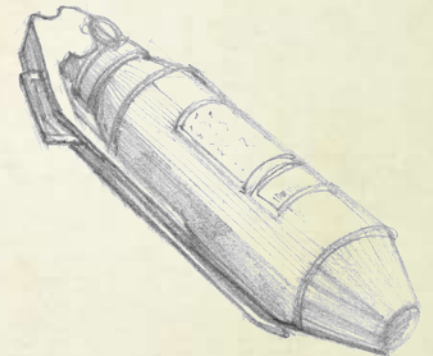
(Cortana maddeningly checked and rechecked each connection a dozen times as I fused.)

Subject has an astonishing amount of scar tissue over entire body. Evidence of three large subdural hematomas, but no evidence of resultant brain damage.

His recovery well within regenerative parameters.

Three hours until Mark V-AI integration tests.

Anticipate no surprises.



August 30, 2552

Tracking Ackerson's possible involvement in the missile incident at field test.

Sent my official protest backed by the vice admiral straight to UNSC Burden of Proof. Also sent suggestion that he may have suffered a mental breakdown and advised that he be taken into custody, pending evaluation.

Reports of him (or his agents?) snooping near the xenoarchaeological CASTLE site. If so, doubtful he would find anything. He's looking under the wrong rock.

Scattered reports of increased enemy activity nearby as well.

One can only hope the two will cross paths.

TO DO

- ☒ Prepare Kalmiya.
- ☒ Finalize and compile Cortana firmware update.
- ☒ Upgrade the package for transfer.
- ☐ The tunnel — if there's time!
- ☒ Net purge enable-XX147.
- ☒ Note to Miranda. Send out on Hopeful.
- ☒ Prep all backups for Umbra SlipSpace shot to Earth.

The Covenant on Reach.

NOT a scout party; they are here en masse.

I've seen the reports of how "contained" the situation is — military shorthand for "it's hit the fan."

We're prepared here in the lab.

I've been ready for this since Harvest.

But to experience it. Here.

It's still sinking in.

Must go.

SOON!!

Jerrold says perimeter is compromised.

Base AI denies it. I'll trust Jerrold and my own security protocols!

Skeleton personnel refuse to go.

The bastards finally found us. Took long enough.

PURGE CODE is Beta-Foxtrot-998741
overrideFail-safe: Ragnarock in case
something happens to me and the journal
survives.

NOBLE Team here.

It's time.



SECURITY CLASSIFICATION

TOP SECRET

DTG RELEASE TIME / DATE

01104Z MAR 53

PRECEDENCE

ACT PP

INFO NR

CLASS

SSSS

SPECAT

CW

LMF

ONI-3-5

CIC

NA

ORIG MSG IDENT

03669271

DISTR

LIMITED /
CODE-WORD RESTRICTED

MESSAGE HANDLING INSTRUCTIONS

DNA, RETINAL, TRANS-DELTA WAVE VERIFICATION REQ'D / SEALED OBSERVATION
UNDER GUARD AND AI SURVEILLANCE / DOUBLE-BLIND PROTOCOL AURORA-7

<<TOP-SECRET>> <<EYES-ONLY>> <<CODE-WORD-REQUIRED>>

SUBJ: HALSEY, CATHERINE E. (C409871). SCIENTIFIC AND PERSONAL JOURNAL. DATES: 08-2510-
0-8-2552 (INCLUSIVE). REF. UNDD 5213.9-R.RECIPIENT MUST SIGN FOR BOX AND CONTENTS, WHICH WILL BE INSPECTED AND DBL-BLIND VERIFIED
THAT CONTENT IS INTACT AND UNALTERED (BEFORE AND AFTER VIEWING).RECIPIENT MUST BE SEARCHED AS PER UNSC-JAG 490-QUU SPECIAL PROTOCOLS FOR TOP SECRET
SPECIAL-CIRCUMSTANCE VIEWING OF ANY AND ALL UNDECLARED DEVICES, SUBSTANCES, OR PASSIVE
NETWORKS LINKS.FAILURE TO COMPLY WITH ANY AND ALL REGULATIONS PURSUANT TO MILITARY PROTOCOLS OF
HANDLING DBL-CODE-WORD CLASSIFIED OBJECTS ARE SUBJECT TO A MINIMUM OF TWENTY-FIVE YEARS
IMPRISONMENT, AND IN WARTIME, DEATH UNDER THE OFFICIAL SECRETS ACT OF 2550.

DECLASSIFY BY: N/A BY SPECIAL EXECUTIVE ORDER 0-99-447S.

CHAIN OF CUSTODY

FROM

UNSCCENTCOM//J5// TO ONI//S3//BETA 5//

SPECIAL INSTRUCTIONS

NOT TO BE REMOVED FROM DBL-BLIND PROTOCOL

DRAFTER TYPED NAME TITLE OFFICE SYMBOL NET ADD

COL. W. B. ETON

DH COMPTROLLER 67780 1 JUN 53

RELEASER TYPED NAME TITLE OFFICE SYMBOL NET ADD

P. M.O., PPP, VA,

UNSC, 0000

SIGNATURE

P

ARTICLE IDENTIFICATION



FILL HERE

>>

>> FLOW >>

>>

>>

<< DISPOSE OF PROPERLY >>

<< BIOHAZARD - LEVEL V >>



7B

Patient Name: **S-117**

Date: **11/04/2517**

PICOLITER BIOCHEMICAL ANALYSIS LAB

X16-69908-01

PICOLITER C-RXR-007429-B



OFFICE OF NAVAL INTELLIGENCE



CONFIDENTIAL DIRECTORATE MEMORANDUM EXCERPT FROM ACCRA LOG

UNSC Prophecy
19 February 2526
0843 Standard

"The Accra Incident"

On 13 February 2526, at 0153 hours, ONI special service vessel UNSC Accra encountered an alien battle fleet while conducting a survey above planet Bliss. The ship's voyage data recorder was recovered by the UNSC Prophecy. The following is an excerpt of the ship's final event log.

<SOURCE>

0153 // Forty-five ships of unknown origin detected 18.537 million kilometers from planet Bliss.

0201 // Bliss defense vessels coalesce into battle cluster. Two UNSC heavy cruisers (Weeping Willows and Matador) and one frigate (Purpose).

0214 // Unknown ships positively identified as alien warships comprising what appear to be five assault carriers, twenty-three battlecruisers, and seventeen destroyers.

0216 // Bliss defense vessels engage enemy ships near lunar satellite Aires. Emergency evacuation protocol for local populations initiated.

0217 // Alien vessels counter.

0219 // Communication blackout with Bliss defense vessels. Alien ships proceed toward planet.

0237 // INTERNAL: Initiating Emergency Priority Order 020570E-3. Repositioning to planet far side for observation.

0243 // OBSERVATION: Alien ships aggressively approach planet surface using small fighters to eliminate evacuation transports and create an impenetrable staggered defense picket.

0255 // Enemy carriers remain in high orbit while battlecruisers and destroyers converge just above the planet's surface, branching outward with geometric precision unlike any previously reported alien military formation.

0256 // Planetside alien ships fire forward plasma cannons toward planet surface. Dust and debris conceal surface. Repositioning for better observation.

0257 // INTERNAL: Emergency Priority Order 020570E-3 complete. Preparing for departure.

0259 // Alien remote probes locked onto Accra position. Spinning up Slipspace drive. Enemy fighters en route.

0304 // INTERNAL: Slipspace drive at 31% power. Enemy fighters locking on. Contact within 537 seconds. Escape improbable, initiating evacuation protocol.

0312 // INTERNAL: Launched escape pods one through ten. Contact within 48 seconds.

0313 // INTERNAL: Launched escape pods eleven through twenty. Sustaining heavy fire from enemy craft.

0314 // Rewrite fatal cascade errors. This is UNSC AI Copperfield, service number CPF 0159-7. File transfer protocol terminated.

</SOURCE>



INTERSYSTEM NEWS

BLISS DECIMATED!

>MANASSAS, Alföld, Apr. 6, 2526/NS

An estimated five hundred million people are feared dead after the Covenant juggernaut turned its unprovoked aggression toward the peaceful planet Bliss on Feb. 13.

Credible, anonymous sources indicate that the capital city Manikata — inhabited by nearly five hundred thousand denizens — was the first population center reduced to smoldering rubble and blackened char. As one rescue and recovery official noted, the city is "a boiling lake of molten glass and metal."

No word has reached us from any other part of the colony.

None is expected.

Once again, we are forced to struggle with the aftermath of incomprehensible atrocities committed against our colonial men, women, and children. Loved ones who died as their homes burst into flames, their ashes scattered by the shock waves of the Covenant's devastating weaponry.

These people are forever lost to history. They are no longer the names and faces we remember. They have become meaningless statistics — peaks of data on a line graph that coldly calculates the rising casualties inflicted upon our people as this frivolous war drags on.

But what happened on the ground before the Covenant decided that they were through and it was time for them to leave? What have we done that could ever compel the Covenant to strive so zealously to purge all evidence of our existence from this galaxy? And what have the Covenant done on these worlds that would compel them to so violently and systematically scour all evidence of their actions?

We may never know.

There is nothing there anymore. As on Harvest, a tranquil farming community orbiting distant Epsilon Indi, just over a year ago, the unconscionable violence of Covenant aggression leaves us without a trace of their misdeeds save the silence from our once flourishing worlds.

Not even bodies remain to provide us with any closure or even the narrowest view of their fate. We are left only to wait out the next inevitable tragedy that will befall us at the Covenant's hands.

CANDIDATE RECORD

R-THUMB



FIRST

Caleb

MI

F

LAST

Aagard

☒ M☐ F

DOB

May 16, 2511

BIRTHPLACE (CITY)

Newport

CURRENT RESIDENCE

22 Hunnestad Rd.

CITY

Old Willem

COLONY/REGION

Luyten

SYSTEM

Luyten 726-8

CID

78104-985-RBA8714

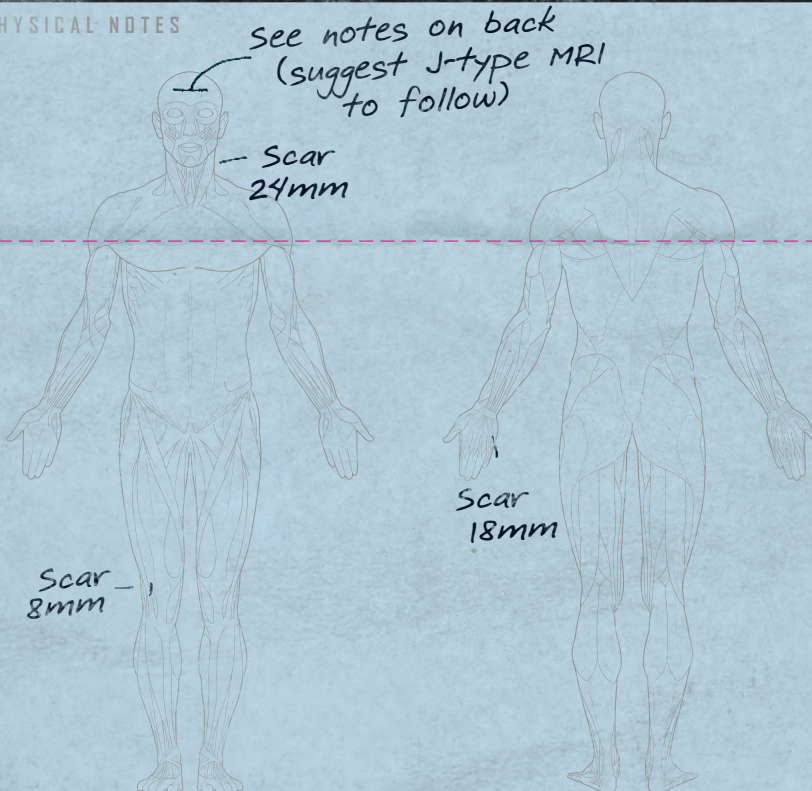
BLOOD TYPE

B-

HEIGHT

139 cm

PHYSICAL NOTES



WEIGHT

25 kg

EYE COLOR

Green

HAIR COLOR

Red

STATUS

☒ LOCATED☐ SECURED☐ DECEASED☐ DISQUALIFIED

DATE

September 21, 2517

PREPARED BY

Catherine Halsey

OFFICE OF NAVAL INTELLIGENCE





CANDIDATE RECORD

SIDE B

VACCINES

- ☒ HEP A-D/DTAP-X
- ☒ MCV-TRANS
- ☒ Hib/PCV-A
- ☐ PSTF
- ☒ IVP-D
- ☐ M-G-N2
- ☒ MMR-V-TVA
- ☐ OTHER

TEST SCORES

- 161

FINCHY-FRANKS INTELLIGENCE QUOTIENT
- 0.87

BETA-SEVEN PATTERN RECOGNITION
- 36%

CARPENTER EXISTENTIAL INDEX
- 54%

SOCIAL-NORMATIVE VALUES
- Alpha-Omicron

YANG-LIN LINGUISTIC APTITUDE MARKERS
- 487

COMBINED LOGICAL-MATHEMATICAL REASONING SCORES
- 136%

SPATIAL ABA SCORE (RELATIVE)
- 0.99

NATHAN/JIGS/KINESTHETIC GAUGE VALUE

4.7 Kippler PS/PK

APTITUDES

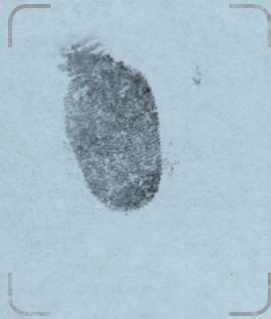
Extremely intelligent, but very self-sufficient and introverted.

NOTES

Neuroimaging of Caleb's brain conducted after a recent farming accident confirms a neural network accretion often associated with intuitive behavior—so-called “precognition.” More rigorous tests are required before rendering a sound prognosis.

CANDIDATE RECORD

R-THUMB



FIRST

Carris

MI

R

LAST

Pernault

☐ M☒ F

DOB

Dec. 15, 2510

BIRTHPLACE (CITY)

Irbid

CURRENT RESIDENCE

112 Main St.

CITY

Irbid

COLONY/REGION

Tribute

SYSTEM

Epsilon Eridani

CID

65841-100-LR0200

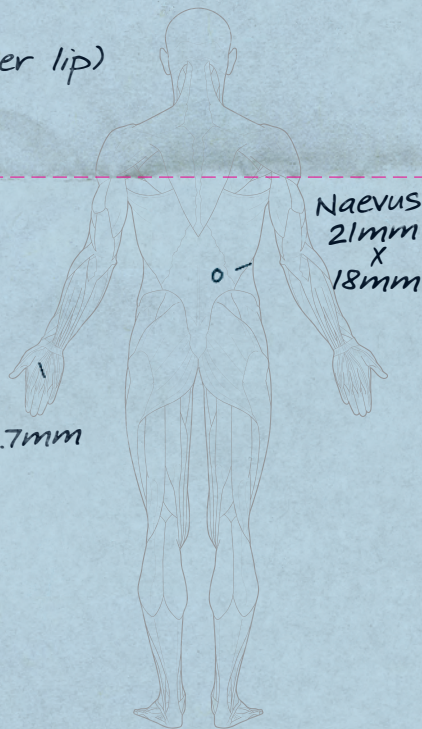
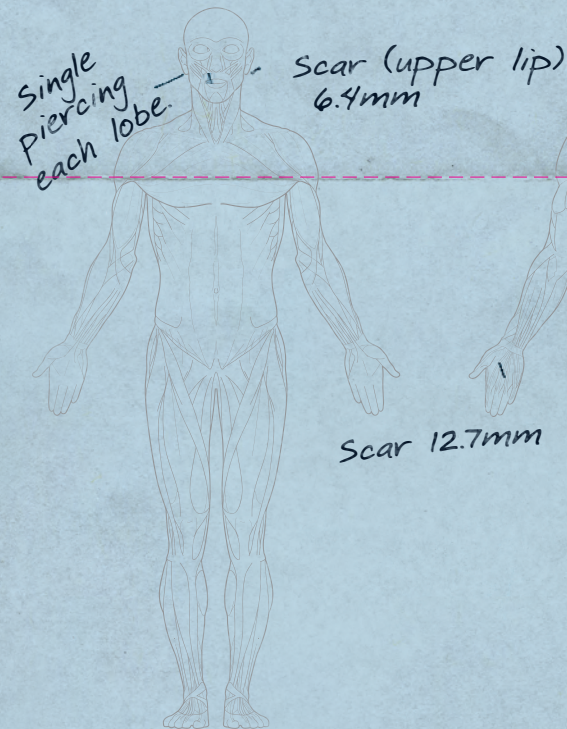
BLOOD TYPE

A+

HEIGHT

141 cm

PHYSICAL NOTES



WEIGHT

27 kg

EYE COLOR

Blue

HAIR COLOR

Black

STATUS

☐ LOCATED☒ SECURED☐ DECEASED☐ DISQUALIFIED

DATE

September 14, 2517

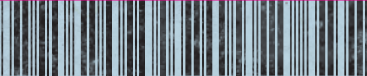
PREPARED BY

Catherine Halsey

OFFICE OF NAVAL INTELLIGENCE



SIDE A



CANDIDATE RECORD

SIDE B

VACCINES

- ☒ HEP A-D/DTAP-X
- ☒ HIB/PCV-A
- ☒ IVP-D
- ☒ MMR-V-TVA
- ☐ MCV-TRANS
- ☐ PSTF
- ☐ M-G-NZ
- ☒ OTHER Au-trans-morpho

TEST SCORES

<u>163</u>	FINCHY-FRANKS INTELLIGENCE QUOTIENT
<u>0.72</u>	BETA-SEVEN PATTERN RECOGNITION
<u>15%</u>	CARPENTER EXISTENTIAL INDEX
<u>85%</u>	SOCIAL-NORMATIVE VALUES
<u>Alpha-Delta</u>	YANG-LIN LINGUISTIC APTITUDE MARKERS
<u>395</u>	COMBINED LOGICAL-MATHEMATICAL REASONING SCORES
<u>164%</u>	SPATIAL ABA SCORE (RELATIVE)
<u>1.72</u>	NATHAN/JIGS/KINESTHETIC GAUGE VALUE

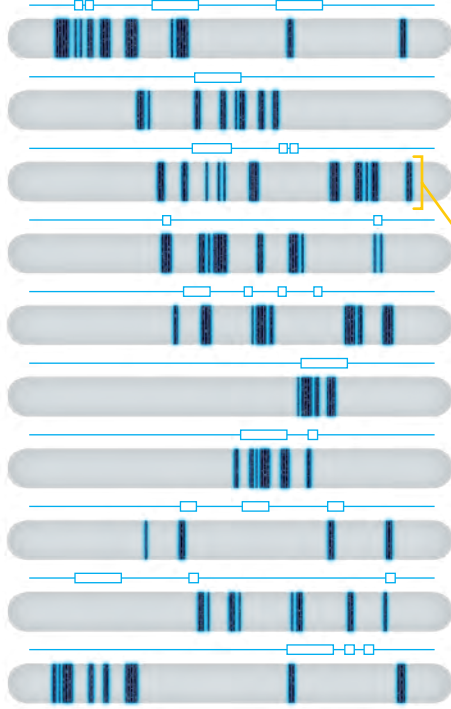
APTITUDES

Exceptionally athletic and strong—she's precisely what we're looking for.

NOTES

Carris' school principal removed her from physical education because of incidents where she inadvertently injured playmates during sport activities (a few of the children required hospitalization). Eyewitnesses reported that it was all quite innocent on Carris' part—she appears oblivious to her unusual strength.

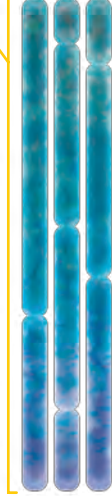
»Gene Group **RL-45-114**



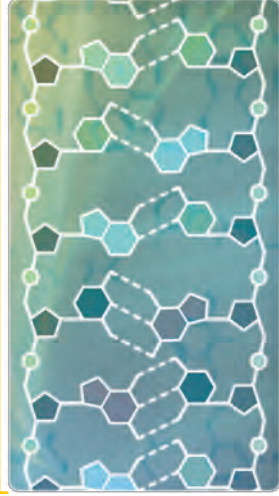
»CCRS/**P51681**

C-C chemokine receptor type 5

Immunization resistance at
ligand 2 (CCL2)

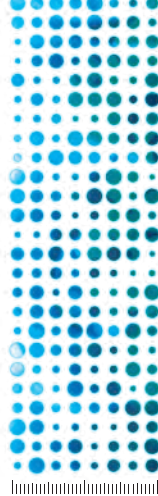


»Ligation-mediated PCR
simulation, run **47928**



»Flux density map

Indicates lethal interaction
with HGH catalyst (yields
dioxin compounds)



EYES ONLY

EXHIBIT B NO. 56



HLDC29-L12 : 2531.14.05.03:02:145 X16-69927-01





Doctor Halsey:

I know perfectly well why I was installed as the de facto security head of this installation, as I'm sure you have your own opinions on the matter. Nonetheless, I'm not here to confound you or spy on you to protect public interests--your current focus being less morally ambiguous than certain earlier efforts. Yes, some powers within the structure relish your slightest frustrations, but I'm here to ease those frustrations where I see it benefiting the common good.

To wit, I was present at any number of seemingly pointless interrogations; their content consisting mainly of regurgitated rhetoric that we had been aware of since nearly the inception of this conflict. Yet one particular item that seemed incidental at the time--a pictogram alongside alien script (see the photographic inclusion pulled from a security video)--should be of considerable interest to you.

Ádám Virág
Commander
Director of Base Security



INTERSYSTEM NEWS

HAVEN TERROR BOMBING KILLS TWO MILLION

>MANASSAS, Alföld, Aug. 21, 2511/NS

A terrorist suicide bomber loaded a commercial nuclear explosive (commonly used in asteroid mining) and several thousand pounds of scrap cadmium into the back of a rental truck, and then detonated it inside the promenade of the Haven arcology on Mamore. This is the third major terror attack this month in the Mato Grosso province of Mamore, but the first ever of this magnitude.

The explosion — which destroyed nearly a quarter of the structure above ground causing the arcology to collapse, killed an estimated two million residents, injured over 8.3 million others, devastated nearly half a million hectares of outlying farmland, and was felt over 140 kilometers away from the blast zone — also sent a plume of radioactive debris high into the atmosphere.

The Freedom and Liberation Party terrorist group claimed responsibility for the attack. Mamore's new head of Foreign Affairs and Security, Gilbert Ruais, expressed shock and outrage over the brutal attack, stating that "this unforgivable, cowardly act of violence proves yet again that [this group] wants neither freedom nor liberation; they desire only to viciously murder those with whom they disagree."

UNSC emergency response teams are presently organizing rescue, quarantine, and evacuation efforts. UNSC High Command on Reach has failed to respond to all requests regarding investigation of the individuals responsible for this attack or the Freedom and Liberation Party.



UNITED NATIONS SPACE COMMAND

Dr. Halsey:

Although I can appreciate your desire to reestablish contact with a former acquaintance, I must recommend that you remain patient and adhere to approved channels of communication until the cessation of current hostilities. Out of respect for your position I have provided all the information I am at liberty to share. However, the information that you tried to access is restricted in accordance with Article 428-A. Thank you for your understanding.

Urban Holland
Colonel
NOBLE, Commanding Officer

Control number: 761953170/III
Serving with: SPECWAR/GroupTHREE/NOBLE

Concerning: Jorge [REDACTED] // S-052
(P)MOS: S0
Rank: CW0

Medical fitness: 1
Particular function: [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]

Currently serving with SPECWAR/GroupTHREE/NOBLE as [REDACTED] on basis
or terms of [REDACTED] [REDACTED].

Serving from: [REDACTED]

Leaving [REDACTED] with [REDACTED] as destination: [REDACTED]

Passing the [REDACTED] [REDACTED] on the way to [REDACTED]: [REDACTED]

SFC: [REDACTED]

CP0: [REDACTED]

Disembarking in [REDACTED] [REDACTED] in [REDACTED] on: [REDACTED]

Embarking on: [REDACTED]

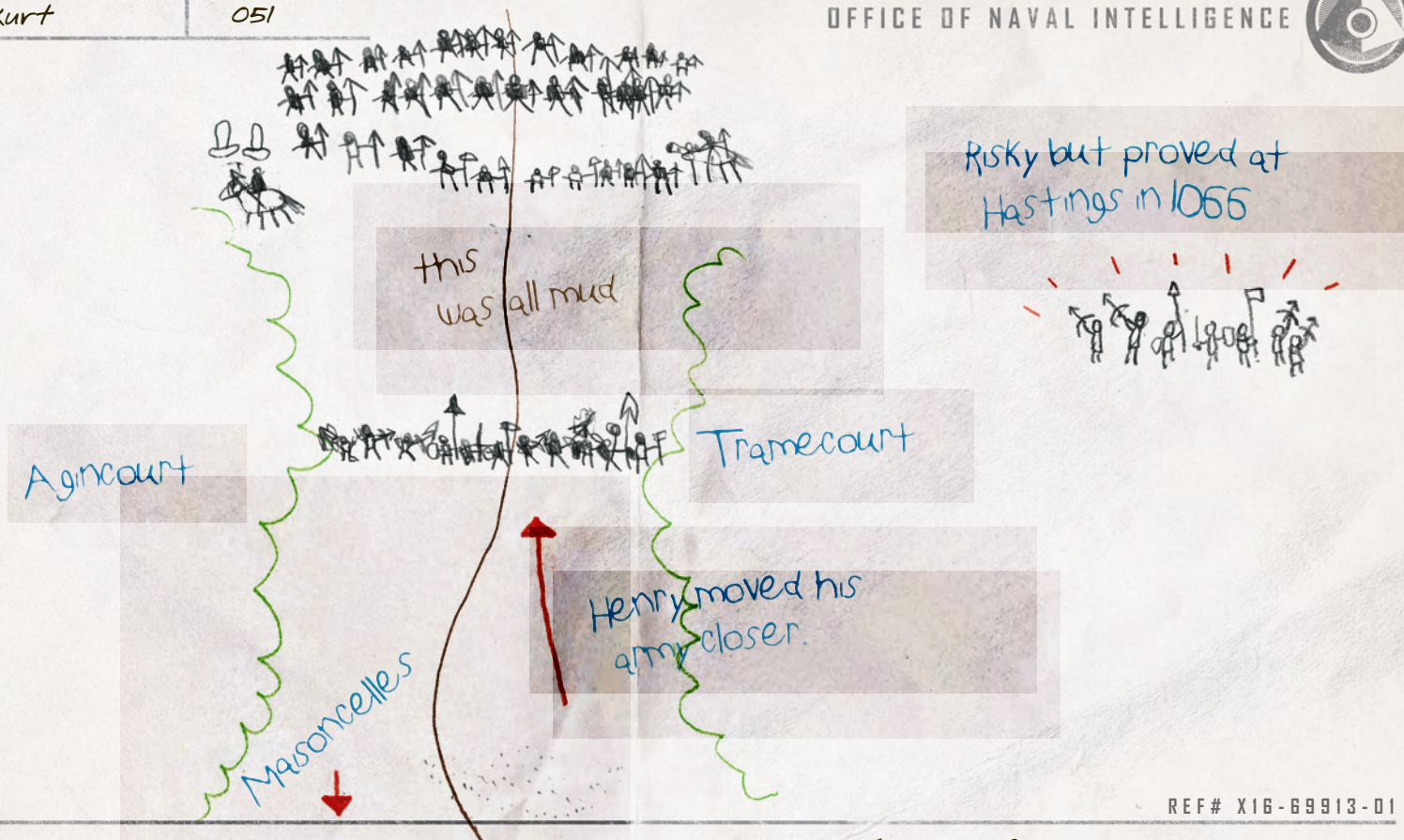
Disembarking in [REDACTED] on [REDACTED]: [REDACTED]

Leaving [REDACTED] on: [REDACTED]

Passing the [REDACTED] [REDACTED]: [REDACTED]

Arriving in the [REDACTED]: [REDACTED]

Stationed with [REDACTED]: 07/19/52, on base as of writing.



NOTES

Subject exhibits a highly structured sense of spatial development (approx. four standard measures above normative quotient), especially in context of tactical situations. Bonding to team members is acute, but overall secondary to larger goal-oriented strategic tasks (see correlation to team pride factors). Displays proclivity for dissociating himself from the suffering of nonteam members. Retains context of real-world vs. fictive scenarios, while showing remarkable restraint vis-à-vis task/play disengagement.

PREPARED BY

Cathrin Halcyon

DATE

February 5, 2518

REF# X16-69913-01

明倫彙編 家範典 卷一百一十五
列女傳 卷之五 忠貞 忠貞 忠貞 忠貞
忠貞 忠貞 忠貞 忠貞 忠貞 忠貞 忠貞 忠貞

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CANDIDATE RECORD

R-THUMB



FIRST

Kurt

MI

M

LAST

Trevelyan

☒ M☐ F

DOB

Oct. 19, 2511

BIRTHPLACE (CITY)

Mira

CURRENT RESIDENCE

69459 Waldgrave St.

CITY

Kuiper

COLONY/REGION

Circumstance

SYSTEM

Epsilon Eridani

CID

56522-026-LDR5685

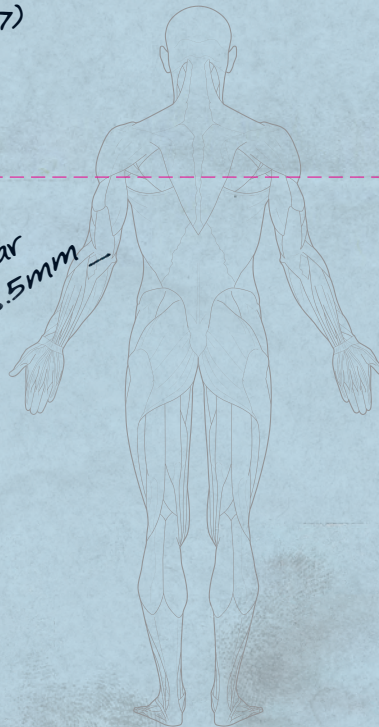
BLOOD TYPE

O+

HEIGHT

142 cm

PHYSICAL NOTES

Missing left front tooth
(c. June 7)Scar
28.5mm —

WEIGHT

29 kg

EYE COLOR

Hazel

HAIR COLOR

Brown

STATUS

☐ LOCATED☒ SECURED☐ DECEASED☐ DISQUALIFIED

DATE

September 18, 2517

PREPARED BY

Catherine Halcyon

OFFICE OF NAVAL INTELLIGENCE



SIDE A



CANDIDATE RECORD

SIDE B

VACCINES

- | | |
|--|---|
| <input checked="" type="checkbox"/> HEP A-D/DTAP-X | <input type="checkbox"/> MCV-TRANS |
| <input checked="" type="checkbox"/> HIB/PCV-A | <input checked="" type="checkbox"/> PSTF |
| <input type="checkbox"/> IVP-D | <input checked="" type="checkbox"/> M-G-NZ |
| <input checked="" type="checkbox"/> MMR-V-TVA | <input checked="" type="checkbox"/> OTHER <u>Vasc-b12, F/S rxn cxmp</u> |

TEST SCORES

<u>158</u>	FINCHY-FRANKS INTELLIGENCE QUOTIENT
<u>0.65</u>	BETA-SEVEN PATTERN RECOGNITION
<u>72%</u>	CARPENTER EXISTENTIAL INDEX
<u>127%</u>	SOCIAL-NORMATIVE VALUES
<u>Alpha-Gamma</u>	YANG-LIN LINGUISTIC APTITUDE MARKERS
<u>319</u>	COMBINED LOGICAL-MATHEMATICAL REASONING SCORES
<u>158%</u>	SPATIAL ABA SCORE (RELATIVE)
<u>1.09</u>	NATHAN/JIGS/KINESTHETIC GAUGE VALUE

APTITUDES

Strong leader. Kurt's verbal communication is extraordinarily lucid and cerebral.

NOTES

During a standard psych analysis, in response to basic ethical questions Kurt articulated solutions for several complex social problems on his planet. The solutions were later deemed viable by on-site sociologists and subject matter experts. Curiously, as the analysis proceeded, Kurt frequently asked if the interviewer was comfortable or if she enjoyed her current job.



INTERSYSTEM NEWS

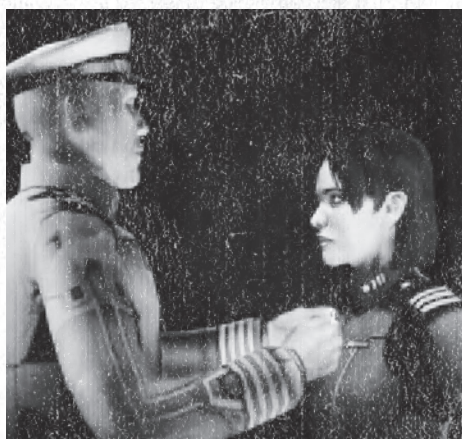
LCDR MIRANDA KEYES AWARDED SILVER STAR

>Apr. 6, 2550

Commander Miranda Keyes, daughter of the highly decorated Captain Jacob Keyes, was the guest of honor at a United Nations Space Command promotion ceremony yesterday in downtown Quezon on planet Reach. A number of promotions were awarded at the three-hour ceremony, which concluded with a performance by the UNSC Jazz Band. Keyes' father and Fleet Admiral Lord Terrence Hood were both present.

Lord Hood personally awarded Keyes the Silver Star. It was also announced that Keyes would assume command of her own frigate, *In Amber Clad*.

At 25, Keyes is one of the youngest women to ever receive such a prestigious promotion, although many had viewed such an honor as a fait accompli given Keyes' impressive accomplishments both in school and in military



service. Her promotion yesterday elevated her from the rank of Lieutenant to Lieutenant Commander.

At age 16 Keyes was accepted into Luna Officer Candidate School's pre-enlistment training, being the second-youngest student to ever have attended the Sol system's oldest candidate school. Following in her father's footsteps, she graduated with honors and immediately requested assignment to active duty. She was subsequently assigned a position on the UNSC *Hilbert*, an older science vessel that was eventually used by Keyes to play a critical role in battle despite the ship's lack of armaments.

In the years that followed, Keyes played a crucial advisory role in the coordination of several major offensive strikes against Covenant targets, spending most of her time on the front lines. These experiences proved invaluable to Keyes as she was advanced quickly through the ranks of the UNSC.

Such an accelerated career has not come without questions, and notable critics of Keyes were present at yesterday's ceremony. The most common criticisms aimed at Keyes involved cronyism and nepotism due to her father's respected status in the UNSC. And while critics are quick to avoid accusing Captain Keyes of playing a hand in his daughter's promotions, they do cite that a large majority of Miranda Keyes' commanding officers have, at one point in time, served under or with him.

However, even this vocal minority were grudgingly respectful yesterday, with one of her critics, who asked to remain anonymous, stating:

"Regardless of whether she deserves it, I won't argue that the UNSC needs all the personnel it can get."

A representative for the UNSC stated that LCDR Keyes is scheduled for deployment to active duty tomorrow morning. Mandatory leave is typically required for those receiving high-ranking promotions, but the Intersystem News has learned that Keyes was granted the opportunity to postpone this leave and immediately return to the front lines.

HiNOS

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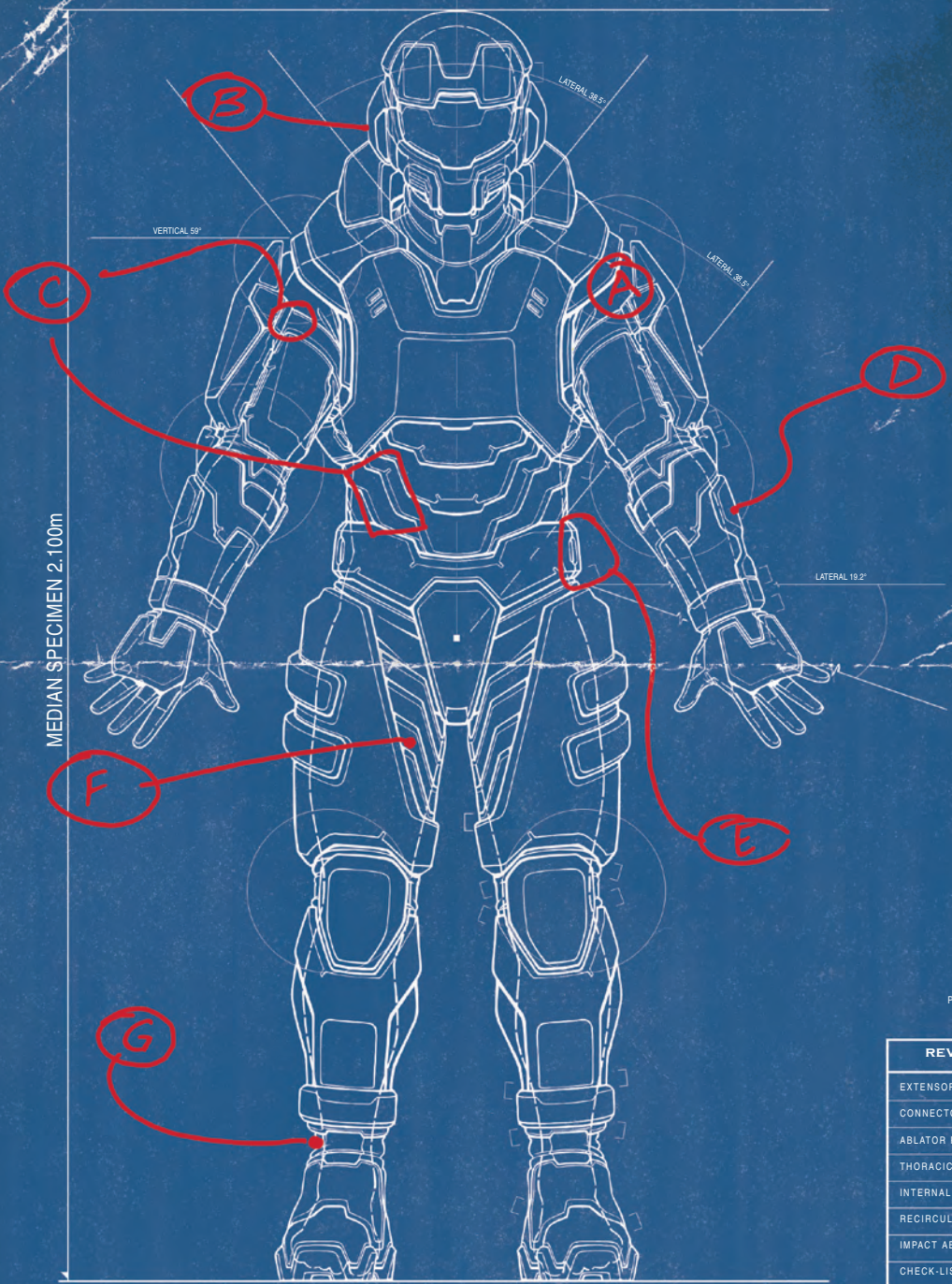
**FREE
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Offer expires 09/30/2552. *With the purchase of one adult entree.

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PROJECT

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CONNECTOR INC
ABLATOR PADS
THORACIC REIN
INTERNAL COM
RECIRCULATING
IMPACT ABSORP
CHECK-LIST-1320
PARTS 8142-855

NAVSPEC
NO 52-4-1A, SECTION

ACCORDANCE
SPECIFICATION E-4A
X16-69914-01

- A) Actuator anchors should be version grade C for parity with motion accelerator.
- B) Communications module upgrade, type A-B (crystalline matrix appropriate for class A rider).
- C) Connector part isn't as specified (refer to checklist 145-X).
- D) Include modular component for field implement (refer to checklist 212).
- E) Subnet part B, or power dock. (Are there any pockets?)
- F) One less will do.
- G) Should be load bearing. Use version 9 or we'll require additional modules for note E and 2 grams less on major plats per unit!



A new threat?

Catherine,

As far as I know, we don't officially have anything in this sector - we certainly don't have anything as BIG as this seems to be. Size-wise, it's got to be something in the neighborhood of Uranus XV (Puck) ... AND this is a 10 min. exposure - no p/y/r - this object definitely exhibits what I would have to describe as guided movement.

I know the chatternet isn't your kinda thing, but if you want to weigh in on this >> <sci.space.science.misc> ... it'll be pretty obvious once you're in.

~JC



MISC DATA
55.6992.3840
DS
J.J.K.

748383.3387203.20

748383.3387203.20

HIST. SE
55.6992.3840
KKU.00
J.J.K.
DS. 9.1
899 15.33

J.J.K.18P
9038 930
0-2927-
83266130

82002.383832.727777
55.6992.3840

K92.28.0003303.00

Z-1 Z-2 Z-3 Z-4 Z-5 Z-6 Z-7 Z-8 Z-9 M

SYNC>>NOMIN 09:45:52 26/07/S2
55.6992.3840
8903.827.22

--> Sec_1_3

82002.383832.727777
55.6992.3840

X16-69910-01 K92.28.0003303.00



You are now in possession of the most complete and accurate account that anyone has been able to assemble of SPECWAR/GroupTHREE/NOBLE's actions during the final weeks before the Covenant glassed Reach.

I suspect your interest in all of this has something to do with your involvement in Operation: WHITE GLOVE. Coincidentally, Halsey made multiple inquiries about NOBLE just as everything started going all to hell. She's the one loose end that may never be wrapped up satisfactorily - no body, no closure. In any event, I secured the next best thing for you. Section O has had it for some time - so there's that - but I think you'll find enough intel in here for your purposes.

- W

< < T O P - S E C R E T > >

CONTENTS ARE PROTECTED BY THE OFFICIAL SECRETS ACT OF 2550

These assets were recovered by ONI/SectionTHREE/
Bfive personnel from SW0RD base/SiteZERO prior to its
destruction as part of Operation: WHITE GLOVE.

Public disclosure of these assets will gravely damage
the security of the United Earth Government and all
allied Colonies.

Security container inventory:

1. (TS) Interactive disc chronicling final operations
of SPECWAR/GroupTHREE/NOBLE.

2. (TS) Dr. Catherine Elizabeth Halsey, journal,
four (4) pages (two [2] leaves) excised from journal
(content, date removed unknown).

3. (TS-C) One (1) DNA sequencing chart; BIO nano card
(ref. S-117); single-image photo of space anomaly;
memo ref. Bliss "glassing"; memo ref. Covenant/
alien glyphs (incl. single-image photo); deployment
info (ref. S-052); print of security video (ref. CRH-
[REDACTED]-[REDACTED]); Mk. IV Mjolnir PAA schematic (detail);
hand-drawn diagram of "Keyes Loop"; map of Reach
(detail, annotated); security badge (ref. Dr. C. E.
Halsey); unit patch from Spartan-II program; partial
Spartan-II candidate records (ref. S-051 [incl. psych.
eval., 2 Feb. 2518], S-095, S-137).

4. (CUI) Three Intersystem News kiosk tear sheets.

Classified by:



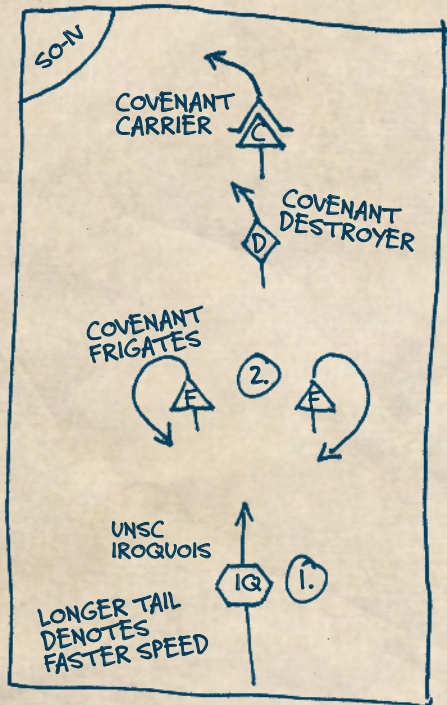
Reason: OSA.II.A.3.d

Declassify on: INTERMINABLE

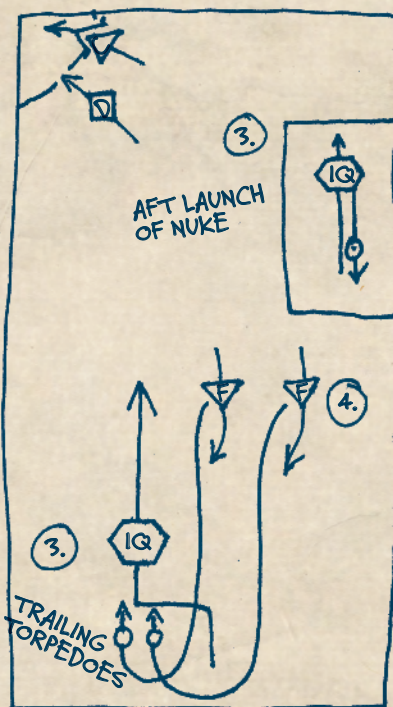
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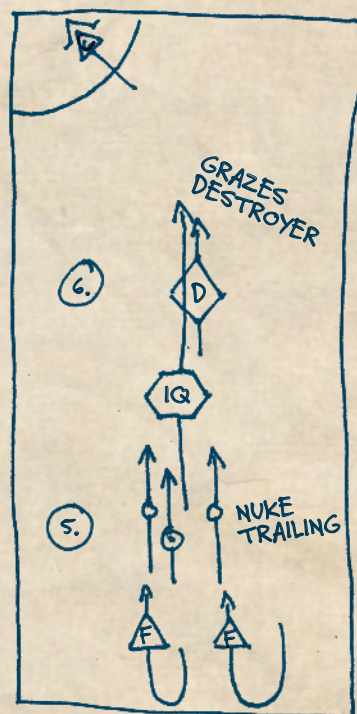
For Your
Comfort



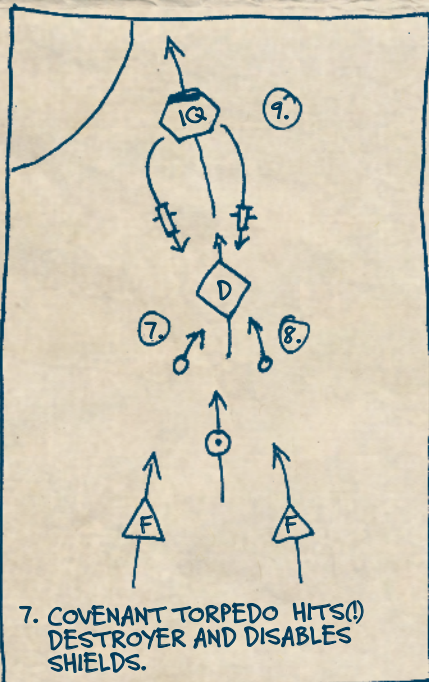
1. SETS INTERCEPT COURSE FOR DESTROYER.
2. FRIGATES TURN TO FIRE PLASMA TORPEDOES.



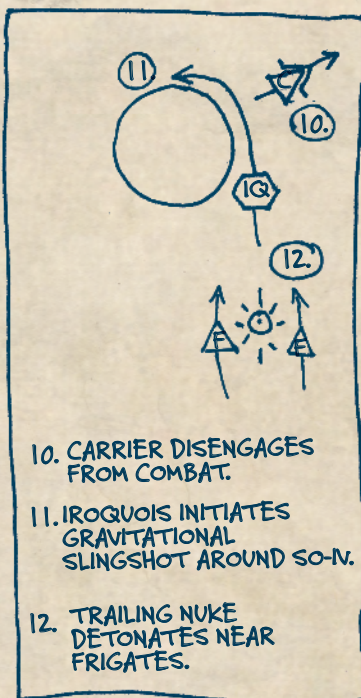
3. SIDESLIPS TORPEDOES. TORPEDOES MISS THEN REACQUIRE IROQUOIS.
4. FRIGATES MOVE TO ENGAGE.



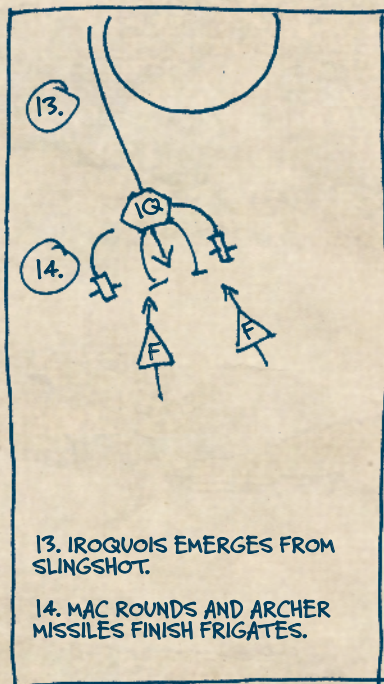
5. IROQUOIS BYPASSES FRIGATES.
6. IROQUOIS GRAZES PROW OF DESTROYER DAMAGING ITS SHIELDS.



7. COVENANT TORPEDO HITS(?) DESTROYER AND DISABLES SHIELDS.
8. SECOND COVENANT TORPEDO GUTS DESTROYER.
9. IROQUOIS LAUNCHES ARCHER MISSILES TO FINISH DESTROYER.



10. CARRIER DISENGAGES FROM COMBAT.
11. IROQUOIS INITIATES GRAVITATIONAL SLINGSHOT AROUND SO-N.
12. TRAILING NUKE DETONATES NEAR FRIGATES.



13. IROQUOIS EMERGES FROM SLINGSHOT.
14. MAC ROUNDS AND ARCHER MISSILES FINISH FRIGATES.