

A History of the Galactic War

Second Edition

Don Jones

DonJones.com

Disclosure

AI (specifically, Google Gemini) was used to create the images in this book. Many of these images are deliberately tongue-in-cheek, intended to reflect the AI misreading the prompt or over-following the prompt. This use of AI is intended to reflect the author's belief that our own future textbooks will in fact have most of their images—if not the text—produced by AI. One can hope AI improves by the time we come to that point.

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A History of the Galactic War

Second Edition

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Foreword

A History of the Galactic War was the first novel(la) I wrote. I was taken with the premise of books like *World War Z*, which is presented to the reader as a series of news articles. At the time, I was terrified of having to write characters dialogue—and textbooks don't contain character dialogue! So it was a way for me to test my skills at creating a storyline, and I was tickled by the conceit of the book being a “textbook.”

A decade later, I'd like to think my writing skills have improved, but I find myself incredibly fond of *A History of the Galactic War*. There are a ton of elements from sci-fi stories I loved—including E. E. “Doc” Smith's pattern of simply throwing ever-larger weapons at the problem.

So I decided to refresh the “textbook,” creating this second edition. I've leaned harder into the textbook tropes,

Foreword

expanded the storyline, and hopefully amped-up the “textbook voice” of the story.

I sure hope you enjoy.

Don Jones (Definitely sometime before 2030.)

From the Board of Galactic Education

When the first edition of *A History of the Galactic War* was published, the war itself had been over for only seven years. The authors — a distinguished panel of Human scholars — worked under conditions that we can now recognize as genuinely difficult: incomplete records, living witnesses whose memories were still raw, and a Galactic community still sorting out what, exactly, had happened and what it meant. That first edition was a remarkable achievement given those constraints. It has served classrooms well for more than a century.

But a century is a long time. The archives have opened. The diplomatic correspondence of the Tertian negotiation period, classified for decades, is now part of the public record. The personal diaries, letters, and oral histories of ordinary people who lived through the Incursion years have

been collected, catalogued, and studied. Scholars have had generations to argue about the Night of Horror, the ethics of the EarthFleet counterattack, the true nature of the Videx, and a hundred other questions that the first edition could only gesture toward. The history has deepened.

This second edition reflects that deeper understanding. It is not simply a longer version of the first. New chapters address the social and human experience of the period — what life on Earth actually felt like during the decades covered in these pages. The apparatus has been expanded: each chapter now includes learning objectives, vocabulary, primary source documents, and discussion questions designed to support both independent study and classroom use. The narrative itself has been revised throughout, incorporating new scholarship and correcting errors that crept into the original under the pressure of publication.

What has not changed is the book's fundamental purpose. *A History of the Galactic War* exists to help young Galactic citizens understand how Humanity arrived at its present place in the Galaxy — not through simple heroism or inevitable progress, but through fear, ingenuity, moral compromise, extraordinary courage, and a great deal of luck. The students reading this book will live their entire lives as Galactic citizens. They deserve to know what that citizenship cost.

We are grateful to the scholars, archivists, and educators whose work made this edition possible. We are especially

From the Board of Galactic Education

grateful to the crews and families of those who served during the long years this book describes. Their experiences are the foundation of everything that follows.

— *The Board of Galactic Education Curriculum Division,
Earth Administrative District 2140*

Introduction

How to Use This Book

A History of the Galactic War, Second Edition is designed for use in middle-school survey courses covering the period from 2037 to 2133. It is organized into five thematic parts, each covering a distinct phase of the events leading to, comprising, and following the Galactic War. The chapters within each part are meant to be read in order, as later chapters build on material established in earlier ones. A comprehensive timeline appears at the end of this front matter for reference throughout the course.

Chapter Elements

Learning Objectives appear at the opening of every chapter. These tell you, in plain terms, what you should be

able to do after reading the chapter — not just what you should know, but how you should be able to use that knowledge. Your teacher may use these objectives to guide discussion or assessment.

Body Text is the main historical narrative. It is written to be read straight through. Key vocabulary terms appear in **bold** the first time they are used in the chapter; definitions for these terms appear in the Vocabulary section at the end of the chapter and in the comprehensive Glossary at the back of the book.

Sidebars appear within the body text and are clearly marked. They address topics that are important but would interrupt the main narrative if included there — a closer look at a technology, a debate among historians, a comparison between the past and your present. Sidebars may be read as part of the main text or returned to separately.

Primary Sources appear near the end of most chapters. These are historical documents: excerpts from diaries, military records, government announcements, personal letters, and other materials produced during the period under study. They are presented as closely to their original form as archival standards allow, with brief introductory notes explaining their context. A short historian's commentary follows each source. Primary sources give you direct access to voices from the past — they are not summaries or interpretations, and they should be read with that in mind. Your teacher may ask you to analyze these

documents using the questions in the Review and Discuss section.

Vocabulary lists appear after the primary source in each chapter. Terms are listed in the order they appear in the chapter, not alphabetically. Full alphabetical definitions can be found in the Glossary.

Review and Discuss questions close each chapter. The first several questions test comprehension of the chapter's main content. Later questions ask you to connect this chapter to previous chapters, to analyze primary sources, or to consider open-ended questions that historians and citizens still debate. These questions have no single correct answer — they are invitations to think carefully and to disagree productively.

Further Reading suggests additional titles for students who wish to explore a topic in greater depth. All titles listed are available through the standard EarthGov educational library network.

A note for educators: A companion Teacher's Resource is available separately and includes chapter quizzes, discussion facilitation guides, primary source analysis worksheets, and suggestions for extended projects. The Teacher's Resource is keyed directly to this edition.

A Note on Dates and Calendars

All dates in this book are given in **Earth reckoning** — that is, according to the calendar system that was standard on

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Earth before and throughout the period covered here, and that remains in common use on Earth today. Years are counted from the traditional Earth baseline. Months and days follow the Gregorian calendar that was already universal on Earth by the early twenty-first century.

Students familiar with Galactic standard time notation will notice that Earth reckoning does not map cleanly onto the standard Galactic calendar. This is expected. Earth was not integrated into Galactic society until 2133, and the events described in this book occurred entirely within Earth's own temporal framework. Using Galactic standard dates for this period would be both anachronistic and confusing.

A full explanation of Galactic standard time, its origins, and its relationship to the calendars of individual member races is covered in *Introduction to Galactic Culture*, the companion course to this one. If you are taking both courses simultaneously, you may find it useful to attempt some date conversions as an exercise. If not, Earth reckoning is all you need here.

One additional note: the first edition of this book used the abbreviations B.I. (Before Incursion) and P.I. (Post-Incursion) for some dates, a convention that was common in early scholarship. This edition does not use that system. It was never officially adopted, it caused confusion wherever the First and Second Incursions were both under discussion, and most contemporary historians have abandoned it. All years in this book are given as simple year numbers — 2037, 2096, 2120 — with no additional notation required.

Timeline: 2037–2133

The following timeline covers the major events described in this book. It is intended as a reference tool — a place to orient yourself when the narrative references an event from a different chapter, or when you want to see how events relate to one another across time. It is not a substitute for reading the chapters themselves, which provide the context, analysis, and human texture that a timeline cannot.

2037 The First Incursion. An alien mothership enters Earth orbit and deploys eight unmanned tanker ships, which begin harvesting seawater from Earth's oceans. Earth's militaries respond with conventional and nuclear weapons. The mothership is destroyed; five of the eight tanker ships are recovered, largely intact, from Earth's oceans. The remaining three sink to inaccessible depths.

2037–2039 The aftermath of the First Incursion reshapes Earth's societies. Religious institutions surge in membership. Riots and civil unrest spread across dozens of countries. Several smaller governments collapse and are absorbed by neighbors. Earth's scientific and military communities begin the intensive study of the recovered alien ships.

2039–2040 Researchers identify and successfully replicate the quantum tap — a compact, limitless energy source recovered from the alien ships. The quantum-entangled communicator, or QEC, follows shortly after, enabling real-time communication across any distance. Quantum computing advances rapidly, and the first

meaningful artificial intelligence systems begin to emerge.

2040–2041 New railgun technology, powered by quantum taps, creates a military power vacuum as the major powers focus their forces outward. Smaller nations exploit the gap. The Gang of Ten — Earth's ten largest economies — respond with the Night of Horror, destroying the populations of more than a dozen aggressor states in a single evening. Global hostilities cease immediately.

2041–2042 Atmospheric moderators are deployed to address the environmental damage caused by the Night of Horror's railgun strikes and by decades of fossil fuel use. Hydroponic farming techniques, originally developed for orbital applications, begin to be deployed planet-side.

2042–2045 Lyborne Industries leads the construction and deployment of auto-factories in the asteroid belt, producing the first Winchester-class railguns. By the end of 2045, nearly ninety of these kilometer-long weapons are positioned throughout the solar system, pointed outward. The Oculous Cloud — thousands of small, stealthy surveillance drones — begins deployment throughout the outer solar system.

2043 Ares station, Earth's first dedicated military space station, is completed and positioned between the orbits of Earth and Mars. It becomes the nerve center of Earth's space-based defenses, home to Ares Command.

2045–2048 The Gang of Ten's interlocking alliances effectively consolidate Earth's governments. A series of

catastrophic natural disasters in 2047 — hurricanes, earthquakes, droughts — accelerates the push toward a single world government.

2048 EarthGov is formally established in Geneva. The United Nations is dissolved. Former nations become Administrative Districts under the new four-branch world government. EarthGov immediately assumes control of all life-sustaining resources and begins standardizing law and policy across the planet.

2057 The Second Incursion. A single large alien vessel enters the solar system, approaching Earth on a direct trajectory. Ares Command orders an immediate response; eleven Winchester-class railguns fire, destroying the ship before it reaches Earth. The ship leaves no survivors and few recoverable fragments. Earth's "shoot first" protocols are validated — and hardened.

2058–2063 The Defensive Buildup. Super Winchester-class railguns are deployed in the hundreds. Hellfire I station is constructed to replace Ares as the primary command and control center. The Attacking Eye drone — small, fast, and capable of ramming speed — is developed and deployed in large numbers.

2064 First Contact. A small alien vessel enters the solar system broadcasting a message in English. The vessel belongs to Tertian, an Ambassador of the League of Affiliated Systems. He proposes that Earth serve as the League's central bank. Negotiations begin.

2070 The Tertian Arrangement is signed. Earth agrees to operate as the Galactic Central Bank, conducting all business in the Alpha Centauri system. No League member is permitted to enter Earth's system for any reason.

2078 Earth's operations in Alpha Centauri are fully established. AC Command is operational. The teller platform system, the dummy station, Proxima Station, and the Hy'anx habitat are all in place. The Galactic Bank opens for business.

2082–2096 The Galactic Bank era. Earth accumulates hard currency as banking fees. New technologies are acquired from the League. EarthGov's control over daily life deepens, but living standards rise. The Videx remain an enigmatic and concerning presence in League politics.

2096 The Third Incursion. A Videx cruiser enters the Alpha Centauri system without authorization, destroying League ships in the adjacent system before ramming through the gate at full speed. AC Command Commander Skaught Perry orders immediate fire; the Videx ship is destroyed. Banking operations are suspended for nearly a week. Earth and the League begin a deeper conversation about the Videx threat.

2096–2098 The aftermath of the Third Incursion. EarthGov learns more about the Videx from the Hy'anx — their xenophobia, their unprecedented aggression toward Humanity, and their known weapons systems. Earth hardens its defenses. The Galactic Divide begins to form, splitting League races into the Society faction and the Independent faction.

2098–2107 The Galactic Divide deepens. The Independent faction begins ignoring League trade monopolies. The Society faction retaliates by restricting market access. Near the end of 2100, the Videx enter open warfare, attacking Farer space stations and bombarding Society worlds. The League is effectively at war — but has no coordinated military capacity to fight one.

2107 EarthFleet is born. Earth begins construction of its own capital warships, equipped with heavy railguns, offensive lasers, and drone bays. The Hy'anx provide inter-system drive plans in an act of deliberate Galactic treason. Earth steals exotic drive-core elements from League bank vaults to complete construction. EarthFleet becomes the first Human fleet capable of inter-system travel.

2109 The Counterattack. EarthFleet launches against the Videx homeworld — ninety percent of the fleet, including five planetbuster ships. The attack is catastrophically underestimated. The Videx defense is overwhelming. More than half of EarthFleet is destroyed in the first ten minutes. EarthFleet retreats, having inflicted minimal damage. The data collected during the battle will prove crucial.

2110 The Machine Intelligence Revelation. Analysis of battle data, combined with a message delivered by a Videx drone before it self-destructs, confirms what the evidence had been suggesting: the Videx are a machine intelligence. They have no biological life. They view Earth's artificial intelligence programs as an existential threat. The gauntlet is thrown.

2112 The Galactic Siege. Videx warships lay siege to major nexus systems throughout the Galaxy, cutting off trade and travel. The demand is simple: Earth must be destroyed. The two Galactic factions — Society and Independent — are effectively united by this act. EarthGov proposes a bold plan: disperse auto-factories throughout accessible Galactic systems and build a new, fully automated Galactic Fleet.

2112–2120 Construction of the Galactic Fleet. More than 1,200 ships are built across over 120 systems. All are unmanned, controlled remotely via QEC links. Earth's wartime economy shifts into full production. A generation of children grows up knowing nothing but war.

2120 The Galactic War. The Galactic Fleet launches simultaneously from more than 120 systems. Siege systems are relieved. The Videx homeworld is assaulted by waves of asteroid drones, capital ships, and finally planetbuster vessels. The Videx homeworld is destroyed. All Videx ships are hunted down and eliminated. The war is over.

2120–2133 The aftermath. Galactic systems are scoured for Videx survivors and hidden technology. Videx back doors are discovered in space station operating code throughout the Galaxy and removed. Earth negotiates its new role in Galactic society.

2133 Humanity becomes Galactic citizens. The Galactic Bank continues under new operating rules, now Earth's franchised monopoly. EarthFleet is restricted to Earth's

Introduction

systems. Human tourists begin traveling the Galaxy. The Galactic Era begins.

1

Earth Before the Incursion (2030s)

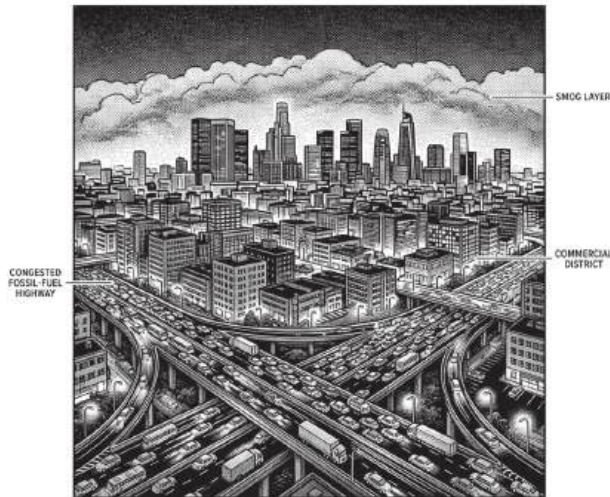
By the end of this chapter, you should be able to:

- Describe Earth's energy situation in the years before the First Incursion
- Explain the political and social divisions that characterized pre-Incursion Earth
- Identify the key tensions — economic, religious, and geopolitical — that the Incursion would permanently reshape
- Analyze what Earth's inward focus reveals about how the Incursion came as such a profound shock

Picture the world your great-great-grandparents were born into. Not the Earth you know — with its clean skies, its

unified government, its quantum-tap powered cities humming quietly through the night — but a different Earth entirely. A planet that burned ancient organic matter for energy, that divided itself into nearly two hundred competing nations, and that directed almost all of its considerable intelligence and ambition at itself. This is the Earth of the 2030s: the world that existed on the morning of September 14, 2037, a few hours before everything changed.

Understanding that world is not merely an exercise in historical sympathy, though sympathy is warranted. It is a prerequisite for understanding why the First Incursion hit as hard as it did — not just physically, but psychologically. The ships that arrived in 2037 did not descend upon a confident, outward-looking civilization. They arrived above a planet that had never seriously considered the possibility that they might come at all.



The Energy Question

The most fundamental fact about pre-Incursion Earth is one that students today sometimes struggle to grasp intuitively: the planet ran on fire. More precisely, it ran on **fossil fuels** — petrochemical liquids, gases, and solids extracted from deep beneath the Earth's surface, where the compressed remains of ancient organisms had spent hundreds of millions of years transforming into coal, oil, and natural gas. These substances were burned to generate heat, which drove turbines, which produced electricity, which powered essentially everything. The process was inefficient at every stage. It produced toxic byproducts that accumulated in the atmosphere. It required an enormous global infrastructure of extraction, refinement, and distribution. And it was, by definition, finite:

there was only so much of it underground, and once burned, it was gone.

The finite nature of fossil fuels was not a secret in the 2030s. It had been understood, debated, and politicized for decades. Control over fuel supplies had shaped wars, alliances, and the internal politics of dozens of nations. Countries that sat atop large oil reserves wielded influence far beyond what their populations or economies might otherwise have justified. Countries without such reserves spent enormous sums and political capital securing access to them. The energy question touched everything — foreign policy, domestic economics, military strategy, and the daily lives of ordinary people in ways so pervasive that most simply took them for granted.

What would eventually replace fossil fuels — the quantum tap, with its clean, limitless, palm-sized energy output — was, in 2037, not even imaginable. Earth's scientists had theories about cleaner energy. Solar power was expanding. Wind and tidal generation existed. Nuclear fission plants, carrying their own considerable risks, provided power in several countries. But nothing approached the combination of efficiency, scalability, and cleanliness that the quantum tap would eventually deliver. The 2030s were a decade of incremental progress on energy, accompanied by the slowly growing awareness that incremental progress might not be enough.

A Divided Planet

Energy was one fracture line among many. In 2037, Earth's people were organized into approximately 195 independent nations, each with its own territory, government, laws, military, and — in many cases — its own dominant language, religion, and cultural identity. Many of these nations cooperated on shared problems, trading goods, negotiating treaties, and participating in international bodies like the United Nations. Many others were in active conflict, whether through proxy wars, economic pressure, territorial disputes, or outright military engagement. Wars both large and small were a constant feature of the era; in any given year of the 2030s, armed conflict was occurring somewhere on Earth's surface.

Geopolitics — the study of how geography, resources, and power shape the relationships between nations — was one of the defining intellectual frameworks of the age, and for good reason. The distribution of land, water, mineral wealth, and population created pressures that no international agreement had ever fully resolved. Wealthy nations, concentrated largely in what were then called the Northern Hemisphere's temperate regions, maintained large militaries, advanced technological sectors, and high standards of living for most of their citizens. Poorer nations, many of them in equatorial and Southern Hemisphere regions that had been subject to centuries of extraction and colonization, struggled with poverty, disease, and political instability. The **gross domestic product** — a measure of a nation's total economic output — of the

wealthiest countries dwarfed that of the poorest by factors that are almost difficult to comprehend today.

Religious belief added another layer of complexity. In the 2030s, the majority of Earth's population held some form of religious faith, and for billions of people, religious identity was among the most fundamental facts of their lives. This was not inherently a source of conflict — many religious traditions coexisted peacefully and contributed enormously to human culture, charity, and community. But religion had also been weaponized throughout human history, and the 2030s were no exception. Some governments were formally theocratic, meaning religious law and civil law were the same thing. Some religious groups pursued political goals with a militancy that led to violence. And the collision between secular political systems and religiously motivated movements produced friction in nearly every corner of the world.

Students today communicate through a layered network of prioritized channels — QEC-based personal devices, secured governmental networks, open public forums, and a dozen others, each optimized for different kinds of content and different levels of security and verification. It can be difficult to imagine the communications landscape of the 2030s, which rested almost entirely on a single global network: the **internet**.

The internet was, by the standards of its own time, a remarkable achievement — a worldwide system connecting billions of devices, enabling the near-instant sharing of text, images, audio, and video across any distance. It had transformed commerce, culture, politics, and personal life in ways that earlier generations found astonishing.

But the internet had a significant flaw that its architects had not anticipated and its users had not solved: it was extraordinarily difficult to distinguish truth from falsehood within it. The same network that allowed a scientist in one country to share research with colleagues across the world also allowed anyone, anywhere, to publish anything — accurate or invented — with identical ease. By the 2030s, this had produced a global information environment characterized by deep uncertainty. People in the same city, sometimes in the same family, operated from entirely different sets of assumed facts. Shared reality — a prerequisite for collective decision-making — had eroded badly.

Historians have noted, with some irony, that this fragmentation of shared reality made Earth's response to the First Incursion simultaneously more chaotic and more unified than it might otherwise have been. More chaotic, because no one agreed on what was happening or what it

meant. More unified, because the ships were visible to anyone who looked up — and for once, no one could argue about whether they were real.

What Earth Didn't Know

The 2030s were a decade of genuine technological progress, but that progress was almost entirely directed inward. **Artificial intelligence** — in its early form, nothing resembling the sophisticated systems that would later emerge from contact with alien technology — was advancing in narrow, specialized applications: playing games, recognizing images, translating languages, predicting certain kinds of outcomes from large data sets. It was impressive within its constraints, and those constraints were significant. These systems could not reason, could not generalize, and were nowhere near what a later generation would call sentience.

Earth's presence in space was similarly modest. Unmanned probes had reached every planet in the solar system and several bodies beyond it. Robotic landers had operated on Mars and Venus. The International Space Station — aging, underfunded, perpetually on the verge of being decommissioned — orbited Earth with a rotating crew of two to six astronauts, resupplied twice a year. No Human had walked on the Moon since the early 1970s, and no serious plan existed to change that. The idea of Human

settlement on Mars was a topic for enthusiasts and science fiction, not government budgets.

Most critically: Humanity was almost unanimous in its conviction that it was alone. The question of extraterrestrial life had been debated by scientists for a century, and while the mathematical probability arguments for life elsewhere in the universe were well-established, no confirmed evidence had ever been found. The search for radio signals from other civilizations had been ongoing for decades and had produced nothing definitive. As the 2030s wore on, a growing contingent of scientists had begun to argue — quietly, in academic papers that received little public attention — that the silence itself might be meaningful. They were right, though not in the way they imagined.

What Earth did not know, and could not have known, was that it had been observed. The question of when that observation began, and what the observers made of what they saw, remains one of the most debated questions in modern historiography. What we can say, with the confidence that comes from a century of subsequent scholarship, is that Earth in the 2030s was not as alone as it believed. The universe had been watching. And something in what it saw had attracted the wrong kind of attention.

Reading the history of the pre-Incursion decade from the vantage point of 2140, it is tempting to see warning signs everywhere — to read Earth's energy conflicts as a signal of vulnerability, its

political divisions as an invitation, its absence from space as a kind of innocence about to be shattered. This kind of retrospective pattern-finding is a natural human impulse, and historians must guard against it carefully.

The people living in the 2030s were not sleepwalking toward catastrophe. They were solving the problems in front of them, with the tools and knowledge available to them, under pressures that were real and immediate. The farmer worried about drought. The engineer worried about the power grid. The diplomat worried about the next election. None of them were wrong to focus where they did. They simply had no way of knowing that a larger problem was approaching from above the plane of the elliptic, and that it would arrive before any of their smaller problems were fully solved.

We do not tell this history to make our ancestors look foolish. We tell it because understanding where they stood helps us understand the magnitude of what they faced — and what they somehow managed to do about it.

On the morning of September 14, 2037, Earth's attention was, as it had been for as long as anyone could remember, pointed entirely inward. The headlines of that day concerned a political dispute in one region, a weather

disaster in another, a trade negotiation in a third. No telescope was pointed at the right part of the sky. No early warning system was listening on the right frequencies. No government had a plan.

By the following morning, everything had changed.

Vocabulary

Fossil fuels — Petrochemical substances including coal, oil, and natural gas, formed over millions of years from the compressed remains of ancient organisms. Fossil fuels were the dominant energy source on Earth throughout the twentieth and early twenty-first centuries. Their combustion produced energy but also toxic atmospheric byproducts, and their supply was finite.

Gross domestic product — A measurement of the total economic output of a nation — the combined value of all goods produced and services rendered within its borders in a given year. In the pre-Incursion era, gross domestic product was the primary benchmark used to compare the economic size and power of different nations.

Geopolitics — The study and practice of how geography, natural resources, and physical location shape the political relationships and power dynamics between nations. In the 2030s, geopolitical competition — particularly over energy resources — was one of the defining forces in international relations.

Internet — The single global communications network that connected billions of devices and users on pre-Incursion

Earth. The internet enabled the rapid sharing of information across any distance but lacked reliable mechanisms for distinguishing accurate information from false information.

Artificial intelligence — In its pre-Incursion definition, the term referred to computer systems capable of performing specific tasks — recognizing patterns, translating languages, generating predictions — that previously required human judgment. These early systems were narrow in scope and non-sentient. The term takes on a significantly different meaning after 2040, when contact with alien technology accelerated AI development dramatically.

Primary Source

The following is an editorial published in the Wellington Courier, a New Zealand newspaper, on March 3, 2036. The author, one Gordon Ashby, was the paper's senior opinion columnist. The editorial was discovered in a digital archive of pre-Incursion print media and has been cited frequently in scholarship on pre-Incursion attitudes toward extraterrestrial life. It is reproduced here as an example of mainstream educated opinion in the years immediately before the First Incursion.

They're Not Coming. They Never Were. *By Gordon Ashby*

Every few years, like clockwork, some scientist with a grant to justify announces that we may be "closing in" on evidence of extraterrestrial life. The headlines follow dutifully. The public briefly entertains the notion that we are not alone in the universe. Then nothing happens, as nothing always happens, and we all go back to worrying about things that are actually real.

I have watched this cycle repeat itself for thirty years. I have grown tired of it.

The mathematics of cosmic probability are seductive, I grant you that. There are, we are told, billions of stars in our galaxy alone, and billions of galaxies beyond that. Surely, somewhere in all that vastness, the conditions for life have arisen again. Surely we are not unique. The argument feels irresistible.

And yet here we are, with our radio dishes pointed at the sky for the better part of a century, and the sky remains politely silent. No signal. No visitor. No shadow passing across the sun. Nothing.

The simplest explanation is usually correct. The universe is large and life is rare and we are alone. This conclusion is not depressing — it is, if anything, clarifying. Our problems are our own to solve, our future our own to make. We need not wait for visitors who are not coming. We need not scan the skies for dangers that do not exist.

There are quite enough dangers here on the ground to occupy us. I suggest we attend to those.

— *Gordon Ashby, Wellington Courier, March 3, 2036*

. . .

Gordon Ashby's editorial reflects a position that was genuinely common among educated, scientifically literate people in the mid-2030s. His dismissal of extraterrestrial contact as wishful thinking was not considered fringe opinion; variants of this argument appeared regularly in mainstream publications across many countries. What makes the editorial striking from a historical vantage point is not its conclusion — reasonable people held that conclusion in good faith — but its tone of settled certainty. Ashby would live to see the First Incursion the following year. No record of his response to it survives.

Review and Discuss

1 What were fossil fuels, and why were they so central to Earth's political and economic life in the 2030s? What problems did dependence on fossil fuels create?

2 The chapter describes Earth as "pointing its attention entirely inward" in the years before the First Incursion. What does this mean, and what evidence from the chapter supports this description?

3 Gordon Ashby's editorial was published sixteen months before the First Incursion. Based on the chapter, why were his views so widely shared? What information was he missing, and why would he have had no way of knowing it?

4 The chapter mentions that the internet made it difficult to distinguish true information from false information. How do you think this affected Earth's population in the immediate hours and days after the First Incursion arrived? What sources would people have turned to, and why might those sources have been unreliable?

5 The sidebar "What Earth Didn't Know" cautions against judging pre-Incursion people for failing to anticipate what happened. Do you find this argument convincing? Is there a difference between understanding why people failed to see something coming and excusing that failure?

6 Think about your own daily life in 2140. Make a list of three technologies you use regularly that did not exist before 2040. For each one, try to imagine what your life would look like without it. What does this exercise tell you about how much the Incursion — and the decades that followed — changed the basic texture of Human existence?

Further Reading

Ashby, G. *Thirty Years at the Courier**: A Columnist's Memoir.* Wellington: Southern Press, 2041. (*Written after the First Incursion; Ashby addresses his pre-Incursion skepticism directly in Chapter 12.*)

Drummond, S. *The Last Normal Year: Earth in 2036*. Geneva: EarthGov Historical Press, 2089. A social history of the final full year before the Incursion, drawing on personal diaries, news archives, and oral histories to reconstruct daily life in the months before everything changed.

Osei-Bonsu, P. *Fossil Fuels and the Fracture Lines: Energy Politics on Pre-Incursion Earth*. Nairobi: Pan-African Academic Press, 2101. A detailed analysis of how fossil fuel competition shaped the geopolitical landscape that the Incursion disrupted.

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2

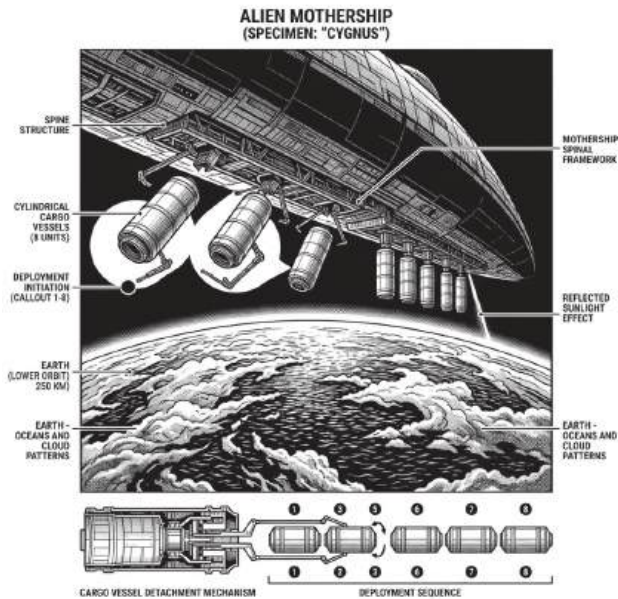
The First Incursion (2037)

By the end of this chapter, you should be able to:

- Describe the sequence of events of the First Incursion, from the mothership's arrival to the recovery of the tanker ships
- Explain how Earth's military responded to the Incursion and evaluate the effectiveness of that response
- Analyze why Earth's governments made the decisions they did, given the information available to them at the time
- Identify the ways in which science fiction shaped — and distorted — humanity's response to first contact with alien technology

At 3:14 in the morning, Greenwich Mean Time, on September 14, 2037, a satellite operated by the European Space Agency detected an anomalous mass in low Earth orbit. The automated alert it generated was routed to a monitoring station in the Netherlands, where it sat unread in a queue for eleven minutes before a night-shift technician named Pieter Hoorn opened it, read it twice, and picked up his phone. By the time Hoorn had reached his supervisor, the anomalous mass had been independently detected by military tracking stations in four countries. By the time those four countries had begun making calls of their own, the mass had resolved itself into something no existing category could comfortably contain: a ship.

We do not know what Pieter Hoorn said to his supervisor. The records from that monitoring station did not survive the years that followed, and Hoorn himself died in 2091 without ever giving a formal interview about that night. What we know is that the chain of phone calls, encrypted messages, and emergency protocols he set in motion — along with a dozen parallel chains initiated by those four military tracking stations — would, within hours, involve the leaders of nearly every government on Earth. The First Incursion had begun.



The Arrival

The ship that Hoorn's satellite had detected — what later accounts would universally call the **mothership** — was enormous. Estimates produced in the hours after its arrival, based on the limited visual data available, suggested a vessel more than one kilometer in length and more than two kilometers in circumference. Later analysis of satellite imagery would refine these figures somewhat, but the basic scale remained staggering. For comparison: the largest ocean-going vessels ever built by Humanity, the container ships of the early twenty-first century, measured roughly four hundred meters in length. The mothership was more than twice that. Any of the largest buildings that existed in Earth's major cities in 2037 would have appeared modest beside it.

The ship's exterior offered almost nothing to work with. It was a uniform, featureless dark gray — no visible windows, no obvious engines, no markings or insignia of any kind. Its surface showed few seams or joints. It generated no detectable radiation across any of the frequencies that Earth's instruments monitored. It was, in the most literal sense, silent. And it had arrived — this was the detail that would preoccupy analysts for years afterward — from above the **elliptic plane**, the flat disk of the solar system in which Earth and the other planets orbit the Sun. Almost all of Earth's astronomical attention was directed along that plane. Whatever had brought the mothership to Earth had not come from any direction that anyone had been watching.

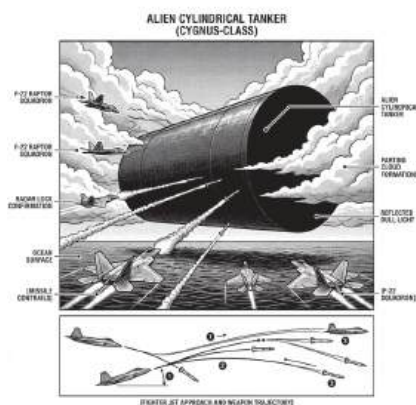
It held its orbit for less than an hour. Then, along seams that had been invisible until that moment, the ship's hull divided. Eight distinct vessels detached from a central, spine-like structure and began their descent.

The Tankers

The eight smaller ships — each still enormous by any Human standard — entered Earth's atmosphere and fanned out across the planet's surface. They settled into powered hovers above stretches of open ocean: two over the Pacific, two over the Atlantic, one each over the Indian Ocean, the Southern Ocean, the Arctic, and a stretch of the South Pacific so remote that the nearest land was more than a thousand kilometers away. Once in position, each ship began drawing seawater into itself through some

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mechanism that was not visible to external observation. There was no obvious intake structure, no visible vacuum or suction effect. The water simply rose, in a continuous stream, into the underside of each vessel.



Ground-based imaging, along with cameras aboard military aircraft dispatched to observe the ships, provided the best visual record of the tankers that survives. Each was roughly cylindrical, with one flattened, concave side — the side that had, evidently, been fitted against the spine of the mothership during transit. The ends were flat and featureless. Like the mothership, they emitted no detectable radiation. Unlike the mothership, they were close enough for observers to study in real time, and what those observers found was a vessel of extraordinary simplicity: almost entirely a large holding tank, supplemented by machinery whose purpose would take researchers years to fully untangle.

What the tankers were doing was obvious within minutes of their arrival. What was less obvious — what would remain a matter of serious debate for years — was why. Earth's oceans contain an almost incomprehensible volume of water, and whatever the eight tankers were collecting represented a trivially small fraction of that total. Were they sampling? Stockpiling? Performing some function that had nothing to do with water at all, and simply resembled water collection from the outside? Earth in 2037 had no way to ask, and no framework for interpreting the answer if one had been offered. The governments that now found themselves responsible for responding to the situation were working not from knowledge but from reflex.

The Response

Here is what Earth's military and political leaders knew, with confidence, in the first hour after the tankers began their descent: something enormous had arrived from space, had deployed eight smaller vessels, and those vessels were hovering over Earth's oceans doing something that looked very much like theft. Here is what they did not know: who had sent the ships, where they had come from, whether any living creatures were aboard them, what weapons if any they possessed, and whether the ships had any awareness of, or interest in, the people on the ground staring up at them.

In the absence of knowledge, institutions defaulted to their existing structures. Military commands activated emergency protocols. Heads of government were woken

and briefed. International communication lines — many of which were already active, as tracking stations around the world began sharing data — grew frantic with queries, updates, and the beginnings of arguments about what to do. No global coordination mechanism existed that was capable of producing a unified response in a matter of hours; the United Nations had no military capacity of its own, and its decision-making processes operated on timescales measured in days and weeks, not minutes.

What happened instead was something more organic, and more chaotic. Individual countries made individual decisions. Some launched military aircraft to observe the tankers; others launched aircraft with orders to do more than observe. Nuclear-armed nations began the procedural preparations for missile launch — not firing, not yet, but unlocking codes, alerting crews, completing the checklist steps that would need to be finished before a launch order could be executed. These preparations were visible to other nuclear-armed nations through their monitoring systems, which accelerated their own preparations. The process fed on itself. Within forty minutes of the tankers beginning their water collection, the machinery of response had achieved a momentum that was, in practical terms, very difficult to stop.

When the First Incursion occurred, the only framework most Human beings — including most of Earth's political and military leaders — had for thinking about alien contact was fiction.

Decades of novels, films, and television had populated the cultural imagination with a vivid and remarkably consistent set of images: flying saucers, invasion fleets, ray guns, tentacled monsters, and the occasional wise and benevolent emissary bearing warnings from the stars.

This was not a trivial problem. The fictional versions of first contact had conditioned people to expect things the real event did not provide: communication, explanation, visible intent. In the most common science fiction narratives, alien visitors either announced themselves clearly as enemies or clearly as friends. The tankers did neither. They were simply there, doing something, without explanation or apparent awareness of the panic below them.

Military planners in several countries later acknowledged that the decision to treat the tankers as hostile was not the product of deliberate analysis but of a kind of narrative gravity — the situation felt like an invasion, looked like an invasion, and therefore was treated as one. Whether a different cultural framework would have produced a different response is impossible to know. What we can say is that the science fiction problem did not disappear in 2037. It persisted, in subtler forms, through every stage of Humanity's subsequent

contact with Galactic civilization. We will encounter it again in later chapters.

The Attack and Its Outcome

The military response, when it came, was neither coordinated nor uncoordinated — it was something in between, a loose simultaneity of actions taken by different actors for different reasons at roughly the same time. Fighter jets from more than a dozen nations closed on the eight tankers with conventional munitions. More critically, the nuclear arsenals of the major powers were brought to bear on the mothership still in orbit, in what must have been one of the most consequential decisions ever made by a collection of human beings in the span of a single sleepless night.

The nuclear volley struck the mothership in a ragged sequence over the course of about four minutes. The result was total. The mothership was not damaged or disabled — it was vaporized, so completely that subsequent searches found only a diffuse field of microscopic debris in the orbital corridor it had occupied. Whatever it contained, whoever or whatever had crewed it or controlled it, was gone.

The effect on the tankers was immediate. The moment the mothership was destroyed, all eight ceased their water collection and attempted to move. The fighter aircraft that had been engaging them with conventional weapons had already inflicted meaningful damage on several, and the

sudden cessation of whatever control system had been operating them seemed to disrupt their ability to maneuver coherently. Two crashed into the ocean within minutes. Four attempted to rise toward orbit; one of these, damaged and trailing debris, was caught by a naval task force and destroyed by concentrated fire before it could escape. The remaining three of the four made it to orbit and vanished — whether they escaped the system entirely, or simply dispersed into a debris field too thin to track, Earth's instruments were never able to determine.

Two of the tankers that had initially lost control and appeared to be struggling to maintain their hover were caught by follow-up air strikes and forced into the ocean. That left five tankers accessible to recovery: seriously damaged, partially flooded, listing in the waters of four different oceans, but mostly intact. Oceangoing vessels from several nations converged on them within hours. The investigations that followed would occupy Earth's scientists for years — and the technologies those scientists extracted from the wreckage would transform the world.

What had Earth accomplished? It had defended itself, though against precisely what remained unclear. It had destroyed a vessel of unknown origin and purpose, along with whatever information that vessel might have contained. It had lost nothing — no Human aircraft were destroyed, no Human casualties were recorded in the military engagement itself. And it had, though no one knew this yet, announced its existence and its capabilities to an audience it had no idea was watching.

The morning of September 15, 2037, was a strange one on Earth. The tankers were down. The mothership was gone. The sky was quiet. In the absence of any further threat to respond to, governments and their populations were left to confront a question that military protocols had no procedure for answering: what did any of this mean?

Vocabulary

Incursion — An entry into a territory without permission or invitation, typically implying a hostile or unwelcome intrusion. The term became standard in Human historical writing to describe each of the three pre-Contact appearances of alien vessels in Earth space.

Elliptic plane — The flat, disk-like region of space in which Earth and the other planets of the solar system orbit the Sun. Because almost all bodies in the solar system travel within or close to this plane, Earth's astronomical attention was primarily directed along it. The mothership's arrival from above the plane — outside the zone of normal observation — meant it was not detected until it was already in orbit.

Intercontinental ballistic missile — A long-range nuclear weapon capable of being launched from one continent and striking a target on another, traveling through the upper atmosphere or low orbit during flight. The nuclear weapons used against the mothership were of this type. Their use against an extraterrestrial target was entirely without precedent.

Autonomous drone — A vehicle or device capable of operating without a human operator directly controlling it in real time. The tanker ships recovered from Earth's oceans showed no provision for crew quarters, biological life support, or manual controls, leading researchers to conclude they were autonomous — operated remotely or by onboard systems, without living occupants.

Elliptic plane — See above.

Mothership — The informal term adopted universally in early accounts to describe the primary alien vessel that arrived in Earth orbit during the First Incursion. The term was borrowed directly from science fiction, reflecting the cultural frameworks available to those doing the describing. It has remained in use in historical writing ever since, though scholars occasionally note its limitations as a technical description.

Primary Source

The following is an excerpt from an after-action report filed by Group Captain Maris Tenjin of the Royal Australian Air Force on September 16, 2037 — two days after the First Incursion. Tenjin commanded a squadron of F-42 strike aircraft dispatched to engage the tanker ship hovering above the southern Indian Ocean. The document was classified for eleven years before being released under EarthGov's Historical Transparency provisions in 2059. It is reproduced here from the official archive.

. . .

AFTER-ACTION REPORT — OPERATION SOUTHERN

WATCH Filing Officer: Group Captain M. Tenjin, RAAF

Date: 16 September 2037 **Classification at time of filing:**
SECRET

My squadron achieved visual contact with the object at 0612 local time. I confirm prior descriptions: cylindrical, dark gray, no visible propulsion, no visible crew apertures, hovering at approximately 180 meters above sea level. The object was drawing water. I could see this clearly. I want to be precise about that in this report because I am aware that some accounts have questioned whether the tankers were actually drawing water or performing some other function. From 200 meters, looking up at the underside of the object, with the sun at a useful angle, it was drawing water. There was a column of water rising into it. This is what I saw.

My orders were to engage and attempt to force the object down or disable it. I had eight aircraft under my command with full munitions loads.

I want to note, for the record, that I radioed Command at 0615 to request clarification on whether we were authorized to use nuclear-capable ordnance. Command confirmed we were not. We were conventional munitions only. I accepted this and proceeded.

The first pass did not produce obvious results. The munitions struck the object's hull and there was no visible detonation, no puncture, no response from the object. My

first thought was that the hull was impenetrable. My second thought was that the munitions had detonated but the object was simply large enough that the damage was not visible from outside at our scale.

The second pass produced visible results. There was a seam — a horizontal line around the object's midsection — that had not been visible before the first pass, and that I believe the munitions had opened or widened. The object began to descend slightly.

At 0631, the object stopped drawing water. I believe this was when the mothership was destroyed in orbit, although I had no confirmation of this during the engagement. The object began to move erratically — not evasive maneuvers, more like a vehicle whose driver has been incapacitated. A third pass, targeting the seam, brought it down into the water. It did not sink. It listed, badly, but it did not sink.

I circled the object twice after it came down. I do not have adequate language for what I was thinking at that point. I have included that observation because I believe it is relevant to any future review of my judgment during the engagement. I was functional. I was not impaired. I simply do not have adequate language.

— Group Captain M. Tenjin, RAAF, 16 September 2037

Tenjin's report is notable for several reasons. Its methodical precision — the careful establishment of what she saw, what her orders were, what she did, and what resulted — reflects the professional training of an

experienced military officer operating under extraordinary conditions. Equally notable is her final paragraph, in which she acknowledges, without apparent embarrassment, that she could not find words for the experience of circling a downed alien spacecraft. She does not attempt to supply words that were not available to her. Historians have cited this passage as one of the most honest sentences in the entire archive of First Incursion primary sources.

Review and Discuss

1 Describe the sequence of events during the First Incursion in your own words, from the initial detection of the mothership to the recovery of the five tanker ships. What happened, and in what order?

2 The chapter describes the military response as "neither coordinated nor uncoordinated." What does this mean? What factors made true coordination difficult, and what factors produced a loose kind of simultaneity anyway?

3 The sidebar on the "science fiction problem" argues that fiction shaped how Earth's leaders understood and responded to the Incursion. Do you agree that this was a problem? Could fiction have helped in any way, or did it only distort?

4 Group Captain Tenjin writes that she "does not have adequate language" for what she experienced after the engagement. What do you think she meant? Have you ever

experienced something for which you felt you lacked adequate language? What does it tell us about the Incursion that even a trained military officer felt this way?

5 Recall from Chapter 1 that Earth's population had almost no expectation that alien contact was possible. How do you think that prior conviction — the near-universal belief in Human uniqueness — affected how people interpreted what was happening on September 14, 2037? Would a population that already believed in alien life have responded differently?

6 The decision to launch nuclear weapons against the mothership was made in less than an hour, by multiple governments, without formal coordination. From the vantage point of 2140, how do you evaluate that decision? Consider both what the decision-makers knew at the time and what we now know about what the mothership might have contained.

Further Reading

Cheung, D. *The First Hour: A Minute-by-Minute Reconstruction of September 14, 2037*. Hong Kong: Pacific Rim Historical Press, 2105. An exhaustively researched account of the first sixty minutes of the Incursion, drawing on declassified military records, personal testimony, and communication logs from seventeen countries.

Hoorn, P. & Veltman, R. (eds.) *Night Shift: Personal Accounts of the First Incursion*. Amsterdam: European Historical Collective, 2077. A collection of first-person

accounts from military personnel, scientists, and civilians who were awake and working during the first hours of the Incursion. Includes Pieter Hoorn's only extended written account of his role in the initial detection.

Mbeki, A. *Shoot First: Military Decision-Making During the First Incursion*. Johannesburg: Southern African University Press, 2093. A critical analysis of the military response, arguing that the destruction of the mothership was a significant strategic error regardless of its tactical success.

Nakamura, S. *The Tankers: What We Found and What We Did With It*. Tokyo: Pan-Pacific Scientific Press, 2068. A technical history of the recovery and study of the five accessible tanker ships, written for a general audience by one of the lead researchers involved in the original investigations.

Osei-Bonsu, P. *Parallel Protocols: How Seventeen Nations Responded to the Same Event in Seventeen Different Ways*. Nairobi: Pan-African Academic Press, 2108. A comparative study of government responses to the First Incursion, documenting the remarkable variation in decision-making processes and outcomes across the major powers.

3

The Aftermath: Earth in Shock (2037–2039)

By the end of this chapter, you should be able to:

- Explain the social and psychological impact of the First Incursion on Earth's population in the months and years immediately following the event
- Describe the political changes that began during this period, including government collapses and early consolidation
- Identify the ways in which Earth's pre-existing divisions — religious, political, economic — shaped how different communities responded to the Incursion
- Analyze what the aftermath of the First Incursion reveals about how human societies respond to events that fall

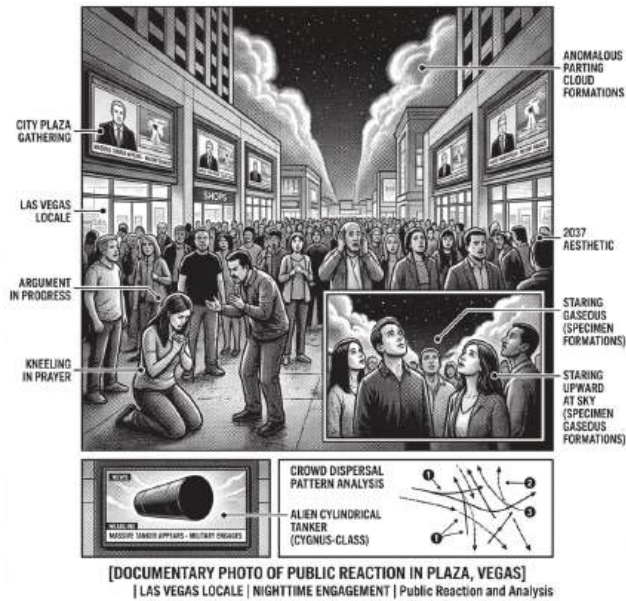
outside their existing frameworks for understanding the world

The ships were gone. The sky was quiet. And Earth had absolutely no idea what to do next.

In the hours after the last tanker ship came down, the immediate crisis was over — but the experience of crisis was not. The military had responded; the threat, such as it had been, was neutralized. What remained was something that militaries and governments are considerably less well-equipped to handle: the aftermath. The questions. The fear that did not dissipate simply because the immediate danger had passed. The slow, destabilizing realization that the universe was not what anyone had believed it to be twelve hours earlier.

The two years that followed the First Incursion are among the most thoroughly studied in modern historiography, and for good reason. They reveal, with unusual clarity, how human societies process events that exceed their existing categories — and what happens when those categories fail entirely.

A History of the Galactic War



The Immediate Response

Within hours of the Incursion, Earth's communications networks — already strained by the volume of official and military traffic during the event itself — were overwhelmed. As you read in Chapter 1, the internet of the 2030s had no reliable mechanism for distinguishing accurate information from false information. In the first days after the Incursion, that weakness became a catastrophic liability. Accurate reports from governments and news organizations competed with rumors, fabrications, and theories so varied and contradictory that many people simply could not determine what had actually happened. In some regions, early reports suggested that the military response had failed entirely and that the ships were still in orbit. In others, the rumor circulated that there had been no ships

at all — that the entire event was a coordinated deception by one government or another for purposes that varied depending on who was doing the speculating.

The conspiracy theories that proliferated in the days and weeks after the Incursion have been studied extensively, and they follow a pattern that historians of crisis have observed across many different events: when people cannot make sense of something, they construct explanations that restore a sense of human agency to the situation. An alien ship is terrifying partly because it implies a universe that operates outside of human control or comprehension. A government hoax, by contrast, implies that someone, somewhere, is in charge — which is, paradoxically, more comforting than the alternative. This does not make the conspiracy theories reasonable. It makes them understandable, which is a different thing.

What cut through the confusion, eventually, was the physical evidence. The five tanker ships were real, visible, and being surrounded by naval vessels from multiple nations. Journalists with cameras were on those vessels within days. Whatever people believed about the broader meaning of the Incursion, the ships themselves were very difficult to argue away. By the end of September 2037, the basic facts of what had happened were widely accepted, even if their implications were not.

Religious Response

Among the most documented social phenomena of the post-Incursion period was a dramatic surge in religious

participation across virtually every tradition on Earth. Attendance at churches, mosques, temples, and synagogues rose sharply in the weeks following the Incursion and remained elevated for months. New religious movements — some drawing on existing traditions, some representing genuine innovations — emerged rapidly, each offering frameworks for understanding what had happened and what it meant.

This was not a uniform phenomenon, and it would be a mistake to characterize it simply. For many people, existing religious frameworks provided genuine comfort and explanatory power. The Incursion raised profound questions about humanity's place in the universe — questions that religious traditions had been engaging with, in various forms, for thousands of years. The arrival of alien life did not, for most believers, invalidate those traditions. It complicated them, sometimes productively.

For others, the Incursion did produce a crisis of faith — particularly in traditions that had emphasized Human uniqueness or the special relationship between humanity and the divine. Theologians, religious scholars, and ordinary believers engaged in intense public debates about what the existence of other intelligent life implied for their beliefs. Those debates were not resolved in 2037 or 2038; some of them are still ongoing in some form today, though the specific terms have shifted considerably in a century of Galactic citizenship.

What the religious surge revealed, more than anything else, was the depth of the psychological disruption the Incursion

had caused. People seek meaning most urgently when meaning feels most absent. The weeks after the First Incursion were precisely that kind of moment.

The role of the internet in shaping the post-Incursion information environment deserves particular attention, because it illustrates a pattern that would repeat itself — in progressively higher-stakes forms — throughout the decades this book covers.

As Chapter 1 described, the internet of the 2030s was a single global network with no reliable authority structure. Anyone could publish anything. Reputation, credentials, and institutional affiliation provided some guidance to careful readers, but careful reading was not universal, and the sheer volume of content made comprehensive evaluation impossible even for those who tried.

In the aftermath of the Incursion, this produced what information scholars of the period called a "signal collapse" — a condition in which the volume of false or misleading information became so large that it effectively drowned out accurate reporting, not because the accurate reporting wasn't there, but because there was no reliable mechanism for distinguishing it from everything else.

The practical consequences were significant. In at least three countries, civil unrest was triggered or intensified by false reports that circulated online before official corrections could reach the same audiences. Emergency services in several major cities were overwhelmed by calls from people responding to events that had not occurred. Governments attempting to communicate accurate information found that their official statements reached only a fraction of the audience that the rumors had already reached.

Historians today sometimes ask whether the post-Incursion chaos would have been worse or better without the internet. The question is genuinely difficult. The internet also carried accurate information, enabled emergency coordination, and allowed people in different countries to confirm each other's accounts. The problem was not the network itself but the absence of any agreed-upon standard for evaluating what traveled across it — a problem that Earth would not fully solve until well after EarthGov's formation.

Civil Unrest and Political Instability

The social disruption of the post-Incursion months was not limited to confusion and religious searching. In many parts

of the world, it turned violent. Riots broke out in dozens of cities, driven by a combination of fear, anger at governments that had failed to warn their populations, economic disruption caused by the Incursion's immediate effects on global markets, and the general atmosphere of uncertainty that the conspiracy theories had amplified rather than resolved.

The regions most severely affected were those that had been most politically fragile before the Incursion. Several governments in sub-Saharan Africa, where political institutions had already been under pressure from internal conflict and economic stress, collapsed entirely in the months following the event. Similar collapses occurred in parts of Central Asia and in several smaller island nations whose governments had been dependent on external economic relationships that the post-Incursion disruption severed. In each case, the Incursion was less the cause of collapse than the final pressure applied to structures that were already failing — but the effect was the same. By the end of 2038, the number of recognized independent nations on Earth had fallen from approximately 195 to around 175, as collapsed governments were absorbed by neighbors or reconstituted under new arrangements.

Larger, more stable governments weathered the immediate period better, though not without difficulty. The major powers — what would shortly come to be called the Gang of Ten — all experienced significant internal unrest. Protests, strikes, and in some cases violent demonstrations challenged governments that had no adequate explanation for what had happened and no clear plan for what to do

about it. Leaders who had been elected or appointed to manage familiar problems now found themselves confronting a category of problem for which no playbook existed.

The political response to this pressure varied considerably. Some governments moved quickly to establish emergency coordination structures, sharing information and resources across borders in ways that their pre-Incursion rivalries might have made impossible. Others retreated into nationalism, restricting information and prioritizing their own military preparations over collective action. The tension between these two impulses — toward cooperation and toward self-protection — would define Earth's politics for the next decade.

What Persisted, and What Changed

By 2039, two years after the Incursion, Earth had not been transformed. This is worth stating plainly, because there is a temptation — in retrospect, from a vantage point where the transformation is obvious — to imagine that the Incursion immediately remade everything. It did not. People still went to work. Children still went to school. The arguments that had preoccupied the 2030s — about energy, about inequality, about the internet and its discontents — did not disappear.

What had changed was subtler, and in some ways more consequential. The assumption of Human uniqueness, which Chapter 1 identified as one of the defining convictions of pre-Incursion Earth, was gone. It could not

be recovered. The universe had answered the question of whether humanity was alone, and the answer had arrived in the form of ships over the ocean — not a radio signal, not a mathematical pattern, but physical objects that people had seen with their own eyes and touched with their own hands. Whatever else was uncertain, that was not.

The effect of this on human psychology is difficult to quantify but impossible to ignore. A civilization that knows it is not alone in the universe is a different thing from one that merely suspects it might not be. The knowledge changes the questions that feel worth asking. It changes what counts as a reasonable precaution. It changes, in ways that are hard to articulate but easy to recognize in the historical record, the texture of daily life. The Earth of 2039 looked, on the surface, much like the Earth of 2036. Underneath, it was already becoming something else.

Vocabulary

Civil unrest — A broad term for public disorder, including protests, riots, strikes, and other forms of collective action that disrupt normal social functioning. Civil unrest in the post-Incursion period was driven by a combination of fear, political frustration, and economic disruption.

Consolidation (political) — The process by which smaller or weaker political units are absorbed into larger ones, either voluntarily or by necessity. The political consolidation that began after the First Incursion reduced the number of independent nations on Earth and set the stage for the eventual formation of EarthGov.

Xenophobia — Fear or hostility toward that which is foreign or unknown. In the pre-Incursion era, the term was used primarily to describe hostility toward people of other nations or cultures. After the Incursion, it took on an additional meaning: fear or hostility toward non-Human intelligent life. Historians use "early human context" to distinguish the former usage from the latter.

Signal collapse — A term used by information scholars of the period to describe the condition in which the volume of false or misleading information in a communications network becomes so large that accurate information is effectively obscured, not through censorship but through competition.

Primary Source

The following excerpts are drawn from the personal diary of Isabela Carvalho, a fourteen-year-old resident of São Paulo, Brazil, in the weeks following the First Incursion. The diary was donated to the South American Historical Archive by Carvalho's family in 2089, following her death at the age of sixty-six. It is one of thousands of personal accounts collected by the Archive as part of its ongoing Voices of the Incursion project. Three entries are reproduced here.

17 September 2037

School is closed. Mãe says it will be closed all week. Papai has been on the phone since yesterday morning and will not tell us what is happening except to say that everything is fine, which means everything is not fine. The television is showing the same pictures over and over — the ships over the water, the jets, the explosions. I have watched it so many times that it does not look real anymore. It looks like a film.

My friend Giovana says her uncle says the whole thing was done by the Americans. I don't think that's true. The ships were too big. Nobody builds something that big.

I don't know what I think. I don't think I have words for what I think.

2 October 2037

School opened again on Monday. It was strange being there. Nobody wanted to talk about the normal things. In history class, Senhor Almeida spent the whole period talking about the Incursion instead of what we were supposed to be studying, and nobody complained. He said that what happened is the most important event in human history. He said we would spend our whole lives understanding what it means.

On the way home, Ana and I walked past the Igreja do Bom Jesus and there was a line around the block. There is always a line now, Mãe says. She has been going on Sundays and also sometimes on Wednesday evenings. Papai doesn't go. They argue about this but quietly, after they think we are asleep.

I looked up at the sky for a long time tonight. It

looked the same as always. I don't know if that is comforting or not.

28 October 2037

There were riots in the center of the city last week. We could hear it from our apartment — not the words, just a kind of roar. The news said it was about the government, about why they didn't warn us, about what they are planning to do. I understand being angry. I am angry too, sometimes. But I don't know who to be angry at.

Things are more normal now, in the ways that matter. School, dinner, homework. Papai is less quiet. But it is a different kind of normal than before. It is like when you rearrange the furniture in a room — everything is the same but it is in different places and you keep reaching for things where they used to be.

I am fourteen years old and I know something now that nobody knew a month ago. I don't know what to do with that.

— Isabela Carvalho, São Paulo, Brazil, 2037

Carvalho's diary entries are representative of a large body of personal writing produced in the immediate post-Incursion period: thoughtful, uncertain, and acutely aware that something had shifted in ways that could not yet be named. Her observation that the post-Incursion normal felt like "rearranged furniture" became one of the most-quoted phrases in the historiography of the period after the diary's

publication. What the diary cannot tell us — what no personal account from this period can fully tell us — is how the experience of this moment shaped the adult Carvalho became, and the world she went on to inhabit. That story belongs to the chapters that follow.

Review and Discuss

1 The chapter identifies several distinct social responses to the First Incursion: conspiracy theories, religious surges, civil unrest, and political instability. What do these responses have in common? What do they suggest about how human beings process events that fall outside their existing frameworks?

2 In Chapter 1, you read that the internet made it difficult to distinguish accurate information from false information. How did this problem manifest specifically in the aftermath of the Incursion? What were the practical consequences of what the chapter calls "signal collapse"?

3 The chapter states that "the Incursion was less the cause of collapse than the final pressure applied to structures that were already failing." What does this mean? Can you think of examples, from the chapter or from your own knowledge of the period, that support or complicate this claim?

4 Isabela Carvalho writes that the post-Incursion normal felt like "rearranged furniture — everything is the same but

it is in different places and you keep reaching for things where they used to be." What do you think she meant by this? How does her metaphor help explain the psychological experience the chapter describes?

5 The chapter argues that the disappearance of the assumption of Human uniqueness was among the most consequential changes the Incursion produced — more consequential, in some ways, than the physical events themselves. Do you agree? How would knowing, with certainty, that you were not alone in the universe change how you thought about the problems in front of you?

6 You live in 2140, more than a hundred years after the events described in this chapter. Galactic citizenship is a normal part of your life. What aspects of the post-Incursion panic described here seem most foreign or surprising to you? What aspects seem most understandable, even from your vantage point?

Further Reading

Carvalho, I. *Rearranged Furniture: The Diary and Later Writings of Isabela Carvalho*. São Paulo: South American Historical Archive Press, 2091. The complete diary, together with a selection of essays Carvalho wrote in later life reflecting on the post-Incursion period and her own experience of it.

Dembélé, O. *Faith and the Unknown: Religious Responses to the First Incursion Across Five Traditions*. Dakar: West African University Press, 2103. A comparative study of how

Buddhist, Christian, Hindu, Islamic, and Jewish communities interpreted and responded to the Incursion, drawing on sermons, theological writings, and congregational records from the period.

Ferreira, M. *Collapse and Consolidation: Political Instability in the Post-Incursion Period, 2037–2042*. Rio de Janeiro: Latin American Academic Press, 2096. A detailed account of the governments that failed in the aftermath of the Incursion, with particular attention to the regions of sub-Saharan Africa and Central Asia where institutional collapse was most severe.

Lindqvist, H. *The Roar in the Streets: Civil Unrest and the Post-Incursion City*. Stockholm: Nordic Historical Press, 2088. A social history of urban protest and riot in the two years following the First Incursion, combining archival research with oral histories from participants and bystanders.

Watanabe, K. *Signal Collapse: Information, Misinformation, and the Post-Incursion Media Environment*. Osaka: Pacific Rim Media Studies Press, 2079. A rigorous analysis of how information spread — and failed to spread — in the weeks after the First Incursion, with recommendations that influenced EarthGov's early communications policy.

4

Discoveries (2040)

By the end of this chapter, you should be able to:

- Identify the key technologies derived from the recovered alien ships and explain how researchers isolated and understood them
- Explain how the quantum tap worked and why it was transformative for Earth's energy situation
- Describe the quantum-entangled communicator and explain what made it so significant
- Analyze how the discoveries of 2039–2040 began to shift Earth's attention — gradually, and not without resistance — from inward to outward

While Earth's streets were still processing the shock of the First Incursion, its laboratories were already at work. The five recovered tanker ships had been towed to secure facilities within weeks of coming down — a naval research station in the South Atlantic, a converted dry dock in South Korea, a classified inland site in central Australia, and two facilities in the United States whose locations remained classified for more than two decades after the events described in this chapter. The scientists and engineers assigned to study them worked under extraordinary conditions: extraordinary secrecy, extraordinary pressure, and the extraordinary psychological weight of handling objects that no human being had made.

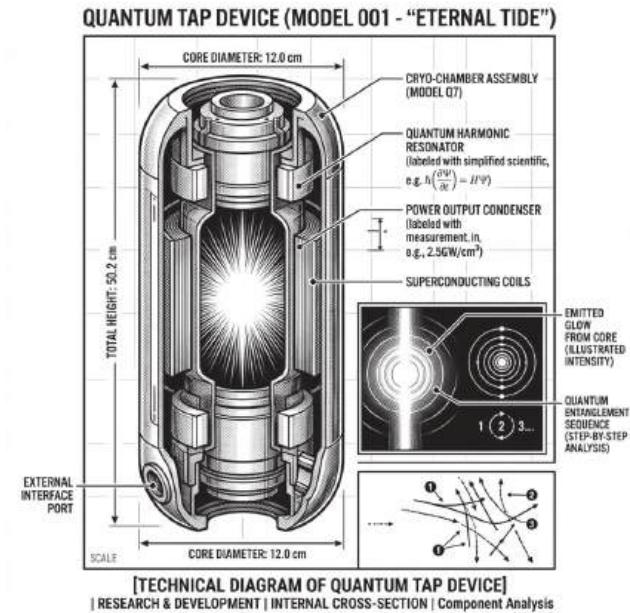
What they found, over the course of roughly two years, would do more to reshape human civilization than any discovery in recorded history. It is worth pausing on that claim, because it is not made lightly. The printing press, the steam engine, the discovery of electricity, the development of antibiotics — each of these transformed the world. The technologies extracted from the alien tankers transformed it more completely, more rapidly, and in more dimensions simultaneously than any of those. Students in 2140 live inside the consequences of what those researchers found. The quantum tap powering your personal device, the QEC network connecting you to friends on the other side of the planet, the artificial intelligence systems that manage Earth's weather and logistics — all of it traces back, in direct and documentable lineage, to five damaged alien ships sitting in secured facilities in 2038.

Understanding how those discoveries happened — not just what was found, but how researchers figured it out — is part of understanding why they mattered so much.

The Quantum Tap

The first major breakthrough came from the ships' power systems. Researchers had identified what appeared to be a primary power source on each vessel relatively quickly; its central location, its connections to other ship systems, and its consistent presence across all five ships made it an obvious priority for investigation. What took longer was understanding what it actually was.

The device was small — surprisingly, almost insultingly small, given the size of the ships it powered. The main unit on each tanker occupied roughly the volume of four personal ground vehicles parked in a square. It had no moving parts. It produced no exhaust, no detectable radiation, no waste heat in any meaningful quantity. It simply sat there, and power came out of it — steady, clean, and apparently limitless.



The research teams' first challenge was determining how the device worked at all. It connected to other ship systems through interfaces that were, once understood, relatively straightforward — power went in one direction, control signals in another. But the source of the power was not immediately apparent. There was no fuel input. There was no reaction chamber. There was nothing that corresponded to any known method of energy generation. A team at the South Korean facility spent nearly three months pursuing the hypothesis that the device was simply a very efficient battery — storing energy that had been loaded into it before the ships left wherever they came from. That hypothesis collapsed when calculations showed that the amount of energy the device had already delivered, across the weeks of study, exceeded any plausible storage capacity by several orders of magnitude.

The correct understanding came from a physicist named Dr. Amara Osei, working at the Australian facility, who published an internal technical paper in late 2038 arguing that the device appeared to be drawing energy directly from quantum fluctuations in spacetime — essentially, tapping into the background energy that theoretical physics had long held must exist at the smallest scales of the universe. The paper was met with considerable skepticism. It required, among other things, accepting that the theoretical energy density of quantum vacuum fluctuations was not merely a mathematical curiosity but a practically accessible resource. Earth's own physics had suggested this was possible. Earth's own engineers had never come close to doing it.

The name that stuck — **quantum tap** — was informal at first, appearing in internal communications before any official designation was settled. It was accurate in the way that good informal names often are: it described exactly what the device did. It tapped the quantum substrate of the universe for energy, the way a pipe taps a water main. The supply, for all practical purposes, was without limit.

Replication took another year. A team combining researchers from six countries succeeded in producing a functional duplicate in mid-2039 — smaller than the original, less efficient, but genuinely operational. The abstract announcing this achievement was published in a restricted scientific journal in early 2040. Within months, production facilities were being established. Within two years, quantum taps were powering military installations across the planet. The fossil fuel era, which had defined

human civilization for two centuries, had effectively ended — though the transition would take years to complete, and the economic disruption it caused was significant in its own right.

The quantum tap in your personal device is, in most meaningful respects, unrecognizable compared to the units recovered from the alien tankers in 2037. This is worth appreciating, not because the original devices were primitive — they were not, by any standard — but because the century of refinement that followed has been so thoroughgoing.

The original tanker units occupied the volume of four ground vehicles. The quantum tap in a standard 2140 personal communications device occupies roughly the volume of a grain of rice. The original units delivered power output sufficient to run a small city block. The personal device unit delivers enough power to run your device and several like it, with nothing wasted. The original units operated within a fairly narrow efficiency band and required substantial shielding to interface safely with other equipment. Modern units are self-regulating, self-shielding, and capable of adjusting their output dynamically in response to demand.

What has not changed is the fundamental principle. Every quantum tap ever built, from

the alien originals to the one in your pocket, does the same thing: it draws energy from the quantum vacuum, converting what theoretical physics describes as the universe's irreducible background energy into usable electrical power. The universe, it turns out, is not running out of energy. We simply needed someone to show us where the tap was.

In everyday terms, the difference a century of development has made is this: in 2040, a quantum tap was an enormous military and industrial asset, carefully controlled and rationed. By 2060, most households on Earth had at least one. By 2090, the idea of a home or vehicle without one had become difficult for most people to imagine. By 2140, the question of where your power comes from has become approximately as interesting as the question of where your air comes from — which is to say, you probably haven't thought about it today.

The QEC

The second major discovery of the period emerged almost accidentally from the first. Researchers attempting to understand the quantum tap's internal mechanisms encountered a secondary phenomenon that, at first, seemed like an interesting anomaly: certain paired components within the device appeared to be

communicating with each other instantaneously, regardless of the physical distance between them. When researchers physically separated these components — removing them from the device entirely and placing them at opposite ends of a facility — the instantaneous communication continued. When they moved one component to a different building, the same thing happened. When they shipped one component to a partner facility in another country, still the same.

What they had stumbled onto was quantum entanglement at a practical scale — a phenomenon that Earth's physicists had understood theoretically for decades but had never been able to deploy usefully. The alien technology had solved, apparently as an engineering matter rather than a theoretical one, all of the problems that had prevented Human scientists from making entanglement work outside of carefully controlled laboratory conditions. The implications were immediate and obvious to everyone involved: this was a communications system. A communications system with no signal to intercept, no transmission delay regardless of distance, and no infrastructure requirement beyond the paired devices themselves.

The **quantum-entangled communicator** — almost immediately shortened to **QEC**, or occasionally referred to by the older science fiction term **ansible**, which several researchers used in early internal memos before more formal language was established — entered production even faster than the quantum tap. The engineering challenges were less severe, the materials requirements

were more manageable, and the military demand was overwhelming. Within eighteen months of the first successful replication, QEC networks were operating between Earth's major military commands. Within three years, personal QEC devices were in limited civilian production.

The effect on Earth's communications landscape was immediate and, in retrospect, somewhat ironic. The internet — that single fragile network whose limitations Chapter 1 and Chapter 3 described in some detail — did not disappear overnight. But it began, almost immediately, to be supplemented and then supplanted by QEC-based networks that were faster, more secure, and structurally incapable of the kind of signal collapse that had caused so much damage in the post-Incursion months. The transition was not painless; enormous economic interests were bound up in internet infrastructure, and the companies and governments that owned that infrastructure did not yield their positions without significant political resistance. But the direction of travel was clear from the beginning, and it did not reverse.

Quantum Computing and Early AI

The third and fourth discoveries of the period were, in a sense, consequences of the first two. The quantum tap provided power that made large-scale quantum computing practical. The QEC provided communication infrastructure that made distributed quantum computing possible. The combination unlocked, within a relatively short time,

computing capabilities that Earth's engineers had been theorizing about for decades without being able to implement.

Quantum computing operated on principles fundamentally different from the classical computing that had powered Earth's digital revolution. Where classical computers processed information in binary states — each unit of information was either a zero or a one — quantum computers processed information in superposed states, performing many calculations simultaneously in ways that classical systems could not replicate. The result was a class of machine that could solve certain categories of problem — optimization, pattern recognition, simulation of complex systems — at speeds and scales that classical computers could not approach.

The most consequential application of these new computing systems, in the years immediately following their deployment, was the acceleration of **artificial intelligence** research. Earth's AI work had been advancing steadily through the 2030s, but had been constrained by the computing resources available to it. With quantum computing suddenly accessible, those constraints lifted. The AI systems that emerged from the research programs of 2040–2045 were not sentient — that point deserves emphasis, because the word "artificial intelligence" carries connotations in 2140 that it did not carry then. They were, however, genuinely impressive: capable of ingesting and analyzing enormous datasets, identifying patterns invisible to human researchers, and making predictions of practical

value across fields ranging from materials science to logistics to climate modeling.

The military received the majority of early quantum computing output, as it had received the majority of early quantum tap and QEC production. But enough reached civilian research institutions to begin reshaping those fields, and the effects compounded quickly. By the mid-2040s, an Earth that had entered 2037 running on burning ancient organic matter for power and communicating through a single vulnerable global network was already, in its laboratories and military installations if not yet in its streets, a substantially different civilization.

Vocabulary

Quantum tap — A compact energy-generation device, first recovered from the alien tanker ships and later replicated by Human researchers, that draws power directly from quantum fluctuations in the fabric of spacetime. Quantum taps produce clean, effectively limitless energy with no fuel input and no waste products. They are the primary power source for virtually all technology in use in 2140.

Quantum entanglement — A phenomenon in quantum physics in which two particles become linked such that the state of one is instantly reflected in the state of the other, regardless of the physical distance between them. The alien tanker ships contained components that exploited this phenomenon at a practical scale, leading to the development of the QEC.

QEC (quantum-entangled communicator) — A communications device that uses quantum entanglement to transmit information instantaneously across any distance, with no signal propagation delay and no transmission infrastructure required beyond the paired devices themselves. Also referred to in some early sources as an ansible. QEC networks replaced internet-based communications infrastructure over the course of the 2040s and 2050s.

Ansible — An informal term, borrowed from pre-Incursion science fiction, for a device capable of instantaneous communication across any distance. Used in some early internal research documents to describe the QEC before formal terminology was established. Occasionally still used colloquially.

Quantum computing — A form of computation that uses quantum mechanical phenomena to process information in fundamentally different ways from classical binary computing. Quantum computers are dramatically faster than classical computers at certain categories of problem, including optimization, pattern recognition, and complex system simulation.

Artificial intelligence — In its 2040-era definition, software systems capable of analyzing large datasets, identifying patterns, and making predictions or recommendations without explicit human programming for each task. Distinguished from the machine intelligence encountered later in this history: 2040s-era AI systems were tools, not minds.

Primary Source

The following is an article published by TechHorizon, a popular science and technology news outlet, on February 28, 2040. The article reported on the restricted scientific publication announcing the first successful replication of the quantum tap, details of which had been officially released to selected press organizations the previous day.* TechHorizon was one of the most widely read science publications of the pre-EarthGov era, known for accurate reporting on technical subjects for a non-specialist audience. The article is reproduced here from the TechHorizon digital archive, which was preserved as part of EarthGov's Historical Media Collection.*

They Built One. It Works. Nothing Will Ever Be the Same.

TechHorizon Staff | February 28, 2040

Yesterday, a joint research team whose members we are not yet permitted to name confirmed something that most of the physics community had quietly accepted for about six months: they built a quantum tap, it works, and the age of fossil fuels is now, effectively, over.

The official publication, released in a restricted scientific journal under a title too dry to reproduce here, is careful to hedge. The replicated device is described as "functional

but not yet optimized," operating at somewhere between thirty and forty percent of the efficiency of the alien originals. The authors note, with admirable scientific caution, that further engineering work will be required before large-scale production is feasible.

What the official publication does not say — but what our conversations with three researchers familiar with the project make very clear — is that the remaining engineering challenges are engineering challenges, not physics challenges. The hard part, it turns out, was understanding what the device was doing. Now that the team understands that, making it do it better is a matter of iteration. Expensive, time-consuming, painstaking iteration — but iteration nonetheless.

So what does the quantum tap actually do? Here is the version that does not require a graduate degree: the universe, at scales far smaller than any atom, is not empty. It is a seething field of energy fluctuations — particles popping in and out of existence, energy constantly shifting between states. Physicists have known about this for almost a century. What they could not figure out was how to access it. The alien technology figured it out. It reaches into that background energy field and pulls from it, the way you might pull water from a river with a bucket. The river doesn't notice. The bucket fills. The bucket, in this case, is whatever you want to power.

The implications are not complicated, though they are large. Free energy. Clean energy. Energy with no fuel cost, no supply chain, no geopolitical leverage. The single most

fought-over resource in the history of human civilization becomes, over whatever timeline it takes to manufacture enough of these devices, irrelevant.

We have been asking our physics correspondents for weeks whether there is a catch. The honest answer, they tell us, is: not one we can find yet. The quantum vacuum appears to be, for all practical purposes, inexhaustible. The devices produce no waste. They require no input. They simply work.

We will note, because we think it is worth noting, that the device that started all of this was recovered from an alien spaceship that arrived without warning, helped itself to our seawater, and was shot down by our militaries. The universe, it seems, sometimes delivers gifts in the strangest packaging.

— *TechHorizon Staff*

The TechHorizon article was read by an estimated 340 million people in the forty-eight hours following its publication, making it one of the most widely circulated pieces of science journalism in the pre-EarthGov era. Its tone — confident, accessible, and only lightly awed — was characteristic of the publication's house style, and reflects the particular cultural moment of early 2040: a world still processing the psychological shock of the Incursion, now confronted with the possibility that the ships it had shot down contained something extraordinary. The article's final paragraph, noting the irony of the discovery's origins, was quoted in editorials in more than sixty countries.

Review and Discuss

1 The chapter describes the quantum tap discovery as more transformative than the printing press, the steam engine, or antibiotics. Do you agree with this assessment? What criteria would you use to evaluate it, and how does the quantum tap measure up against those criteria?

2 The QEC was discovered, the chapter says, "almost accidentally" — as a byproduct of research into something else. Can you think of other examples, from this book or from your general knowledge, of important discoveries that emerged from unexpected directions? What does this suggest about how scientific research should be organized and funded?

3 The *TechHorizon* article ends by noting the irony that a civilization-transforming discovery arrived inside alien ships that humanity immediately tried to destroy. What do you make of this irony? Does it change how you think about the decision to attack the tankers, described in Chapter 2?

4 The sidebar on the quantum tap notes that by 2140, most people never think about where their power comes from. What other technologies in your daily life are you similarly unaware of — things so fundamental to your experience that you rarely consider how they work or where they came from? What does this tell us about how quickly transformative technologies become invisible?

5 Recall from Chapter 3 that the post-Incursion period was characterized by fear, confusion, and civil unrest. How do you think the news of the quantum tap replication — arriving in early 2040, roughly two and a half years after the Incursion — affected public mood? Would it have been reassuring, or would it have raised new anxieties?

6 The chapter carefully distinguishes between the artificial intelligence of the 2040s and the machine intelligence encountered later in this history. Why do you think that distinction matters? Based on what you know about the events that follow, why might the difference between a tool and a mind be important?

Further Reading

Asante, K. *Free Energy: The Political Economy of the Quantum Tap Transition, 2040–2060*. Accra: West African Economic Press, 2099. An analysis of how the arrival of quantum tap technology disrupted fossil fuel industries, economies, and geopolitical relationships, with particular attention to nations whose power had rested on energy resource control.

Bergström, L. *The Vacuum Engineers: How a Joint Research Team Replicated the Impossible*. Stockholm: Nordic Scientific Press, 2071. A detailed account of the quantum tap replication project, written with access to classified records released under EarthGov's transparency provisions. The most authoritative account of how the replication was actually achieved.

Osei, A. *Tapping the Vacuum: My Years at the Australian Facility*. Nairobi: Pan-African Academic Press, 2069. A memoir by the physicist whose internal paper first proposed the correct theoretical framework for the quantum tap. Combines personal narrative with accessible explanations of the underlying physics.

Petrov, I. & Zhang, M. *Entangled: The Development of the QEC and the End of the Internet Age*. Moscow: Eurasian Historical Press, 2088. A comprehensive history of the QEC's development and deployment, including the political and economic battles that accompanied the transition away from internet-based communications infrastructure.

Sharma, D. *The Thinking Machines: Artificial Intelligence Research in the Decade After the Incursion*. Mumbai: South Asian Academic Press, 2095. A history of AI development between 2037 and 2050, tracing how the combination of quantum computing and alien-derived insights accelerated a field that had been advancing steadily but slowly for decades.

Yoshida, P. *Signal and Noise: A History of TechHorizon**, 2009–2061.* Tokyo: Pacific Rim Media Studies Press, 2078. A history of the publication that broke the quantum tap story to a mass audience, including extensive coverage of its role in science communication during the post-Incursion decade.

5

Discoveries: Power and Consequences (2040–2041)

By the end of this chapter, you should be able to:

- Explain how new military technologies created a power vacuum in the years following the First Incursion
- Describe the Night of Horror and its immediate effects on Earth's political and social landscape
- Evaluate the ethical implications of the Gang of Ten's actions from multiple historical perspectives
- Analyze how a single night of violence paradoxically accelerated Earth's path toward global unity

In February 2040, the *TechHorizon* article announcing the quantum tap replication was read by an estimated 340 million people in forty-eight hours. The mood it captured — cautious, awed, tentatively hopeful — was genuine. After two and a half years of fear and confusion, here was something that felt like an answer. The universe had sent ships to steal Earth's water, and Earth had shot them down, and inside those ships was a technology that would end the fossil fuel age. There was, in that moment, a real sense that the worst was behind humanity, and that what lay ahead might be extraordinary.

Four months later, the Gang of Ten destroyed more than a dozen nations in a single night.

It is important to hold both of those facts at once, because the people who lived through this period had to. The spring of 2040 was a moment of genuine hope. The summer of 2040 was something else entirely. Understanding how one followed so quickly from the other requires understanding something that the *TechHorizon* article, for all its clarity, did not address: what Earth's major military powers had been doing with their new technologies while the laboratories were making their discoveries.

The Power Vacuum

As Chapter 4 described, the quantum tap, the QEC, and the new generation of quantum computers were allocated, in the first instance, almost entirely to military use. This was not incidental. The Gang of Ten — Earth's ten largest economies, the nations that had effectively taken joint

responsibility for planetary defense — had made a deliberate decision in the months after the First Incursion to direct their military attention outward. The threat, as they understood it, came from space. Their resources, their planning, and their best minds were focused on that threat.

The consequence of this outward focus was a power vacuum on the ground. The major militaries had, to a significant degree, stood down from their traditional roles as regional deterrents. The implicit threat that had kept smaller, more aggressive states from acting on their worst impulses — the knowledge that a larger neighbor's military might respond — had receded. Some nations noticed.

The incidents that followed were not, individually, unprecedented. The Kovaris Coup of 2039, in which a military faction in a small Central African nation seized power and began systematic violence against civilian populations, was brutal but not historically unique. The Tassara Conflicts, a series of cross-border raids between three neighboring states in the same region that escalated through late 2039 and into 2040, were the kind of regional violence that had occurred many times before in that part of the world. The Mbeya Massacres, in which a government turned its military against an ethnic minority within its own borders over the course of several weeks in early 2040, were atrocities of a type that history, tragically, had seen before.

What made these incidents different was their context. They were occurring while the major powers were engaged elsewhere — mentally and materially focused on alien

threats, on the asteroid belt, on the mathematics of solar system defense. And they were occurring with a new kind of weapon available to those committing them: railguns powered by quantum taps, capable of delivering catastrophic force with no radiation, no lasting environmental signature, and no munitions supply chain to interrupt. The new technologies that were transforming Earth's defensive capabilities were, in the wrong hands, equally effective for offensive use against civilian populations.



The Decision

The Gang of Ten had been monitoring these developments with growing unease. The internal communications of that period — many of which remained classified until 2098 —

reveal a group of governments increasingly frustrated by what they perceived as a distraction from the primary mission of planetary defense, and increasingly alarmed by the scale of violence being perpetrated with technologies that their own research had, indirectly, enabled. The arguments within the Gang of Ten about what to do were not simple, and they were not unanimous. Some members pushed for conventional diplomatic and military intervention — deploying peacekeeping forces, imposing sanctions, working through what remained of international institutions. Others argued that conventional responses would be too slow, too uncertain, and too expensive in terms of the military resources now needed for space-based defense.

The argument that prevailed was the one that history has found most difficult to accept: that the fastest, most certain, and most resource-efficient solution was also the most extreme one. The aggressor states — identified through intelligence gathering, QEC-coordinated surveillance, and the Hy'anx-style bureaucratic thoroughness that the Gang of Ten's new AI systems were beginning to make possible — would simply be removed. Not defeated. Not occupied. Removed.

The decision was made at a level of secrecy that even today is not fully reconstructed. No single document has ever been found that records the vote, the debate, or the individuals most responsible for the final order. What we have are the results.

The Night of Horror

On the night of June 6, 2040, orbital railgun platforms — Winchester-class weapons that had been quietly repositioned over the preceding weeks — fired on targets across a region of sub-Saharan Africa. The strikes were coordinated, precise, and completed within a period of approximately four hours. By morning, the governments identified as aggressors had ceased to exist, along with the populations — military and civilian — of the territories they controlled. Entire communities were gone. The physical geography remained; the people did not.

The weapons used produced no radiation and no lasting atmospheric contamination beyond the dust and debris of destruction itself — dust that the atmospheric moderators, already deployed across the planet, would address in the months that followed. From a purely technical standpoint, the operation was, by the standards of its time, clean. From any human standpoint, it was something else.

Earth's population learned what had happened through a combination of official statements and the evidence of satellite imagery that began circulating within hours. The reaction was not uniform. In some places, there was shock so profound it produced silence — a suspension of normal response that psychologists of the period documented and struggled to explain. In others, there were protests, vigils, expressions of grief for populations that most of the protesters had never thought about before that morning. In still others, particularly in regions that had suffered from the aggressor states' violence, there was something more

complicated: relief, mixed with horror at the relief, mixed with anger at the circumstances that had made such a response feel, to some, like the only option.

More than a century after the Night of Horror, historians and legal scholars continue to debate how it should be understood. The debate is not academic. It touches on questions that remain live in Galactic legal contexts: what constitutes a proportionate response to aggression, who has the authority to make that determination, and whether the end of preventing greater suffering can justify the means of causing it.

Those who argue that the Night of Horror constituted a war crime — and this view is well-represented in serious scholarship — point to several factors. The populations destroyed included civilians who bore no individual responsibility for their governments' actions. No legal process, however imperfect, determined guilt or proportionality. The decision was made by ten governments acting without any broader international mandate. And the secrecy surrounding the decision suggests that those who made it understood, on some level, that it could not survive public scrutiny.

Those who argue that the Night of Horror, whatever its moral cost, was a rational response

to genuine crisis point to different factors. The violence being committed by the aggressor states was ongoing and severe. Conventional intervention had been tried and had failed, repeatedly, across decades of similar conflicts. The Gang of Ten calculated, and subsequent history suggests they were not wrong, that the speed and certainty of the action would end hostilities more quickly and with fewer total deaths than any alternative. The Earth they were trying to protect faced an existential threat from space; they could not afford the distraction.

Neither argument fully satisfies. The best that honest historians can offer is this: the Night of Horror was a decision made by human beings under extraordinary pressure, with imperfect information, using reasoning that was comprehensible even where it was not defensible. Understanding it does not require accepting it. Rejecting it does not require pretending it was incomprehensible.

This debate is worth having. Your teacher may want to structure a class discussion around it. There is no correct answer in the back of this book.

The Aftermath

The immediate effect was precisely what the Gang of Ten had calculated. Hostilities across the planet ceased. Not gradually, not partially — essentially completely, within days. The mechanism was not complicated: every government on Earth had just received a demonstration of what the major powers were now capable of and willing to do, and every government on Earth drew the same conclusion about the wisdom of further aggression.

The Gang of Ten's spokesperson — speaking, notably, on behalf of all ten governments simultaneously, the first time they had ever presented a fully unified public face — offered a statement the morning after. The rioting that had been occurring in some cities also stopped, more gradually but just as certainly. People were frightened. They were also, many of them, exhausted. The years since the First Incursion had been years of sustained anxiety, and the Night of Horror, for all its horror, had a paradoxical clarifying effect: this, clearly, was what the world had become. The old arguments about sovereignty, about national interest, about who owed what to whom — all of it seemed suddenly smaller in the face of what had just happened and what it implied about the future.

Several smaller nations, in the weeks that followed, voluntarily approached larger neighbors to negotiate merger or formal alliance. The process of political consolidation that had begun slowly after the First Incursion accelerated sharply. The world that would, within a few years, become EarthGov was already taking shape —

not because anyone had planned it that way, but because the Night of Horror had made the old shape untenable.

History does not move cleanly. The spring of 2040 had offered hope; the summer had delivered atrocity; the autumn brought a strange, exhausted, wary quiet that was not peace but was at least the absence of open violence. Earth gathered itself. There was a great deal of work to do.

Vocabulary

Rail gun — A weapon that uses electromagnetic force, rather than chemical propellants, to accelerate a projectile to extremely high velocities. Quantum tap-powered railguns of the 2040s were dramatically more powerful than their early twenty-first century predecessors, capable of delivering force equivalent to hundreds of megatons with no radiation and no conventional munitions requirement.

Sabot round — The type of projectile fired by railgun systems. A sabot round is a dense, aerodynamically optimized mass — typically composed of iron, composite materials, or asteroid-derived debris — designed to deliver maximum kinetic energy on impact. The term comes from a French word for a type of shoe, referring to the casing that holds the round during acceleration and falls away after firing.

Megatons — A unit of energy equivalent to the explosive force of one million tons of conventional explosive. Used as a standard measure for large-scale weapons yields. A

single quantum tap-powered Winchester-class sabot round of the 2040s delivered in excess of 180 megatons of kinetic energy on impact.

Atmospheric moderator — A large, airborne platform powered by quantum tap rotors, deployed in the early 2040s to address atmospheric damage caused by decades of fossil fuel use and by the dust and debris produced by the Night of Horror's railgun strikes. Atmospheric moderators removed particulate matter, split carbon dioxide into solid carbon and oxygen, and processed atmospheric methane. Several thousand were in operation globally by 2045.

The Gang of Ten — The informal name for the ten nations with a gross domestic product exceeding one trillion US dollars in the post-Incursion period. The Gang of Ten operated as an informal joint governing body for global defense and research coordination in the years before EarthGov's formation, making collective decisions that affected the entire planet without any formal mandate to do so.

Night of Horror — The coordinated orbital railgun strike carried out by the Gang of Ten on June 6, 2040, targeting governments in sub-Saharan Africa identified as aggressors taking advantage of the post-Incursion power vacuum. The strikes destroyed the populations — military and civilian — of the targeted territories within approximately four hours. The Night of Horror is one of the most debated events in modern Human history.

Primary Source

The following is a transcript of a public statement delivered by Dr. Yewande Adeyemi, speaking as designated spokesperson for the Gang of Ten, on the morning of June 7, 2040 — approximately six hours after the completion of the orbital strikes. Dr. Adeyemi was a Nigerian economist and diplomat who had served as a senior advisor to the Gang of Ten's coordinating council since 2038. The statement was broadcast simultaneously across all major QEC networks and translated into sixty-seven languages within the hour. It is reproduced here from the official EarthGov Historical Archive.

What occurred last night was not undertaken lightly, and it will not be explained lightly.

For more than two years, the nations represented by this council have carried a burden that no nations in human history have ever carried: the knowledge that Earth faces a threat from beyond its own solar system, of unknown scale and unknown intention, and that the defense of every human being on this planet depends on our ability to prepare for that threat with the full focus of our collective resources and attention.

During those two years, we have watched as that focus was repeatedly compromised. We have watched governments use the cover of the major powers' outward attention to

commit acts of violence against their own people and their neighbors — acts that, in ordinary times, would have drawn a swift and coordinated international response. These were not ordinary times. Every soldier, every engineer, every unit of manufacturing capacity committed to conventional intervention on the ground was a soldier, engineer, and unit of capacity not committed to the defense of this planet.

The nations of this council made a decision. We do not ask you to approve of it. We ask you to understand the calculation that produced it: that the fastest path to a planet capable of defending itself was a planet no longer consuming its defensive resources in managing conflicts that had no end in sight through conventional means.

We are aware of what was lost last night. We will carry that awareness. We will not insult those losses by pretending they were small, or by offering assurances that what happened was just in any simple sense. We will say only that the men and women who made this decision believed — and continue to believe — that the alternative was worse. Not worse for us. Worse for the planet. Worse for every human being who will be alive when the next ships come.

They will come. We do not know when. We do not know in what numbers. What we know is that when they do, this planet must be ready. Last night was part of being ready. It is the part that none of us will forget.

Earth's work continues. We have no time to waste.

— *Dr. Yewande Adeyemi, speaking for the Gang of Ten, June 7, 2040*

. . .

Dr. Adeyemi's statement has been analyzed extensively in the century since its delivery. Scholars have noted what it does not say as carefully as what it does: there is no specific account of what happened, no acknowledgment of civilian casualties, no enumeration of the governments targeted or the populations destroyed. The statement defends a decision while carefully avoiding a description of it. Adeyemi herself, in a memoir published in 2061, wrote that she had argued for a fuller accounting in the statement and had been overruled. She described delivering it as the hardest thing she had ever done. Whether that difficulty registers in the text itself is a question worth considering.

Review and Discuss

1 The chapter describes a "power vacuum" created by the Gang of Ten's outward military focus. In your own words, explain how the decisions made for good reasons — defending the planet — created conditions for the violence they ultimately responded to.

2 The sidebar presents two serious arguments about the Night of Horror: that it was a war crime, and that it was a rational if terrible necessity. Which argument do you find more persuasive, and why? What additional information, if you had it, might change your assessment?

3 Dr. Adeyemi's statement defends a decision without describing it. Why do you think the Gang of Ten chose this approach? What does the choice reveal about how they understood what they had done?

4 The chapter describes the Night of Horror as having a "paradoxical clarifying effect" on Earth's population. What does this mean? Can you think of other moments in history — from this book or from your broader knowledge — where a terrible event produced unexpected clarity or unity?

5 Chapter 4 ended on a note of cautious optimism about the quantum tap discovery. Chapter 5 begins by deliberately invoking that optimism before undercutting it. Why do you think the chapter is structured this way? What does the juxtaposition of the *TechHorizon* article and the Night of Horror suggest about the relationship between technological progress and moral progress?

6 From your vantage point in 2140, you live in a world that EarthGov built — a world whose formation the Night of Horror accelerated. Does knowing that the world you live in emerged partly from this event change how you feel about it? Is it possible to benefit from an injustice without being responsible for it?

Further Reading

Adeyemi, Y. *The Hardest Thing: A Memoir*. Lagos: West African Press, 2061. The memoir in which Dr. Adeyemi describes her role as Gang of Ten spokesperson and her experience of the Night of Horror from the inside. One of

the most important primary accounts of the period's decision-making.

Achterberg, N. *June 6, 2040: A History of the Night of Horror*. Amsterdam: European Historical Collective, 2085. The most comprehensive single-volume account of the Night of Horror, drawing on declassified Gang of Ten communications, satellite records, and survivor testimony from neighboring regions.

Girma, T. *The Counted and the Uncounted: Demographic Consequences of the Night of Horror*. Addis Ababa: East African University Press, 2094. A rigorous demographic study of the populations destroyed on June 6, 2040, representing the most sustained effort by any scholar to give a full accounting of who was lost.

Mbeki, A. *Proportionality and Planetary Defense: The Night of Horror in International Legal Context*. Johannesburg: Southern African University Press, 2101. A legal-historical analysis of the Night of Horror, examining whether existing international legal frameworks of the time could have been applied to the event and what the absence of any legal accountability reveals about the limits of those frameworks.

Okonkwo, S. *The Vacuum Years: Regional Conflict in Sub-Saharan Africa, 2037–2040*. Nairobi: Pan-African Academic Press, 2088. A history of the conflicts — including the Kovaris Coup, the Tassara Conflicts, and the Mbeya Massacres — that preceded and, in the Gang of Ten's framing, precipitated the Night of Horror. Essential context for evaluating the decisions made.

Reinholt, M. *After the Silence: Social and Psychological Responses to the Night of Horror Across Five Continents*. Copenhagen: Nordic Historical Press, 2079. A social history of how different populations around the world processed the Night of Horror in its immediate aftermath, drawing on diaries, letters, journalism, and oral histories.

6

Living Through It: Earth Society 2037–2048

By the end of this chapter, you should be able to:

- Describe daily life on Earth during the post-Incursion decade across multiple dimensions: food, work, family, and culture
- Explain how the threat of alien invasion and the arrival of new technologies changed human social norms and cultural practices
- Analyze the relationship between economic pressure, technological change, and cultural transformation using the dietary shift as a case study
- Compare the social world of post-Incursion Earth to the world students inhabit in 2140, identifying both continuities and ruptures

History, as it is usually written, is a record of events: the ships arrived, the weapons fired, the governments fell, the treaties were signed. What history books record less reliably — and what is often harder to find in archives — is the texture of ordinary life moving through and around those events. The people who lived through the decade between the First Incursion and the formation of EarthGov did not experience their lives as a sequence of historical turning points. They experienced them as mornings and evenings, meals and arguments, children who needed to be fed and jobs that still had to be done, regardless of what had appeared in the sky.

This chapter is about that experience. It will not tell you what the Gang of Ten decided, or how many Winchester-class railguns were in service by 2045. It will tell you what people ate for dinner, what music they listened to while they cooked it, what they argued about at the table, and what they were afraid of when they turned the lights out. These things matter. They are, in their own way, as much a part of the history of this period as anything discussed in the preceding chapters.

What People Ate — and What They Lost

There is no gentler way to put this: the decade between 2037 and 2048 ended a food culture that had existed, in various forms, for the entirety of human history. For students in 2140, for whom a plant-based diet is simply the

way things are, this can be difficult to grasp emotionally — but it is worth trying, because the people who lived through the transition did not experience it as inevitable or natural. They experienced it as a loss.

Before the Incursion, the majority of Earth's population ate meat. Not universally, and not without growing debate about the environmental and ethical costs — vegetarian and vegan movements had been gaining ground throughout the 2020s and 2030s — but substantially and, for most people, unreflectively. Meat was woven into the fabric of human culture in ways that went far beyond nutrition. The Sunday roast in an English household. The asado that was the center of Argentine social life. The elaborate meat-based festival foods of dozens of cultures across East and Southeast Asia, the Middle East, West Africa, the American South. These were not merely meals. They were rituals of family and community, repositories of memory and identity, expressions of hospitality and celebration that had been practiced and refined across generations.



The forces that ended this were not primarily philosophical. They were economic and logistical. Livestock farming requires land, water, and feed in quantities that a planet reorganizing itself for planetary defense and atmospheric remediation could not sustainably provide. The atmospheric moderators deployed after the Night of Horror were processing atmospheric methane, a significant portion of which came from livestock. EarthGov's emerging resource allocation systems — even before EarthGov formally existed, the Gang of Ten's coordinating councils were making these calculations — determined, with the cold clarity of quantum-assisted analysis, that the land, water, and energy devoted to animal agriculture could feed significantly more people if redirected to plant-based production. Hydroponic systems, originally developed for the Ares space station, were adapted for ground-based use

at scale with remarkable speed. By 2044, hydroponic facilities were producing vegetables, legumes, and grains in quantities that would have seemed implausible five years earlier.

The resistance was real and it was not trivial. It showed up in protests, in black markets for meat products that persisted well into the 2050s, in bitter political arguments about cultural preservation and government overreach. A coalition of ranching communities in South America, pastoral farming communities across East Africa, and agricultural lobbying groups in North America mounted sustained opposition that delayed full implementation of protein-reallocation policies by nearly two years. Their arguments were not only economic. They were about identity — about the right of people to maintain the food traditions that connected them to their ancestors and their communities.

Those arguments lost, not because they were wrong but because the mathematics of feeding a militarizing planet were unforgiving. What emerged from the transition, however, was not simply a diminished version of what had existed before. Human beings are not passive recipients of change. They cook. They experiment. They find, in constraint, new forms of creativity. The plant-based cuisines that developed across the 2040s drew on techniques and flavors from traditions that had previously had little contact with each other — hydroponic vegetables prepared with West African spice profiles, legume dishes combining South Asian and Latin American techniques, grain preparations that blended East Asian and

Mediterranean approaches. A genuine culinary culture emerged, one that students in 2140 inhabit so naturally that its hybrid origins are largely invisible.

The homogenization this produced was real and carried its own costs. Some food traditions did not survive the transition, or survived only in attenuated, ceremonial forms. The loss is documented, mourned in oral histories and food scholarship, and should not be minimized. But the cross-cultural synthesis that replaced the old diversity was not nothing. It was, in its own way, a first rehearsal for the much larger cultural syntheses that Galactic citizenship would eventually require.

The hydroponic systems that transformed Earth's food supply in the 2040s were not invented for Earth. They were invented for space. The earliest versions were developed for the Ares station, where the challenge was simple and absolute: a crew of dozens, in a sealed environment with no resupply guarantee, needed fresh food indefinitely. The systems that solved that problem — closed-cycle nutrient delivery, full-spectrum artificial lighting, carefully controlled atmospheric conditions — were elegant and compact, designed to produce maximum yield in minimum space with zero waste.

Adapting these systems for ground-based use at planetary scale required substantial

engineering work, but the underlying principles were already proven. By 2043, Lyborne Industries — whose autofactories had already transformed space-based manufacturing — had retooled several Earth-based facilities to produce modular hydroponic units suitable for installation in existing buildings, including residential ones. The wall-mounted growing panels that are a standard feature of most kitchens in 2140 are direct descendants of those early units. They are smaller, more efficient, and capable of producing a wider variety of crops — but the principle is unchanged, and the lineage is direct.

What changed, between the 2040s and today, is the relationship between the grower and the grown. In 2040, a family installing a hydroponic panel was making a practical decision under economic pressure. In 2140, most families maintain their panels with something closer to pleasure — an active, daily connection to where their food comes from that earlier generations, purchasing anonymous packages from large agricultural corporations, largely lacked. The enforced intimacy with food production that the 2040s imposed has become, a century later, a freely chosen cultural practice.

Work and the Reorganization of Labor

The economic disruption of the post-Incursion decade was profound, and it did not fall evenly. Industries tied to fossil fuels — extraction, refining, distribution, the manufacturing sectors that depended on them — contracted rapidly as quantum tap technology spread. The transition created genuine hardship in communities whose economies had been organized around those industries for generations. EarthGov's predecessor bodies provided resettlement assistance and retraining programs, but these were imperfect and often slower than the disruption they were meant to address.

What grew, to absorb the labor and attention freed from legacy industries, was a vast expansion of the technical and scientific sectors. By 2045, approximately a third of Earth's working adults were employed in fields that had barely existed a decade earlier: quantum systems engineering, AI development and oversight, space-based manufacturing coordination, atmospheric science, hydroponic systems management. The aptitude testing that would become formalized under EarthGov had its roots in this period — informal versions were already being used by the Gang of Ten's coordinating bodies to direct workers toward fields where they were most needed, with varying degrees of voluntariness.

The experience of work changed in texture as well as content. The QEC had made instantaneous communication universal, which meant that the geographic constraints on collaboration had effectively disappeared. A research team

might include members in Lagos, Oslo, Buenos Aires, and Bangalore, working in continuous real-time contact. This accelerated scientific and engineering work enormously, and it also accelerated the erosion of the remaining barriers between national professional cultures. The shared technical vocabulary of quantum systems engineering was the same in every language. The problems being solved were the same problems everywhere. A generation of workers who had grown up in distinct national professional traditions found themselves, by the mid-2040s, operating in something that was beginning to resemble a single global professional culture, long before EarthGov made that culture official.

Fear, Family, and the Texture of Private Life

What the archives of this period reveal, in the diaries and letters and oral histories that survive, is a population living in sustained low-level fear that had become, by the early 2040s, simply the background condition of existence. The fear was not constant or paralyzing — people adapted, as people do. But it was always there. Parents made decisions about where to live, what skills to develop, how many children to have, with an awareness that the world might change catastrophically at any moment. Schools incorporated emergency protocols and space-defense awareness into curricula that had previously focused on more conventional subjects. Children grew up understanding, in a general way, that there were things in the universe that wished humanity harm — without

understanding, because the adults around them did not fully understand either, what those things were or when they might return.

The effect on family structure was complex. Birth rates fell in the immediate post-Incursion years, as couples facing uncertainty postponed decisions about children. They recovered by the mid-2040s, and by 2048 were modestly above pre-Incursion levels — a pattern demographers have observed in other periods of collective crisis and subsequent stabilization. The families that emerged from this period tended, by the accounts that survive, to be close and inward-facing: oriented toward the home, toward small circles of trusted relationships, in ways that reflected both the disruption of the preceding years and the extraordinary material comfort that the quantum tap had, somewhat paradoxically, delivered. Free, limitless energy meant warm homes, reliable lighting, functional appliances, and the end of the fuel poverty that had affected hundreds of millions of people before the Incursion. The material quality of life for most of Earth's population rose considerably across the 2040s, even as the psychological quality of life remained shadowed by fear.

Culture and the Arts

The cultural life of the post-Incursion decade was, like most things about the period, more interesting than a simple narrative of fear and militarization would suggest. Fear is not a creatively inert emotion. It generates art.

Music was the dominant cultural form of the period, partly for technological reasons and partly for temperamental ones. The QEC had made instantaneous global music sharing possible, and the collapse of the old internet-based distribution infrastructure had, ironically, democratized music production — the large corporate intermediaries that had controlled distribution in the streaming era found their business models obsolete almost overnight, and the resulting vacuum was filled by an explosion of independent production. The music that emerged was formally diverse but emotionally coherent: the dominant currents of the early 2040s — what critics at the time called the Resonance movement, and what historians now describe as post-Incursion expressionism — shared a quality of reaching for something just beyond articulation. Songs like Yemi Osei-Kuffour's *What the Sky Holds* and the collaborative album *Below the Elliptic*, produced by a rotating collective of musicians across eleven countries, captured something about the post-Incursion mood that journalism and political speech could not: the experience of living in a world that had been permanently changed by an event that still had no complete explanation.

Film evolved differently, and more deliberately. The major film-producing industries of the pre-Incursion era had been disrupted along with everything else, but they recovered faster than most cultural institutions, partly because the technology available to them had improved so dramatically. Neural-interface cinema — in which viewers could experience films with a degree of sensory immersion

that went beyond anything possible with earlier screen technology — was in early commercial deployment by 2044. The films that used this technology tended, significantly, toward the aspirational. *The Long Watch*, released in 2045 and widely considered the defining film of the period, followed a fictional Ares Command crew through a decade of waiting and preparation, and its final sequence — in which the crew watches Earth rise over the station's viewport, small and blue and worth defending — became one of the most reproduced images of the era. Audiences did not want to be reminded of what they feared. They wanted to be shown what they were afraid for.

Vocabulary

Hydroponics — A method of growing plants without soil, using nutrient-rich water delivered directly to plant roots in a controlled environment. Originally developed for space station use, hydroponic systems were adapted for large-scale ground-based food production in the 2040s and remain the dominant form of food cultivation in 2140.

Atmospheric moderator — As introduced in Chapter 5: large, quantum tap-powered airborne platforms designed to remediate atmospheric damage. In the context of Chapter 6, their relevance to daily life was twofold: they visibly cleaned the skies above major population centers over the course of the 2040s, and their processing of atmospheric methane was one of the drivers of the transition away from livestock agriculture.

Resource allocation — The process by which available materials, energy, land, and labor are distributed across competing needs. In the post-Incursion period, resource allocation decisions made by the Gang of Ten's coordinating bodies — and later by EarthGov — increasingly determined what people ate, where they lived, and what work they did, representing a significant shift from the market-based allocation systems of the pre-Incursion era.

Cultural consolidation — The process by which distinct cultural practices, traditions, and identities converge toward shared forms, typically under the pressure of shared circumstances. The post-Incursion decade produced significant cultural consolidation, particularly around food, language, and professional practice, as a byproduct of the economic and technological changes the period imposed.

Neural-interface cinema — A film technology in early commercial deployment by the mid-2040s, allowing viewers to experience sensory elements of a film beyond conventional sight and sound through direct neural connection. Neural-interface cinema represented the first major new entertainment medium of the post-Incursion era and remains, in significantly more advanced form, a primary entertainment medium in 2140.

Primary Source

The following is an excerpt from an oral history interview conducted by the EarthGov Social History Archive in 2139 as part of its Century of Change project, which collected personal accounts from elderly citizens reflecting on the post-Incursion decades. The speaker, who requested anonymity, was born in 2062 and is the granddaughter of a woman who lived through the period described in this chapter. The excerpt has been lightly edited for length.

She talked about food more than anything else, honestly. More than the ships, more than the Night of Horror — though she talked about those too, don't get me wrong. But food kept coming back. I think because food was the thing she could put her hands on. The rest of it was too big.

She grew up in — I want to say she was in the Philippines, in a coastal area, though the family moved around a lot after 2041 or so. And she said when she was very small, before things changed, her grandmother — so my great-great-grandmother, if you're keeping track — would make this dish, I can't remember the name now, some kind of pork thing with vinegar and garlic. Very specific. Very particular to her family's region. And she said the smell of it cooking was safety, was home, was everything being all right. You know how smells are.

And then it was just — gone. Not immediately, she said, it didn't happen overnight. But the pork got harder to find, and then more expensive, and then there were the

allocation rules and you couldn't really get it at all unless you knew someone, and eventually you stopped knowing someone. She said her mother cried once, actually cried, when she realized she hadn't made the dish in two years and couldn't remember exactly how her own mother had done the garlic. Whether you fried it first or put it in with the vinegar. A little thing. But she cried.

I think about that. Whether you fried it first.

The thing my grandmother always said, though — and she was not a sentimental person, she was very practical, very much a product of her time — she said you learned to cook what was there. And what was there was everything, from everywhere, all mixed together. She said the first time she had — she called it the Ethiopian lentil stew, but I think it was a version of something, adapted, not quite authentic — she said she was suspicious of it because it wasn't hers. And then she made it herself and put some of her own family's spices in it and gave it to her children and they loved it and she thought: well. That's something. You lose something and you find something. It's not the same thing. But it's something.

She talked about the fear too, because I always asked. I was writing my school thesis on the period, this was maybe fifteen years ago, and I kept pushing her on what it actually felt like day to day. And she thought about it for a while — she always thought carefully before she spoke, my grandmother — and she said it was like weather. You didn't think about it every minute. But you always knew it was

there, and you dressed accordingly. You made your plans knowing it could rain.

She said the thing that helped most was the music. She couldn't always say why a particular song helped but she said people needed something that wasn't explanation or reassurance or news. They just needed — she used this word — *witness*. They needed something that witnessed what it felt like. And the music did that. She said she still knew every word of *What the Sky Holds* sixty years later. Still knew every word.

This account is representative of a large body of oral testimony collected by the Social History Archive, in which food memory serves as the primary vehicle for communicating the texture of post-Incursion life. The speaker's grandmother would have been born approximately in the late 2030s, making her an early childhood contemporary of Isabela Carvalho, whose diary appears in Chapter 3. The observation that Yemi Osei-Kuffour's What the Sky Holds remained memorable sixty years after its release is consistent with the song's documented cultural persistence; it continues to be performed and recorded in 2140.

Review and Discuss

1 The chapter is organized thematically rather than chronologically. What are the advantages of this approach for understanding daily life in the period? Are there any disadvantages — things that a thematic structure might cause you to miss?

2 The chapter argues that the dietary shift of the 2040s produced both loss and something new. Evaluate this argument. Do you find the idea of "beneficial homogenization" persuasive, or does it minimize the cost of what was lost? Can both things be true simultaneously?

3 The anonymous speaker in the primary source says her grandmother experienced fear "like weather — you didn't think about it every minute, but you always knew it was there, and you dressed accordingly." What does this metaphor suggest about how human beings adapt to sustained threat? Does it remind you of anything in your own experience or in the experiences of people you know?

4 The chapter describes neural-interface cinema trending toward the aspirational during this period — films about what people were afraid *for*, rather than what they feared. What does this reveal about what people needed from art during this period? How does this compare to what art and entertainment looked like in the immediate post-Incursion period described in Chapter 3?

5 The chapter notes that the QEC's destruction of old distribution systems "democratized" music production. Is this an example of a crisis producing an unexpected

benefit, similar to the dietary shift? Can you identify other examples from the chapters you have read so far where disruption created unexpected opportunities?

6 In 2140, you have likely grown up with hydroponic food, QEC communication, and neural-interface entertainment as simply the way things are. Having read this chapter, what do you understand differently about those aspects of your daily life? Is there anything in your ordinary experience that you will think about differently as a result of knowing how it came to exist?

Further Reading

Delacroix, M. *The Resonance Movement: Music and Meaning in the Post-Incursion Decade*. Paris: European Cultural History Press, 2103. A comprehensive study of the musical culture of the 2040s, including detailed analysis of the Resonance movement's major works and their relationship to the social and psychological conditions of the period.

Kamau, J. *What We Ate: A Food History of the Post-Incursion Transition*. Nairobi: Pan-African Cultural Press, 2097. The definitive food history of the 2040s dietary shift, combining nutritional history, economic analysis, and extensive oral testimony from people who lived through the transition.

Nakagawa, S. *The Long Watch and Its Legacy: Neural Cinema and the Post-Incursion Imagination*. Osaka: Pacific Rim Cultural Studies Press, 2108. A critical history of the

film *The Long Watch* and the broader emergence of neural-interface cinema, arguing that the aesthetic choices of the period's filmmakers reveal as much about the era's psychology as its journalism does.

Osei-Kuffour, Y. *What the Sky Holds: Songs and Their Stories*. Accra: West African Cultural Press, 2079. A memoir by the composer of the period's most enduring song, combining autobiography with reflection on the relationship between music and collective experience.

Petrov, A. *Resettlement and Retraining: Labor Transition Policy in the Post-Incursion Decade*. Moscow: Eurasian Economic History Press, 2091. A detailed policy history of the programs designed to manage the economic disruption caused by the quantum tap transition and the reorganization of Earth's labor force, including an honest accounting of where those programs succeeded and where they failed.

Souza, R. *Lost Tables: Oral Histories of Food Tradition and Cultural Loss in the Post-Incursion Transition*. São Paulo: South American Cultural Archive Press, 2106. A collection of oral histories focused specifically on food memory and the experience of culinary loss during the dietary shift, representing the most sustained archival effort to document what the transition cost in cultural terms.

7

The Build-Up: Lyborne and the Arsenal (2042–2045)

By the end of this chapter, you should be able to:

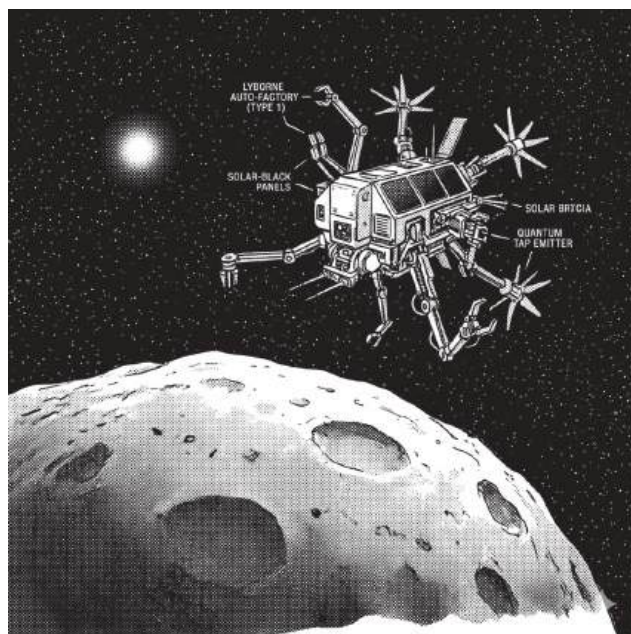
- Explain Lyborne Industries' role in Earth's military buildup and evaluate the controversies surrounding that role
- Describe how the Winchester-class railguns were manufactured and deployed, including the logistical innovations that made their production possible
- Explain the strategic logic behind the Oculous Cloud and identify its limitations
- Analyze the relationship between private industry and planetary defense during this period, and evaluate the questions that relationship raises about accountability and public interest

Picture it from the perspective of the factory.

It has no perspective, of course — it is a machine, a collection of robotic systems and quantum computers and gravitic drives assembled in Earth orbit over the course of several months in 2042. But if it could perceive its own situation, what it would perceive, in the first hours after its launch, is acceleration: a railgun kick that no human body could have survived, a burst of kinetic energy that sends it outward from Earth at a velocity that would carry it to the asteroid belt in a matter of weeks. Behind it, Earth recedes. Ahead, the Sun diminishes. Around it, nothing — the vast, dark, unhurried emptiness of the inner solar system, through which the factory travels in complete silence, guided by a quantum computer making thousands of small course corrections per second, in constant real-time communication with its controllers on Earth via QEC link.

When it arrives — when the target asteroid fills its sensors and the gravitic drives fire to match velocity and the robotic arms extend for the first time — there is no ceremony. No one is watching in real time, given the light-speed delay. The factory simply begins. It tears into the rock. It sorts what it finds. It builds.

This is how Earth armed itself.



Lyborne Industries

The company that built that factory — and the dozens that followed it, and the Winchester-class railguns that those factories produced, and the Oculous drones that would eventually number in the tens of thousands — was not, before the First Incursion, a household name. Lyborne Industries had been founded in 2019 by an engineer named Charles Lyborne in a leased warehouse outside of Bristol, England, with a staff of eleven and a focus on precision manufacturing robotics for the aerospace industry. It was good at what it did. It had contracts with several European aerospace firms and a growing reputation for quality. It was not, by any reasonable measure, a company that seemed likely to reshape human civilization.

What Charles Lyborne had, and what the First Incursion made suddenly and enormously valuable, was a specific kind of engineering intuition: the ability to look at a manufacturing problem and see, not how it was currently being solved, but how it could be solved differently, with fewer human hands and more intelligent automation. This intuition, applied to the alien technologies now available for study, produced insights that larger and better-funded organizations missed entirely. Lyborne's first major post-Incursion contract — awarded in 2040 by the Gang of Ten's joint defense coordinating council — was to develop a self-contained, self-directed manufacturing system capable of operating in space without human supervision. The result, first successfully tested in Earth orbit in early 2042, was the auto-factory.

The story of Lyborne Industries in the post-Incursion decade is, depending on who is telling it, either an inspiring account of private enterprise rising to meet a planetary crisis, or a cautionary tale about what happens when emergency conditions allow a single company to accumulate unprecedented power without adequate oversight. A century of scholarship has not fully resolved the question, partly because the relevant records remain incomplete, and partly because the question itself touches on issues that are still politically sensitive.

What is not in dispute is the scale of Lyborne's growth. In 2037, the company employed approximately 340 people and had an annual revenue of roughly £180 million. By 2045, it employed more than 400,000 people across sixteen countries, held exclusive contracts for the manufacture of auto-factories, Winchester-class railguns, and Oculous drones, and had accumulated assets that made it, by some estimates, the most valuable private enterprise in human history. This growth was funded entirely by public money — by the coordinated defense budgets of the Gang of Ten — and was enabled by exclusive access to alien-derived technologies that were, in a meaningful sense, the common property of humanity.

The contractual arrangements that produced this outcome have been scrutinized extensively by historians and, somewhat less productively, by several EarthGov investigative bodies in the decades since. What those scrutinies have revealed is a pattern familiar from other periods of crisis contracting: a small number of government officials with decision-making authority over defense procurement maintained relationships with Lyborne that, while not always illegal under the standards of the time, were difficult to characterize as arm's-length. Several members of the Gang of Ten's coordinating council held

financial interests in Lyborne or in companies that had significant Lyborne contracts, through investment arrangements that were legal but opaque. At least two senior officials moved directly from coordinating council positions to senior roles at Lyborne within months of leaving government service. The contracts themselves were awarded without competitive bidding, justified on grounds of urgency — grounds that were, in the early years at least, entirely legitimate, but that became harder to justify as the situation stabilized and the contracts continued.

Charles Lyborne himself, who died in 2071, gave few interviews and left no memoir. The authorized biography published in 2089 is widely considered to have had access to company archives on terms that constrained its conclusions. Lyborne Industries itself — which continues to exist in some form in 2140, though its current structure and activities are not a subject this textbook is positioned to address in detail — has never commissioned an independent historical audit of its post-Incursion contracting relationships.

None of this diminishes the genuine achievement that the auto-factories, the Winchester guns, and the Oculous drones represented. The planet needed defending, and Lyborne built the tools that defended it. The question that historians continue to ask is not

whether the work was necessary, but whether the terms on which it was done were just — and whether the concentration of power and wealth those terms produced had consequences that extended beyond the period of crisis that justified them.

These are not questions with clean answers. They are questions worth asking.

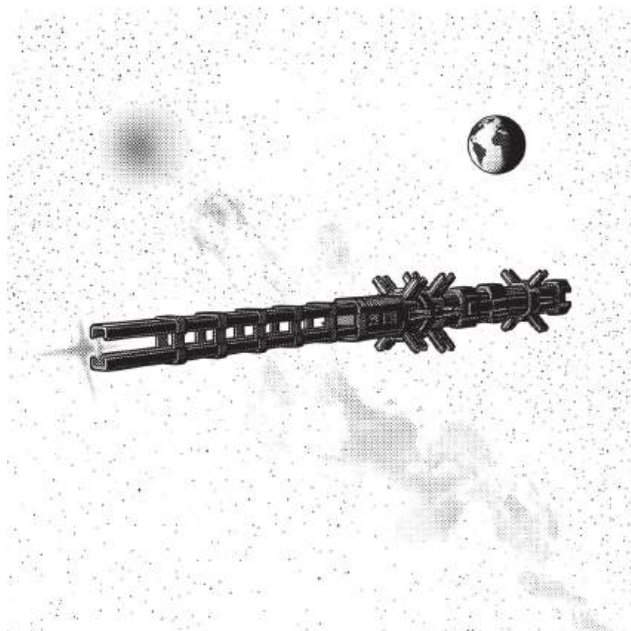
Into the Asteroid Belt

The auto-factory concept was elegant in principle and formidable in execution. A self-contained robotic manufacturing system, powered by quantum taps, directed by quantum computers, and communicating with Earth via QEC, could in theory operate anywhere in the solar system without human presence. The asteroid belt — a vast field of rocky and metallic bodies orbiting the Sun between Mars and Jupiter, containing concentrations of iron, nickel, carbon, and rare earth elements that dwarfed anything accessible on Earth's surface — was the obvious target.

The challenges were considerable. The asteroid belt is not, despite how it is sometimes depicted, a dense field of closely packed rocks. It is enormous, and its constituent bodies are separated by distances that make navigation a genuine engineering problem. The auto-factories needed to identify suitable target asteroids — bodies large enough to provide sustained raw material, with compositions suited to the production of railgun components, and in orbital

positions that made approach feasible within a reasonable timeframe. This selection process, managed by AI systems working from decades of astronomical survey data, produced a list of six primary targets and a longer list of secondary targets to be addressed as production capacity allowed.

The factories themselves were launched from Earth orbit by railgun — a somewhat poetic application of the technology they were being sent to produce more of. The launch acceleration was extreme, far beyond anything a human crew could have survived, but the factories' components were engineered to withstand it. Each factory carried its own gravitic drive for course correction and orbital insertion, its own quantum tap power supply, and a sophisticated AI system capable of managing the full range of manufacturing operations without real-time human direction. The QEC link to Earth was used not for moment-to-moment control but for status reporting, exception handling, and the transmission of design updates as engineers on Earth refined the railgun specifications.



The first factory arrived at its target — a nickel-iron asteroid designated 2029-Kappa in the survey catalogues, approximately 1.3 kilometers in diameter, in an orbit that brought it to within 2.8 astronomical units of the Sun at perihelion — in the third week of November 2042. The arrival itself was, from a purely technical standpoint, anticlimactic: the factory matched velocity, extended its anchoring systems, and began preliminary surface analysis within minutes of arrival, exactly as designed. The drama, if there was any, existed only in the minds of the engineers watching the QEC telemetry from facilities in Bristol, Bangalore, and São Paulo, who had spent the better part of a year building a system they could not test at full scale and were now watching operate, correctly, for the first time.

What the factory found on 2029-Kappa was better than the survey estimates had suggested. The asteroid's iron content was high and relatively pure, requiring less processing than anticipated. The carbon content, while lower than ideal, was sufficient for the composite materials the railgun barrels required. Within seventy-two hours of arrival, primary extraction operations were underway. Within three weeks, the factory had produced enough refined material to begin second-stage construction: the assembly of a larger, more capable manufacturing facility from the asteroid's own processed output.

This second-stage factory — which the engineering teams informally called a "daughter" — was the key to the entire system's scalability. A single auto-factory launched from Earth could, given sufficient time and raw material, produce a manufacturing facility many times its own size and capability. That daughter facility could then begin producing the actual weapons: the Winchester-class railguns that were Lyborne's primary deliverable under its Gang of Ten contract. The first completed Winchester gun was delivered to its deployment position in August 2043 — nine months after the first factory's arrival at 2029-Kappa, and approximately eighteen months ahead of the most optimistic projections that Earth's conventional manufacturing wisdom would have produced.

The Winchester Class

The Winchester-class railgun was not the largest weapon humanity had ever built — that distinction belongs to

various nuclear delivery systems of the twentieth century — but it was the most capable, and the most consequential. Each gun was nearly a kilometer in length. Each fired sabot rounds massing in excess of 60,000 kilograms, accelerated to a significant fraction of the speed of light by electromagnetic systems powered by arrays of quantum taps. The kinetic energy delivered by a single round exceeded that of the largest nuclear weapon ever built by humans, without radiation, without fallout, and without any requirement for fissile material that had to be mined, refined, and handled with extraordinary care.

Each Winchester gun was, in addition to being a weapon, an autonomous system. Onboard quantum computers managed targeting, firing solutions, and threat assessment. Gravitic drives allowed each gun to reorient toward any target in its operational range within minutes. QEC systems maintained continuous communication with Ares Command and with the other guns in the network, allowing coordinated fire solutions that no human-directed system could have matched for speed. The guns were, in the most meaningful sense, the first genuinely autonomous military systems humanity had deployed at scale — a fact that generated significant ethical debate at the time, and that historians have revisited frequently in the century since.

By the end of 2043, thirty-seven Winchester guns were in deployment. By the end of 2045, that number had reached eighty-nine, with production continuing at a rate of approximately two guns per month. They were positioned in a sparse array around Earth, oriented outward, their targeting systems in constant passive surveillance of the

space through which any future incursion would have to pass. Ares Command, overseeing the network from its station between the orbits of Earth and Mars, could in theory coordinate fire from any combination of guns against any target in the inner solar system within seconds of detection.

Whether this was enough was the question that Ares Command could not answer — because the answer depended on what came next, and when, and in what numbers. The guns could destroy what they could see. Seeing was the problem.

The Beginning of the Oculous Cloud

The limitation of the Winchester network was simple and irreducible: the guns could only respond to threats that had been detected, and detection depended on light-speed observation systems that were, by definition, always reporting on the past. An object as far away as Jupiter would not be seen by Earth's sensors until minutes after the light carrying its image had left it. At the velocities the Second Incursion ship would later demonstrate, minutes were a very long time.

The solution Lyborne's engineers proposed, and that the Gang of Ten approved in mid-2043, was the Oculous Cloud: a distributed network of small, stealthy surveillance drones deployed throughout the solar system, each equipped with high-resolution passive imaging, a gravitic drive for self-positioning, a quantum computer for autonomous operation, and — most critically — a QEC for

instantaneous reporting back to Ares Command. The drones were small enough to be produced in enormous numbers by the same auto-factories already operating in the asteroid belt. They emitted essentially no radiation, making them extremely difficult to detect. And they could position themselves, autonomously, to maintain the best possible coverage of their assigned regions of space.

The first Oculous drones entered deployment in late 2043. By the end of 2045, thousands were operational, distributed across the outer solar system in the sparse array that Ares Command was already calculating was insufficient. The mathematics of adequate solar system coverage were daunting: Jupiter's orbital path alone stretched nearly five billion kilometers, and even with tens of thousands of drones, the gaps between them remained vast. What the Cloud provided was not comprehensive coverage but meaningful early warning — the difference between seeing a threat coming with some lead time and seeing it only when it was already inside Earth's inner defenses.

It was a beginning. Whether it was enough would depend on what kind of threat arrived next, and on how much warning even an imperfect system could provide. The full implications of the Cloud's capabilities and limitations — and the anxious calculations of Ares Command trying to work within them — belong to the next chapter.

Vocabulary

Auto-factory — A self-contained, autonomous robotic manufacturing facility, powered by quantum taps and directed by quantum computers, capable of operating in space without human supervision. Auto-factories were first developed by Lyborne Industries in 2042 and represented a fundamental innovation in space-based industrial production. They extracted raw materials from asteroids and used those materials to produce both larger manufacturing facilities and finished weapons systems.

Winchester class — The designation given to the first generation of deep-space railgun weapons produced by Lyborne's asteroid belt auto-factories. Winchester-class guns were nearly a kilometer in length, fired sabot rounds at a significant fraction of the speed of light, and were equipped with autonomous targeting systems, gravitic drives for reorientation, and QEC links for network coordination. Eighty-nine were in deployment by the end of 2045.

Sabot round (advanced) — In the context of the Winchester-class guns, an extremely large projectile massing in excess of 60,000 kilograms, composed of iron, composite materials, and asteroid-derived debris, designed to deliver maximum kinetic energy on impact. Unlike conventional explosive munitions, sabot rounds carried no chemical or nuclear payload — their destructive power came entirely from their mass and velocity.

Oculous Cloud — The distributed network of small, autonomous surveillance drones deployed throughout the solar system beginning in 2043, produced by Lyborne's asteroid belt auto-factories. Oculous drones used passive imaging and QEC communication to provide Ares Command with early warning of incoming threats. The Cloud's coverage was always understood to be incomplete, given the mathematical impossibility of fully surveilling the solar system's vast volume with any finite number of drones.

Gravitic drive — A propulsion system derived from the alien tanker ships' drive technology, first replicated by Lyborne engineers in 2042. Gravitic drives manipulate gravitational fields to produce thrust without reaction mass, enabling spacecraft to accelerate and maneuver without fuel in the conventional sense. They also generate a field that negates inertial effects on the drive's primary structure — a property that became important in the development of the Attacking Eye drones described in Chapter 12.

Plane of the elliptic — The flat, disk-like plane in which Earth and the other planets of the solar system orbit the Sun. Both the First and Second Incursion ships arrived from above this plane, outside the zone of normal astronomical observation. The Oculous Cloud's deployment attempted to extend Earth's surveillance coverage above and below the elliptic as well as along it, though the gaps in that coverage remained a persistent source of anxiety for Ares Command.

Primary Source

The following is an excerpt from testimony delivered by Dr. Priya Nair, Director of the Gang of Ten Joint Defense Procurement Oversight Panel, before a closed session of the Panel's coordinating council on March 14, 2044. The testimony concerned the Panel's preliminary review of Lyborne Industries' contracting arrangements. The session record was classified at the time of delivery and remained classified until 2101, when it was released under EarthGov's Centennial Transparency Initiative. It is reproduced here from the official EarthGov Historical Archive.

JOINT DEFENSE PROCUREMENT OVERSIGHT PANEL Closed Session — Testimony of Dr. Priya Nair, Director 14 March 2044 — Geneva, Administrative District Switzerland [Transcript excerpt — pages 14–17 of 43]

...which brings me to the central finding of the preliminary review, and I want to be precise here because I am aware that precision is not always what people in this room are hoping for.

The contracts awarded to Lyborne Industries between 2040 and 2043 are, to the best of our Panel's ability to determine, legal. I want to say that clearly because I expect it will be quoted selectively if I do not. They are legal. They conform to the emergency procurement frameworks established by this council in 2038,

frameworks that were themselves designed to allow rapid contracting without the competitive bidding requirements that would normally apply.

What they are not is transparent. And what the relationships surrounding them are not is at arm's length.

I will give the council three specific findings and then I will take questions.

First: four members of this council, at the time the primary Lyborne contracts were awarded, held financial interests in Lyborne Industries or in companies with significant Lyborne subcontracts. These interests were disclosed, as required, to the council's ethics office. The ethics office determined that disclosure was sufficient and that recusal from the contracting decisions was not required. The Panel does not have authority to revisit that determination. We can note, for the record, that the combined value of those financial interests has increased by a factor of approximately forty since the contracts were awarded.

Second: the auto-factory contract, the Winchester contract, and the Oculous contract were each awarded on a sole-source basis, meaning without competitive bidding, on grounds of operational urgency. The Panel accepts that urgency was genuine in 2040. The Panel notes that the same urgency justification has been applied to contract renewals and extensions through 2043, without reassessment of whether competitive alternatives had become available in the intervening period. We have identified at least two other firms — one based in Japan, one in Germany — that had, by late 2041, developed auto-

factory capabilities that the Panel's technical advisors consider broadly comparable to Lyborne's. Neither firm was solicited for competitive bids.

Third, and I will be brief here because I understand the sensitivities: the Panel has documented three instances in which individuals with direct decision-making authority over Lyborne contracts accepted positions with Lyborne or Lyborne-affiliated entities within twelve months of leaving council service. Under the ethics frameworks applicable at the time, this was not prohibited. The Panel makes no finding of illegality. We note it as a pattern.

I want to be clear about what I am not saying. I am not saying that the Winchester guns do not work. They work extraordinarily well, as this council knows better than anyone. I am not saying that Lyborne Industries has failed to deliver on its contracts. It has delivered ahead of schedule. I am not saying that Earth would be better defended today if the contracts had been awarded differently. I genuinely do not know whether that is true.

What I am saying is that the arrangements by which this planet's primary defensive arsenal was contracted, built, and paid for do not meet the standards of accountability that a permanent, functioning government — as opposed to a crisis coordination body — should apply. And I am saying that this council should decide, now, while we still have some ability to make that decision, whether the current arrangements are the arrangements we want to carry forward into whatever form of governance comes next.

That is the end of my prepared remarks.

— *Dr. Priya Nair, testimony before the Joint Defense Procurement Oversight Panel, 14 March 2044*

Dr. Nair's testimony was, by the standards of the closed deliberative body she was addressing, remarkably direct. The Panel's preliminary review was never published in full; the summary findings released to the Gang of Ten's coordinating council in April 2044 were considerably more measured in language than Nair's oral testimony. Nair herself left the Panel directorship in June 2044, citing health reasons. She did not subsequently publish on the subject of defense contracting, and gave no interviews about her time on the Panel before her death in 2089. The full testimony remained classified for fifty-seven years.

Review and Discuss

1 The chapter describes the auto-factory concept as "elegant in principle and formidable in execution." In your own words, explain how the auto-factory system worked, and identify what you consider the single most important innovation it represented.

2 Dr. Nair is careful to say that Lyborne's contracts were legal, that the weapons worked, and that she cannot say Earth would be better defended under different arrangements — and yet her testimony is clearly critical.

What is she actually arguing? Do you find her argument persuasive?

3 The sidebar notes that Lyborne Industries "continues to exist in some form in 2140, though its current structure and activities are not a subject this textbook is positioned to address in detail." What do you make of that phrasing? What might it suggest about the company's current situation?

4 The Winchester-class guns were the first autonomous military systems deployed by humanity at scale — weapons capable of making firing decisions without human authorization under certain conditions. What ethical concerns does this raise? Do the practical advantages justify those concerns, given the circumstances Earth faced?

5 Recall from Chapter 4 that the quantum tap was described as drawing energy from quantum vacuum fluctuations, and from Chapter 5 that railgun technology had already been used in the Night of Horror. How does the Winchester-class gun represent a synthesis and escalation of both of those earlier developments? What does this suggest about the relationship between scientific discovery and weapons development?

6 Dr. Nair asks the council to decide "whether the current arrangements are the arrangements we want to carry forward into whatever form of governance comes next." From your vantage point in 2140, knowing what EarthGov became, do you think her warning was heeded? What

evidence from the chapters you have read might support your answer?

Further Reading

Bergström, L. & Tanaka, R. *The Arsenal in the Asteroids: A Technical History of the Winchester Program*. Stockholm: Nordic Scientific Press, 2083. The most comprehensive technical account of the Winchester-class railgun development, written with access to Lyborne engineering records released under EarthGov's transparency provisions. Assumes some technical background but is accessible to motivated general readers.

Delacroix, F. *Charles Lyborne: The Man Who Armed a Planet*. Paris: European Biographical Press, 2089. The authorized biography of Lyborne's founder, written with company archive access. Widely considered thorough on the engineering history and constrained on the contracting controversies.

Kamau, E. *The Procurement Papers: Defense Contracting and Accountability in the Pre-EarthGov Decade*. Nairobi: Pan-African Academic Press, 2107. A rigorous examination of the Gang of Ten's defense contracting practices, including the most detailed published analysis of the Lyborne arrangements and their long-term consequences.

Nair, P. *The Full Testimony: Defense Procurement Oversight Panel Records, 2042–2045*. Geneva: EarthGov Historical Archive Press, 2102. The complete published collection of Oversight Panel testimony and documentation, released

following the Centennial Transparency Initiative. Essential primary source material for any serious study of the period's defense contracting.

Osei, K. *Autonomous Weapons and the Question of Accountability: From Winchester to the Galactic Fleet*. Accra: West African Academic Press, 2115. A legal and ethical history of autonomous weapons systems from the first Winchester-class deployments through the Galactic War, tracing how the questions raised by early autonomous systems were — and were not — resolved over the following century.

Winterborne, C. *Rocks Into Rifles: The Asteroid Belt Industrial Operations, 2042–2060*. London: Imperial Academic Press, 2095. A social and industrial history of the asteroid belt auto-factory operations, focusing on the human experience of managing remote autonomous systems and the engineering culture that developed around it.

8

The Build-Up: Ares and the Watchers (2043–2048)

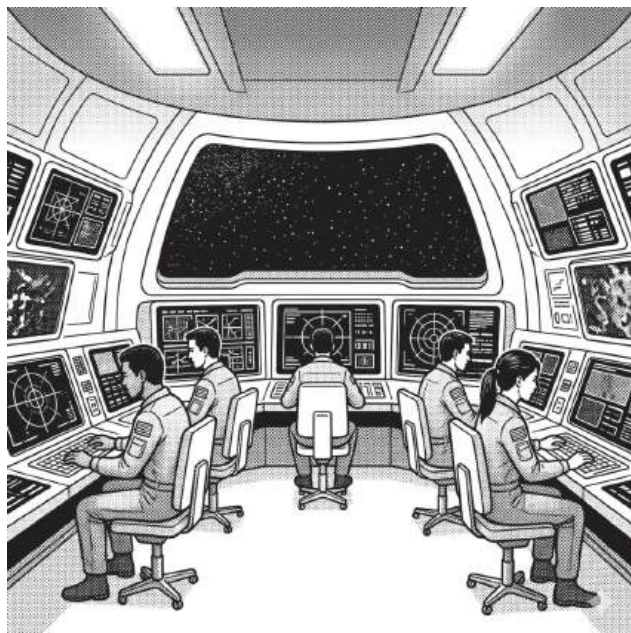
By the end of this chapter, you should be able to:

- Describe the Ares space station and explain its strategic role in Earth's defense architecture
- Explain the mathematical limitations of light-speed detection and why they posed a persistent challenge for Ares Command
- Evaluate the "blind spots" in Earth's defenses and analyze how Ares Command attempted to compensate for them
- Analyze the human experience of serving on Ares — what it demanded of the people stationed there and what it revealed about the nature of the threat Earth faced

By the end of 2043, Earth had built something extraordinary. The Winchester guns were coming online at a rate of two per month. The auto-factories were tearing into the asteroid belt with a focused, tireless efficiency that no human workforce could have matched. The Oculous drones were beginning their long deployment into the outer solar system. From a certain altitude — from the perspective of logistics reports and production schedules and the satisfied columns of a defense contractor's quarterly filing — the picture looked reassuring.

From the perspective of the six people on Ares station, it looked rather different.

They were the eyes behind all of it: the crew of Ares Command, living in a space roughly the size of a large apartment building, positioned between the orbits of Earth and Mars, responsible for monitoring a solar system so vast that the mathematics of adequate surveillance were, when examined closely, genuinely frightening. The guns were ready. The drones were watching. And Ares Command sat at the center of the network, knowing better than anyone what the guns could not reach and what the drones could not see.



Ares Station

The decision to build a dedicated military space station was made in 2041, and the engineering work began almost immediately. The design priorities were, in order: survivability, self-sufficiency, and communications capacity. The station needed to be able to sustain its crew indefinitely without resupply from Earth, to survive a direct attack if one came, and to maintain continuous QEC contact with every element of the defensive network it was responsible for coordinating. Comfort was not on the list, though the designers did their best within the constraints that survivability and self-sufficiency imposed.

The station was assembled in Earth orbit and then relocated, under its own gravitic drives, to a position

roughly between the orbits of Earth and Mars — far enough from Earth to survive as a command post if Earth itself were attacked, close enough to maintain effective coordination with the inner defensive network. Its hydroponics systems, adapted from the research that had originally been developed for long-duration Earth-based agricultural use, could sustain a crew of up to forty for an indefinite period, provided the systems themselves remained functional. Its water supply came from a captured asteroid fragment positioned nearby. Its power came from a quantum tap array. In theory, Ares could survive for years without any contact with Earth at all.

In practice, the station was in continuous contact with Earth via QEC, receiving updated targeting data, crew rotations, design updates for the drone network, and the ordinary administrative traffic of a military command post. What it sent back was intelligence: the continuous stream of sensor data, drone feeds, and threat assessments that constituted Ares Command's primary function.

The crew rotated on nine-month assignments. By 2045, the station's complement had grown from its initial six to a more sustainable twenty-four, though twenty-four people in a space designed for forty still felt, by most accounts, quite small.

The Mathematics of Watching

Understanding what Ares Command was working with requires understanding something that seems simple but carries enormous implications: nothing in the universe

travels faster than light. Every sensor system available to humanity in the 2040s — visual, microwave, infrared, radio — detected objects by receiving the light or radiation those objects emitted or reflected. That light traveled at approximately 1,080,000,000 kilometers per hour. At that speed, light from the Sun takes about eight minutes to reach Earth. Light from Jupiter, at its average distance from Earth, takes between thirty-three and fifty-three minutes, depending on where the two planets are in their respective orbits.

This means that when an Oculous drone in the outer solar system detected something and immediately relayed that information to Ares via QEC — instantaneously, as QEC communications always were — the information it was relaying was already old. How old depended on how far away the detected object was when the drone first saw it. If a ship emerged near Jupiter's orbit, the drone closest to it might have spotted it when the light of its emergence reached the drone's sensors — but that light had already been traveling for some time before it arrived. The ship had been moving, under whatever drive system it possessed, during all that time.

To make this concrete: the maximum distance from Earth to Jupiter is approximately 928 million kilometers. At light speed, information from that distance takes just under an hour to arrive. A ship traveling at a tenth of the speed of light — a conservative estimate, given what the Second Incursion's ship would later demonstrate — would cover approximately 108 million kilometers during that hour. That is more than the distance between Earth and the Sun. By

the time Ares Command received confirmation that a ship had emerged near Jupiter's orbit, that ship, if it was moving at a tenth of light speed, would already be further along its trajectory than the entire Earth-Sun distance.

The Winchester guns could respond in seconds once a target was designated. The Oculous drones could reposition and begin tracking with impressive speed. The QEC ensured that communication between all elements of the network was genuinely instantaneous. None of these advantages addressed the fundamental problem: the universe imposed a mandatory delay on observation that no technology humanity possessed could overcome. The defensive network was always, inevitably, responding to the past.

The question that occupied Ares Command's planning staff more than any other in the mid-2040s was straightforward to ask and deeply uncomfortable to answer: how many Oculous drones would be required to provide genuinely adequate surveillance of the solar system?

The mathematics began with geography. Jupiter's orbital path — the outermost limit of the primary surveillance zone — stretched nearly five billion kilometers in circumference. Above and below the plane of the elliptic, the surveillance volume expanded further, since both known incursions had arrived from outside the plane. A drone with high-resolution passive

imaging could effectively observe a sphere of space roughly 100,000 kilometers in radius around its position — impressive by any human standard, but small against the scale of the solar system.

To cover Jupiter's orbital path alone, with no gaps larger than a single drone's observation radius, would require approximately 50,000 drones positioned along that path. To extend coverage meaningfully above and below the plane of the elliptic — to address the directional vulnerability that both Incursions had exploited — would require several times that number. Ares Command's planning staff calculated a minimum requirement of 200,000 drones for surveillance coverage they considered genuinely adequate.

By the end of 2045, approximately 15,000 Oculous drones were operational. The gap between what existed and what was needed was not a secret, and it was not comfortable. What Ares Command had was better than nothing by a considerable margin — the drones that existed could provide meaningful early warning, particularly if an incoming ship happened to emerge near one of the denser concentrations of drones in the ecliptic plane. What they could not provide was certainty. The solar system had gaps in its coverage that a determined or fortunate arrival could slip

through undetected until it was much closer than anyone at Ares Command wanted to contemplate.

Production continued. The gap narrowed, slowly. By 2057, when the Second Incursion arrived, approximately 40,000 drones were operational — still well short of the 200,000 target, but enough that the incoming ship was detected with sufficient lead time for an effective response. What that response looked like, and what it revealed, belongs to Chapter 11.

The Blind Spots

The mathematics of coverage were one category of limitation. The physics of detection were another. The Oculous drones relied on passive imaging — they detected light and radiation that objects emitted or reflected. This was effective for objects that were visible: ships under power, generating heat or drive emissions, reflecting sunlight. It was considerably less effective for objects that were dark, cold, and inert. A ship that had shut down its drives and was coasting on inertia, oriented to minimize its reflective surface area, would be extremely difficult for a passive sensor to detect at any significant distance.

Ares Command's planning staff had identified this vulnerability early, and the discussions about how to address it were extensive and, ultimately, inconclusive. Active scanning — broadcasting microwave pulses and

detecting the reflections — would extend detection capability to dark objects, but would also announce the scanner's position to anything capable of detecting the broadcast. In a solar system that was, by the mid-2040s, extensively populated with stealthy Oculous drones whose effectiveness depended partly on their not being detected, broadcasting active scanner signals seemed counterproductive. The debate between the passive-detection and active-scanning factions at Ares Command continued through the mid-2040s without full resolution, and the hybrid approach that eventually emerged — limited active scanning concentrated in the highest-priority approach corridors, passive imaging everywhere else — was a compromise that satisfied neither side entirely.

What Ares Command could say, with confidence, by 2045 was this: they would detect anything that arrived from the directions they were watching, with the drives running, in time to respond. They could not say they would detect everything. The solar system was simply too large, and the physics were simply too unforgiving, for certainty to be available.

They watched anyway. It was what they were there to do.

The Human Experience of Waiting

There is a particular psychological challenge in a job whose successful performance is defined by nothing happening. The crew of Ares Command were there to detect and respond to an alien incursion. If no incursion came, they had succeeded — but their success was

invisible, indistinguishable from simple absence of threat. If an incursion came and they responded effectively, they had succeeded in a way that would be visible and recognized. If an incursion came and they failed to detect it in time, or responded incorrectly, the consequences would be measured in civilizational terms.

The crew of Ares lived with this asymmetry every day. They monitored their screens, ran their calibrations, updated their targeting solutions, attended their briefings, and ate their hydroponic meals, in the knowledge that the thing they were preparing for might never happen — and that if it did, the margin for error was extremely small. The nine-month rotation was set at that length partly for logistical reasons and partly because psychological research conducted on the first crews had suggested that nine months was approximately the upper limit of effective sustained vigilance under those conditions, for most people.

The isolation compounded everything. Ares station was twenty-four people in a metal structure in empty space, separated from every other human being by distances that, even with QEC communication, felt vast. Letters and messages could travel instantaneously. The physical presence of another person — someone outside the crew, someone who represented the world being defended — could not. The crew could speak to their families in real time, which was an extraordinary luxury compared to any previous generation of people in remote postings. They could receive news, entertainment, and the ordinary cultural output of a civilization going about its business.

But they could not leave, and the world could not come to them, and the combination of isolation and sustained responsibility produced psychological effects that the early crew rotation research had documented carefully and that subsequent rotations worked hard to manage.

What those crews produced, in the face of all this, was a culture of deliberate ordinariness: routines maintained with almost ceremonial care, social rituals developed and observed with a seriousness that a casual observer might have found disproportionate, a dark humor that ran through the internal communications of every rotation and that served, as dark humor often does, as a pressure valve for things that could not otherwise be easily said. They were, in the most fundamental sense, standing watch — and they understood, better than anyone outside Ares could fully appreciate, exactly what they were watching for.

Vocabulary

Oculous drone — A small, autonomous surveillance satellite deployed throughout the solar system beginning in 2043, produced by Lyborne's asteroid belt auto-factories. Oculous drones used high-resolution passive imaging and QEC communication to provide Ares Command with early warning of incoming threats. Their small size and near-zero radiation output made them extremely difficult to detect.

Passive sensor — A detection system that identifies objects by receiving the light or radiation those objects emit or reflect, without broadcasting any signal of its own. Passive sensors are inherently stealthy — they cannot be

detected by the objects they are observing — but are limited to detecting objects that are themselves emitting or reflecting detectable energy.

Active microwave scanner — A detection system that broadcasts microwave pulses and identifies objects by detecting the reflections of those pulses. Active scanners can detect dark, cold, or inert objects that passive sensors would miss, but reveal the position of the scanner to anything capable of detecting the broadcast. The tension between these two detection approaches was a persistent strategic concern for Ares Command.

QEC relay — A quantum-entangled communicator configured to receive and rebroadcast communications, extending QEC network coverage to locations where direct communication with a primary QEC terminal is not possible. Ares station operated as a primary QEC relay node for the entire inner solar system defensive network.

Ares Command — The international military leadership body stationed on Ares space station, responsible for coordinating Earth's space-based defenses. Ares Command held authority over the Winchester railgun network, the Oculous drone fleet, and — later — the Attacking Eye drone systems described in Chapter 12. The name persisted through subsequent station upgrades and relocations, becoming a generic term for whatever facility served as humanity's primary space defense command post.

Primary Source

The following is a personal letter written by Specialist Third Class Tomás Varga, a sensor systems technician assigned to the first operational crew of Ares station, to his younger sister in Buenos Aires. The letter was sent via QEC on November 3, 2043 — approximately six weeks after Varga's rotation began. It was donated to the EarthGov Social History Archive by the Varga family in 2094. Spelling and punctuation are preserved as in the original.

Marisol —

Six weeks. I keep counting. Papá would tell me not to count, he always said counting makes it longer, but I can't help it. Six weeks, and I have twenty-eight more to go before they rotate me home, assuming everything goes to schedule, which it will, because this is the military and schedules are basically a religion here.

I want to tell you what it's like because I don't think I can explain it on the calls with Mamá and Papá. They worry, and when they worry I spend the whole call reassuring them, and then the call is over and I haven't actually said anything true. You don't worry the same way. Or you do, but you also want to know.

It's small. That's the first thing. You know how the briefings made it sound enormous, this whole military station in space? It's not enormous. It's twenty-four people in a tube. We have the operations center, we have the lab section, we

have the hydroponics bay (which smells like wet soil and is the nicest place on the station, honestly), we have the crew quarters (six bunks to a room, I share with Petty Officer Nakamura and four others), and we have the common room, which has a table, some screens, and a coffee machine that makes something that is technically coffee if you don't think too hard about it.

What we do, every day, is watch. That is what I am here to do. I sit at my sensor station and I watch the feeds from the Oculous drones and I log anything that looks anomalous and I run calibrations and I write reports. Sometimes Lieutenant Fonseca comes by and asks questions about the feeds. Sometimes I ask her questions about the targeting solutions and she explains them to me. Mostly it is quiet. Mostly nothing happens.

Here is the thing about mostly, though. Mostly is not always. And we all know that. You can feel it in the room sometimes, this collective awareness underneath everything — all twenty-four of us, always, knowing that the thing we are watching for could appear at any moment on any feed, and that the next few seconds after it did would be the most important seconds in the history of the planet. We don't talk about it directly. It would be too much to talk about directly. But it's there.

The sky is incredible. I didn't expect that. I've seen pictures, obviously, but pictures don't prepare you for what it actually looks like through the viewport in the operations center — this absolute black, deeper than anything, and the stars so many and so bright that they don't look like the sky

at home at all, they look like something else entirely, something that doesn't have a name. I look at it for a few minutes every shift, between calibrations. Some of the others don't look at it much — Nakamura says it makes him feel small, and I understand that. It makes me feel small too. But I think that's okay. I think maybe it's supposed to.

I miss you. I miss Mamá's food, even the bad food, even the vegetables she overcooks. I miss the sound of the neighborhood. I miss being warm in a way that doesn't come from life support systems.

Twenty-eight more weeks.

Tell Papá I'm fine. Tell him I'm doing something that matters. I think it's true.

Tomás

Ares Station, 3 November 2043

Specialist Varga completed his nine-month rotation in June 2044 and returned safely to Earth. He served two additional rotations on Ares station, in 2046 and 2049, before leaving military service. He later became a sensor systems instructor at the EarthGov Military Technical Institute in Buenos Aires, a position he held for more than twenty years. His sister Marisol, to whom this letter was addressed, donated the family's collection of Tomás Varga's correspondence to the Social History Archive following his death in 2101. She noted in her donation letter that her brother never lost his habit of counting down the days.

Review and Discuss

1 The chapter explains that Ares Command was always "responding to the past" because of light-speed observation delays. In your own words, explain this problem and why no technology available in the 2040s could fully solve it.

2 The sidebar calculates that adequate solar system surveillance would require approximately 200,000 Oculous drones, while only 15,000 were operational by 2045. How did Ares Command work within this limitation? What does their approach reveal about the relationship between ideal defense and practical constraint?

3 Tomás Varga describes the psychological experience of Ares station as living with "mostly" — the awareness that mostly nothing happens does not mean nothing ever will. How does this connect to the chapter's description of the "particular psychological challenge" of Ares Command's mission? Do you think you could do that job effectively? What qualities would it require?

4 The chapter describes how Ares crew developed "routines maintained with almost ceremonial care" and a culture of "deliberate ordinariness." Why do you think this kind of structure would be psychologically useful under those conditions? Can you think of other situations — historical or contemporary — where people facing sustained uncertainty have developed similar strategies?

5 Chapter 7 described the industrial and logistical scale of Earth's buildup — auto-factories, asteroid mining, thousands of guns and drones. Chapter 8 has focused on a crew of twenty-four people in a small station. How do these two perspectives illuminate each other? What does the human scale add to the industrial scale, and vice versa?

6 Varga writes that looking at the sky through the viewport makes him feel small, and that he thinks "maybe it's supposed to." From your vantage point in 2140 — as a Galactic citizen for whom the universe is considerably more familiar than it was for Varga — does the universe still feel large in that way? Has Galactic citizenship changed the human relationship with the scale of space, or only the practical dimensions of it?

Further Reading

Helmick, J. *The Long Watch: Oral Histories from the Early Ares Rotations*. Geneva: EarthGov Military Historical Press, 2081. A collection of interviews with surviving crew members from the first five Ares rotations, focusing on the psychological experience of sustained vigilance and the social culture that developed on the station.

Hicks, J. *Eyes in the Dark: The Oculous Drone Program, 2043–2060*. London: Imperial Academic Press, 2088. A technical and institutional history of the Oculous Cloud program, including detailed analysis of the coverage mathematics and the persistent debate between passive and active sensing advocates within Ares Command.

Holmes, L. *Signal and Shadow: Detection Theory and the Limits of Observation in the Ares Era*. Edinburgh: Northern Academic Press, 2095. A rigorous examination of the detection physics underlying Ares Command's surveillance challenges, written for a general audience by a scholar of sensor systems history.

McGlone, A. *Twenty-Four People and the Solar System: The Social History of Ares Station*. Washington: North American Academic Press, 2103. A social history of life on Ares station across its operational lifespan, drawing on personal correspondence, crew diaries, and official records to reconstruct the daily experience of the people who served there.

Robbins, M. *The Mathematics of Defense: Surveillance, Coverage, and Strategic Calculation in the Pre-Contact Era*. Toronto: North American University Press, 2099. An analysis of the strategic calculations underlying Earth's defensive architecture, including the most accessible published treatment of the Oculous coverage mathematics and their implications for Ares Command's planning.

Snover, J. *Command and Control: How Ares Managed a Solar System*. Bristol: European Military History Press, 2076. An institutional history of Ares Command's organizational structure and decision-making processes, written with access to classified operational records released under EarthGov's first transparency initiative.

9

One World: The Formation of EarthGov (2045–2048)

By the end of this chapter, you should be able to:

- Explain the political conditions that led to the formation of EarthGov, including the roles of the Gang of Ten, the collapse of the United Nations, and the natural disasters of 2047
- Describe the four branches of EarthGov and their functions
- Evaluate the trade-offs involved in the formation of a world government, including what nations surrendered and what they received in return
- Analyze the tension between the Gang of Ten's role as architects of atrocity and their role as architects of governance

On the morning of March 3, 2048, a Swiss notary named Edith Braunschweiger arrived at the Palace of Nations in Geneva forty minutes before her scheduled appointment, as was her habit, and spent the extra time drinking coffee in a small anteroom while reviewing the documents she would be asked to witness. The documents were, in their physical form, unimpressive: fourteen pages of dense legal text, formatted according to the standards of the transitional authority that had been negotiating their contents for the better part of three years. Braunschweiger had witnessed thousands of documents in her career. She would later tell her daughter that she had felt, reviewing these particular pages in that particular anteroom, a stillness that she could not explain and did not try to.

At 9:47 that morning, the representatives of what remained of Earth's independent nations signed the document that established the Earth Government. Braunschweiger signed as witness. Someone opened a window, and the sound of Geneva in early March — cold, precise, unhurried — came into the room.

EarthGov existed.



The Long Road to Geneva

The formation of EarthGov did not happen because anyone had always wanted it. It happened because, by 2048, the alternatives had become untenable — one by one, over the course of a decade, until the untenable was all that remained.

The United Nations, which had been the primary institution of international governance since 1945, had been failing for years before the First Incursion. Its structure — built on the principle of national sovereignty, with a Security Council whose permanent members held veto power over collective action — had been designed for a world of competing nation-states, and it reflected the political realities of 1945

more than those of the twenty-first century. By the 2030s, it was widely regarded as incapable of decisive action on any issue where the major powers disagreed, which was most issues that mattered. The First Incursion did not destroy the United Nations. It simply made the organization's inadequacy visible at a scale that could no longer be managed by diplomatic courtesy.

What replaced the UN's coordinating function, in the years immediately following the First Incursion, was the Gang of Ten's informal joint authority. As Chapters 4 and 5 described, this arrangement had produced both genuine achievements and genuine horrors. The quantum tap, the QEC, the Winchester guns, the Oculous Cloud — all of these emerged from the research and manufacturing infrastructure that the Gang of Ten's coordinated investment had made possible. The Night of Horror also emerged from that same coordinating structure, a fact that no honest account of EarthGov's origins can afford to minimize.

The people who built EarthGov knew this. Many of them had been present for, or complicit in, the decisions that produced the Night of Horror. They were building a permanent world government in the shadow of what an informal one had done — and they were doing so, in part, because they understood that informal power without formal accountability was precisely what had made the Night of Horror possible. This does not redeem them. It does complicate the simple narrative of visionary statespeople building a better world, and it deserves to be held in mind as the story of EarthGov's formation is told.

The Consolidation Years

Between 2041 and 2046, the number of independent nations on Earth fell from approximately 175 to just under 90. The process was not uniform, and it was not always voluntary. Some consolidations were genuine mergers, negotiated between governments that had concluded their populations would be better served by union than by continued independence. Some were absorptions — smaller states brought into larger neighbors through combinations of economic pressure, security guarantees, and the quiet withdrawal of Gang of Ten support for governments that resisted. A few were effectively coercions, though the historical record is careful to note that the line between a strongly incentivized choice and an absence of choice is not always clear.

What drove consolidation, beneath the political maneuvering, was mathematics. A planet reorganizing itself for planetary defense needed to eliminate the redundancies and inefficiencies of nearly two hundred separate governments, each maintaining its own administrative apparatus, its own military, its own legal system, its own approach to the resource allocation questions that now had to be answered at a global scale. Every dollar spent maintaining a foreign ministry whose primary function was negotiating with neighbors that would shortly become the same country was a dollar not spent on Winchester guns or Oculous drones. The Gang of Ten made this calculation explicit, and they made it frequently, in

communications that have since been declassified and studied extensively.

By 2046, the world had reorganized itself into something that resembled, without quite being, a genuine federation: a collection of larger administrative units loosely coordinated by the Gang of Ten's joint authority, lacking a formal legal structure, a unified court system, or any agreed mechanism for resolving disputes between units. It was, in the assessment of most historians, a transitional arrangement looking for a permanent form. The events of 2047 provided the final pressure that produced one.

The Year the Sky Fell

2047 was, by any measure, a catastrophic year for Earth's natural environment — and it was catastrophic in ways that made clear, more viscerally than any political argument could, that the remaining barriers between nations were not protecting anyone.

North America's Atlantic coast was struck by a succession of Category 5 hurricanes that came in such rapid sequence that recovery from one had barely begun before the next arrived. The cumulative damage to coastal cities from Miami to Boston was staggering. On the Pacific coast, a series of major earthquakes — several above magnitude 8 — triggered tsunamis that struck across the Pacific Rim, with severe effects in Japan, the Philippines, Indonesia, and the western coasts of North and South America. In the interior of multiple continents, a combination of drought and locust swarms destroyed harvests across regions that

had been experiencing food security stress for years. Parts of sub-Saharan Africa, South Asia, and Central America faced genuine famine conditions by the autumn of 2047.

None of these disasters were, individually, unprecedented. What was unprecedented was their concentration in a single year, and the interaction effects that concentration produced. Relief resources deployed to the Atlantic hurricane zone were unavailable when the Pacific earthquakes struck. Agricultural supplies redirected to drought-affected regions were not available to areas hit by crop losses from storm flooding. The atmospheric moderators, deployed across the planet since the early 2040s, were making measurable progress on the long-term environmental problems they had been designed to address — but they could not prevent acute weather events, and the acute events of 2047 overwhelmed the response capacity of any individual nation or regional grouping.

What the disasters of 2047 demonstrated, with a clarity that years of political argument had not achieved, was that the problems facing humanity did not respect national borders. A hurricane did not stop at a border. A tsunami did not stop at a border. A locust swarm did not stop at a border. The resources needed to respond to these events could only be mobilized effectively at a scale that no remaining individual nation possessed, and the coordination mechanisms available for mobilizing them at a larger scale were still, despite a decade of consolidation, inadequate.

The Gang of Ten had been negotiating the terms of a formal world government for three years. The disasters of 2047 ended the negotiations. By December of that year, every remaining independent nation had agreed, with varying degrees of enthusiasm, to accede to the framework that would become EarthGov.

There is a tendency, a century after the fact, to regard the formation of EarthGov as an obvious and inevitable development — the rational response of a threatened civilization to circumstances that made continued fragmentation untenable. This is the perspective of people who grew up inside the world that EarthGov built, and it is not wrong, exactly. But it understates what the transition cost, and who paid for it.

What nations gave up, when they acceded to EarthGov, was sovereignty — the right to make their own decisions about their own affairs. This is a dry, legalistic way of describing something that was, for many people, far more personal than any legal concept. Sovereignty meant the right to maintain a distinct legal system shaped by a distinct history and culture. It meant the right to conduct foreign relations, to enter into alliances, to decide who was a friend and who was not. It meant the right to decide what language would be official, what holidays would

be observed, what symbols would represent the community. These were not trivial things. They were the accumulated expression of communities that had, in many cases, been building their distinct identities for centuries.

What nations received in return was, by any material measure, considerable. Security: a unified planetary defense that no individual nation could have maintained alone. Prosperity: access to the quantum tap economy and its extraordinary material benefits, distributed through EarthGov's resource allocation systems with a more even hand than market forces had ever achieved. Health: medical care, produced by Lyborne-derived autofactories and distributed by EarthGov's logistics systems, at a quality and availability that previous generations could not have imagined. Physical safety: the end of the interstate wars and internal conflicts that had consumed so much human life and energy in the pre-Incursion era.

The exchange was real on both sides. Those who emphasize only what was gained are overlooking genuine losses. Those who emphasize only what was lost are overlooking genuine gains. The most honest thing that can be said is that history is rarely offered clean choices, and that the people of 2048 made their decision under conditions that left them very few alternatives. What they built, for all its

imperfections, worked. The world that working produced is the one in which you live.

The Structure of EarthGov

The EarthGov that emerged from the Geneva signing was organized into four branches, each designed to balance the others and to address the specific failures of governance that the pre-Incursion era had made painfully visible.

The first and most powerful branch was the **World Parliament**, divided into two houses. The upper house, the **Council of Governors**, included a single legislator from each Administrative District — the former nations, now reorganized under EarthGov's administrative framework — serving ten-year terms with no term limits. The Council of Governors could not initiate legislation but could amend or veto bills passed by the lower house. The lower house, the **Council of Representatives**, consisted of one legislator from each Administrative Unit, with a maximum of ten per Administrative District, serving five-year terms with limits on consecutive and lifetime service. Membership in both houses was determined by direct popular vote.

The second branch was the **Office of the World Executive**, responsible for implementing the laws the World Parliament passed. The **World Executive** — the individual holding the office's top position — was selected by the political party holding the most seats in the Council of Representatives, and served at that party's pleasure. The arrangement was

modeled on existing parliamentary systems that several of the Gang of Ten nations already used, and was chosen partly for that reason: it was a known quantity, with decades of operational history, rather than an untested innovation.

The third branch was the **World Court**, consisting of thirty-nine justices, any thirteen of whom would hear a given case. Justices were appointed by the World Executive and confirmed by the Council of Governors. The Court was organized into three regional divisions, with each justice rotating through assignments across regions to prevent the entrenchment of regional legal cultures within the court's jurisprudence.

The fourth branch was the **Forum of Last Resort** — a novel addition with no clear precedent in existing governance systems, designed specifically to address the fears of smaller nations and communities that their interests would be permanently subordinated to the priorities of the larger powers. The Forum allowed groups of citizens to formally challenge and potentially overturn laws they found oppressive, through a process modeled loosely on jury selection: citizens were drafted for Forum duty as needed, creating a randomized deliberative body that no organized political faction could reliably capture. The Forum could only render binary decisions — a challenged law either stood or was repealed entirely — which made its use a high-stakes gamble for challengers, since laws were typically bundled with multiple provisions, and repealing an onerous bundle might mean losing beneficial elements along with the harmful ones.

The Forum was controversial from the beginning and remains so. Its defenders argue that it represents a genuine innovation in democratic accountability — a mechanism that bypasses the organized interests that typically dominate representative bodies and gives ordinary citizens a direct check on legislative power. Its critics argue that its randomized composition and binary decision-making make it an unpredictable and blunt instrument, unsuitable for the nuanced judgments that good governance requires. The debate has not been settled in a century of operation, and it is unlikely to be settled soon.

The Dissenters

Not everyone was satisfied, and the historical record would be incomplete without acknowledging this. The ratification of EarthGov's founding documents was not, in every case, the product of genuine consent. Some nations acceded under economic pressure that left them little practical choice. Some populations were not consulted in any meaningful way, their governments having made the decision on their behalf with varying degrees of legitimacy. Some communities — indigenous groups, religious minorities, regional populations with strong distinct identities — found that EarthGov's administrative restructuring erased distinctions that had been important to them in ways that the new government's architects had not fully considered.

The protest movements that surrounded the ratification process were real, and their arguments were not frivolous. What they could not ultimately overcome was the combination of material incentives, security pressures, and the raw political power of the Gang of Ten, which had spent the previous decade arranging the world in ways that made resistance increasingly difficult. This is not an unfamiliar dynamic in the history of political consolidation. It is worth naming clearly, because EarthGov's considerable subsequent achievements do not retroactively validate the process by which it came into being, any more than the Night of Horror is redeemed by the defensive arsenal it helped build.

What EarthGov was, on the morning of March 3, 2048, was a beginning — imperfect, contested, built on foundations that mixed genuine vision with the residue of recent atrocity. What it became, over the decades that followed, is the subject of the next chapter.

Vocabulary

EarthGov — The Earth Government, established by international agreement on March 3, 2048, in Geneva. EarthGov replaced the United Nations and the informal coordinating authority of the Gang of Ten as Earth's primary governing body, assuming control over all life-sustaining resources and establishing a unified legal, military, and administrative framework for the entire planet.

World Parliament — The legislative branch of EarthGov, divided into two houses: the Council of Governors (upper

house, one member per Administrative District) and the Council of Representatives (lower house, one member per Administrative Unit). The World Parliament is responsible for passing all global legislation.

Council of Governors — The upper house of the World Parliament, consisting of one legislator from each Administrative District serving ten-year terms. The Council of Governors cannot initiate legislation but can amend or veto bills passed by the Council of Representatives.

Council of Representatives — The lower house of the World Parliament, consisting of one legislator from each Administrative Unit, with a maximum of ten per Administrative District, serving five-year renewable terms with lifetime limits. The Council of Representatives initiates legislation.

World Executive — The head of EarthGov's executive branch, selected by the political party holding the most seats in the Council of Representatives. The World Executive is responsible for implementing laws passed by the World Parliament and serves at the pleasure of the selecting party.

World Court — The judicial branch of EarthGov, consisting of thirty-nine justices organized into three regional divisions, any thirteen of whom hear a given case. Justices are appointed by the World Executive and confirmed by the Council of Governors.

Forum of Last Resort — The fourth branch of EarthGov, providing a mechanism for groups of citizens to formally

challenge and potentially overturn laws through a randomized deliberative process modeled on jury selection. The Forum can only render binary decisions — a challenged law either stands or is repealed entirely.

Administrative District — The EarthGov designation for former nations, which retained their geographic boundaries and some degree of cultural and administrative autonomy within EarthGov's unified legal and resource framework.

Primary Source

The following is a pamphlet distributed in multiple languages across several Administrative Districts in the months preceding EarthGov's ratification in 2048. The pamphlet's authors identified themselves only as "The Citizens' Defense Coalition." No organization by that name has been definitively identified in historical records, and the pamphlet is believed to have been produced by a loose network of nationalist and libertarian political activists operating across several countries in late 2047 and early 2048. The original was printed on recycled paper stock and distributed by hand in public spaces; digital versions circulated simultaneously via QEC networks. It is reproduced here from a copy archived by the EarthGov Historical Records Office.

. . .

THEY ARE BUILDING A CAGE AND CALLING IT A GOVERNMENT

Read this. Share this. They don't want you to see this.

What Is EarthGov, Really?

They will tell you that the Earth Government is a response to crisis. They will tell you it is temporary. They will tell you it is necessary. They have been telling you these things for three years, and in three months they intend to make it permanent — whether you agree or not.

Ask yourself: who decided this? Not you. Not your neighbors. Not the elected representatives of your country, who were told to sign or face the consequences. The Gang of Ten decided. The same ten governments that destroyed a dozen nations in a single night four years ago — governments, with their populations, simply erased — are now asking you to trust them with permanent, unlimited authority over every aspect of your life.

They are asking you to trust them. After the Night of Horror.

Think about that.

What You Will Lose

Your nation is not just a line on a map. It is your language, your law, your history, your right to govern yourself according to your own values and your own judgment. EarthGov will not protect these things. EarthGov will administer them — which means that

faceless bureaucrats in Geneva will decide which of your traditions are worth preserving and which are inefficiencies to be eliminated in the name of planetary coordination.

Your vote, under EarthGov, will mean less than it does today. The Council of Representatives gives your Administrative Unit — note that word, *Unit* — one representative per administrative division, subject to a maximum of ten per former country. Countries with populations of hundreds of millions will have the same number of upper house votes as territories with populations of thousands. This is not democracy. This is the Gang of Ten dressing up their existing power in democratic clothing.

The Disaster Question

They will point to 2047. The hurricanes. The earthquakes. The famines. They will say: you see? You cannot face these things alone. You need us.

We say: who caused those disasters? We have seen the atmospheric data. We have spoken with scientists whose names we cannot publish for their own protection. The atmospheric moderators deployed across the planet since 2042 have not been cleaning the atmosphere — they have been *changing* it, in ways that are not fully understood and are not being disclosed. The weather events of 2047 were not coincidences. They were not natural. They were the final argument in a negotiation that the Gang of Ten needed to close, and they were deployed precisely when they were needed most.

We cannot prove this yet. We are working on it. But ask yourself why, in a single year, every possible natural disaster struck every possible region simultaneously. Ask yourself who benefits.

What You Can Do

Do not consent. When the ratification process reaches your district, refuse it. Demand a public referendum with genuine freedom to vote against. Demand that the text be published in full in your own language before any vote occurs. Demand that the Night of Horror be formally investigated before its perpetrators are handed permanent authority over your life.

They will ignore you. They will call you a conspiracy theorist. They will call you a nationalist. They will call you an obstacle to planetary survival.

Let them. The people who were erased in 2040 were also called obstacles.

Your freedom is not negotiable. Your nation is not a Unit.

Read this. Share this. They don't want you to see this.

— *The Citizens' Defense Coalition, 2047*

The Citizens' Defense Coalition pamphlet is notable as a document of political opposition but also as an early example of a phenomenon that would recur throughout EarthGov's history: the combination of legitimate grievance with fabricated evidence. The pamphlet's concerns about

democratic accountability and the concentration of power in the Gang of Ten reflect arguments made by serious scholars then and since. Its claim that the 2047 natural disasters were engineered by the Gang of Ten is not supported by any evidence and has been investigated and rejected by multiple independent scientific bodies. The coexistence of these two elements — the real and the invented — within a single political document made the pamphlet simultaneously harder to dismiss and easier to discredit than either element alone would have been.

Review and Discuss

1 The chapter describes the formation of EarthGov as something that "happened because the alternatives had become untenable." What were those alternatives, and why had they become untenable by 2048? Do you think a world government could have been formed earlier, or were the conditions of 2048 specifically necessary?

2 The chapter explicitly addresses the tension between the Gang of Ten's role as "architects of atrocity and architects of governance." How do you evaluate this tension? Is it possible for institutions built by people who committed terrible acts to be genuinely good institutions? Does the origin of EarthGov affect how you think about its legitimacy?

3 The Citizens' Defense Coalition pamphlet mixes legitimate political concerns with conspiracy theories.

Identify at least one argument in the pamphlet that you consider genuinely worth taking seriously, and at least one that you consider fabricated or unfounded. What does the combination of these elements suggest about how political opposition works — then and now?

4 The sidebar describes the formation of EarthGov as a trade — sovereignty for security and material wellbeing. From your vantage point in 2140, do you think the trade was worth it? What would you need to know to answer that question with confidence?

5 The Forum of Last Resort is described as both a genuine innovation in democratic accountability and a blunt and unpredictable instrument. Based on the description in this chapter, which view do you find more persuasive? What additional information would help you evaluate it?

6 Edith Braunschweiger, the notary who witnessed the signing, felt "a stillness she could not explain." The chapter opens with her experience deliberately rather than with the political significance of the moment. Why do you think the chapter makes this choice? What does a human detail like Braunschweiger's stillness add to the historical account that a straightforward political narrative would not?

Further Reading

Braunschweiger, M. *My Mother's Stillness: A Biography of Edith Braunschweiger*. Zurich: Swiss Historical Press, 2099. A biography of the Geneva notary who witnessed EarthGov's founding documents, written by her daughter.

Modest in scope but valuable for the personal perspective it provides on the founding moment and the years surrounding it.

Delacroix, C. *The Negotiation Years: How EarthGov Was Drafted, 2045–2048*. Paris: European Historical Press, 2091. The most detailed published account of the three-year negotiating process that produced EarthGov's founding documents, drawing on declassified records from twelve of the participating delegations.

Kamau, N. *Consent and Coercion: The Ratification of EarthGov in Reluctant Nations*. Nairobi: Pan-African Academic Press, 2104. A study of the ratification process in nations that acceded to EarthGov under significant political and economic pressure, examining the degree to which genuine consent was present and what its absence means for EarthGov's democratic legitimacy.

Osei-Bonsu, T. *The Year the Sky Fell: Natural Disaster and Political Change in 2047*. Accra: West African University Press, 2088. A comprehensive account of the 2047 natural disasters and their political consequences, combining environmental history with political analysis.

Payette, B. *Four Branches: The Constitutional Logic of EarthGov*. Montreal: North American Academic Press, 2077. A close analysis of EarthGov's four-branch structure, examining the reasoning behind each design choice and comparing the resulting system to the historical precedents it drew on.

Siddaway, R. *Against the World State: A History of Anti-EarthGov Political Movements, 2045–2080*. London: Imperial Academic Press, 2096. A serious scholarly history of the political opposition to EarthGov's formation and early operation, treating the opposition's legitimate arguments with the attention they deserve while documenting the fabrications that undermined its credibility.

10

Life Under EarthGov: Society in the 2050s

By the end of this chapter, you should be able to:

- Describe how EarthGov changed daily life for ordinary people in the decade following its formation
- Explain the aptitude testing system, its rationale, and its eventual reform
- Analyze the relationship between security, freedom, and comfort in EarthGov society, including the human costs of relocation policy
- Evaluate the question of whether EarthGov in the 2050s is best understood as a benevolent government or a benevolent dictatorship — and consider why that question remains genuinely difficult to answer

The letter arrived on a Tuesday.

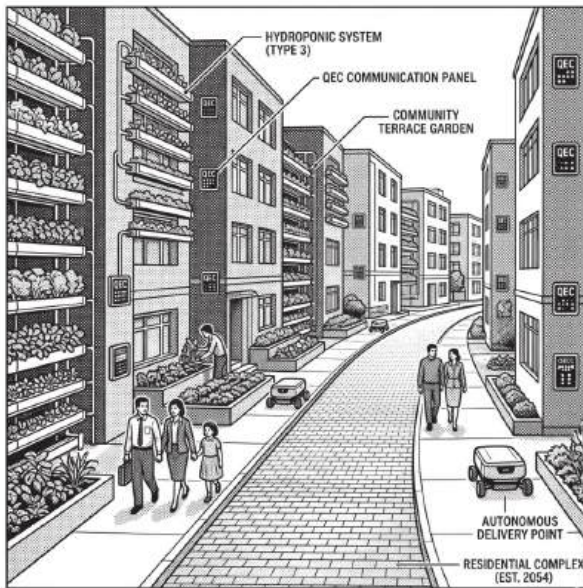
This is how most families in the 2050s remembered it, when they remembered it at all — not the date, not the season, but the day of the week, and the particular quality of the morning when the QEC notification chimed and the document appeared on the household screen. For the Andersson family of Malmö, Administrative District Sweden, it arrived on a Tuesday in March 2053. Henrik Andersson, who was forty-one and worked in atmospheric moderator calibration, read it first. Then he handed the screen to his wife, Petra, who read it twice. Their daughter, Linnea, was nine years old and eating breakfast and did not know, yet, what the letter meant.

The letter informed the Andersson family that Henrik's skills had been assessed by the EarthGov Labor Coordination Bureau as critically needed at a new moderator installation in the Administrative District of New Zealand. Relocation assistance would be provided. Housing had been assigned. Henrik was requested to report to his new posting within sixty days. The letter was polite, thorough, and nonnegotiable.

The Anderssons packed their apartment and moved to New Zealand. Linnea Andersson, who had grown up speaking Swedish and had never been more than two hundred kilometers from the town where she was born, started school that autumn in a city where the weather was different and nobody she knew was anywhere nearby. She

adapted, as children do. She did not forget what had been left behind.

Stories like the Anderssons' were common in the 2050s. They were, in a sense, the story of EarthGov's first decade — told not in the language of governance and policy, but in the language of families sitting around kitchen tables, reading letters on Tuesday mornings, and beginning the work of adapting to a world that had decided, on their behalf, where they were needed most.



The Logic of EarthGov

To understand what life under EarthGov felt like in the 2050s, it helps to understand what EarthGov was trying to

do — and why, in its own terms, it believed the methods it used were necessary.

EarthGov had inherited a planet still reorganizing itself for survival. The Oculous Cloud was incomplete. The Winchester network, while formidable, had the gaps that Chapter 8 described in detail. A second alien incursion remained a genuine possibility — one that Ares Command's planning staff regarded not as a question of if but of when. The resources needed to close those gaps, to build out the defensive network, to maintain the research programs that kept Earth's technological capabilities advancing, were finite. Allocating them efficiently — directing labor, materials, and energy to where they were most needed, rather than where market forces or individual preference might send them — was, in EarthGov's assessment, not optional. It was the precondition for everything else.

This logic was not invented by EarthGov. It had been practiced, in cruder forms, by wartime governments throughout Earth's history: the mobilization of national economies for military production, the direction of labor to essential industries, the subordination of individual preference to collective need during periods of existential threat. What EarthGov added to this historical tradition was scale, sophistication, and permanence. The tools available to it — quantum-computing-assisted resource modeling, QEC-networked logistics systems, AI-driven labor allocation — allowed it to pursue efficiency at a level of detail and accuracy that no previous government had been capable of. And the threat it was responding to, unlike the

national threats that had motivated earlier wartime governments, was genuinely planetary. The logic, in its own terms, was consistent.

What the logic did not fully account for was what it felt like to be a person inside it.

The Aptitude System

The centerpiece of EarthGov's approach to labor allocation was the aptitude testing system, introduced in 2050 and applied to all children in their ninth year of life. The tests were comprehensive — spanning cognitive ability, spatial reasoning, social aptitude, physical capability, and a range of more specialized assessments developed with the assistance of EarthGov's most advanced AI systems. The results did not determine a child's career with absolute finality, but they shaped it powerfully: children were assigned to educational tracks oriented toward the fields where their assessed aptitudes were strongest and where EarthGov's labor models projected the greatest need. Deviation from the assigned track was possible but required formal petition and was statistically uncommon.

The rationale was straightforward and, in its own terms, defensible. A planet that needed atmospheric scientists, quantum systems engineers, and drone network coordinators in specific numbers could not rely on the chance distribution of individual career preferences to produce those numbers. Matching people to roles where both their aptitudes and societal needs aligned was, the argument went, better for everyone: individuals would be

working in fields where they were likely to succeed, and society would have the specialists it required. The AI systems running the assessments were, by any technical measure, extremely good at identifying aptitude. Better, in most documented cases, than the individuals themselves would have been at assessing their own strengths.

What the system could not measure, and did not try to, was what a person wanted. Wanting, in the resource calculus of 2050s EarthGov, was a luxury that planetary defense could not yet afford.

Students in 2140 will find this difficult to imagine, and they should. The aptitude system was dismantled progressively in the years following the Galactic War, as the existential pressures that had justified it receded and as the social costs it had imposed became increasingly difficult to defend. The reforms of 2135 and 2138 restored full freedom of career choice to all citizens, along with formal EarthGov acknowledgments that the aptitude system had, in numerous documented cases, caused genuine harm to individuals whose abilities and inclinations had been misread or whose assigned paths had been wrong for reasons the AI assessments could not capture. Those acknowledgments were carefully worded and long overdue.

That the system was a product of its time, and that its time was genuinely desperate, does not make the harm it caused retroactively acceptable. It makes it understandable — which is not the same thing, and should not be confused with it.

Relocation

If the aptitude system was EarthGov's most consequential intrusion into the lives of children, the relocation policy was its most consequential intrusion into the lives of families. The logic was the same: labor was needed where it was needed, not necessarily where the labor happened to live. The solution was to move the labor.

Between 2049 and 2065, an estimated 340 million people were relocated under EarthGov's direction — moved from their home communities to new assignments in other Administrative Districts, other regions, other climates, and in many cases other linguistic and cultural contexts entirely. The relocations were not random. The Labor Coordination Bureau's AI systems matched workers to postings with considerable care, taking into account skill requirements, family composition, and — in theory — cultural proximity where possible. In practice, cultural proximity was a secondary consideration, subordinated to labor needs, and the matching was imperfect in ways that the AI systems' designers had not fully anticipated and that EarthGov was slow to acknowledge.

The human experience of relocation varied enormously. Some families adapted quickly and came to regard their new communities as genuinely their own. Some found that the disruption opened opportunities they would not otherwise have had — new professional networks, new cultural experiences, new relationships. The cross-cultural mixing that relocation produced contributed, in ways that historians have documented carefully, to the broader

cultural homogenization of Earth's population, accelerating a process that the dietary changes of the 2040s had already begun.

For others, the experience was something closer to rupture. Elderly people moved away from communities they had lived in for decades, from neighbors they had known for generations, from the particular landscapes and rhythms of places that had shaped who they were. Children uprooted from schools and friendships at critical developmental moments. Extended families dispersed across multiple Administrative Districts, unable to provide each other the support that proximity makes possible. Languages and local cultural practices that depended on community concentration for their survival found those concentrations broken up, and did not always recover.

EarthGov's official position on relocation policy, for most of the 2050s and 2060s, was that the program was necessary, that hardship was regrettable but unavoidable, and that the material benefits provided to relocated families — housing, employment, resettlement assistance — constituted adequate compensation. This position became increasingly difficult to sustain as the decades passed and as the social research accumulated. By the 2090s, EarthGov historians and social scientists were producing scholarship on relocation's human costs that the government found uncomfortable. By 2120, the relocation program had been officially characterized in EarthGov's own historical records as "a policy whose necessity does not diminish its costs, and whose costs were not adequately acknowledged at the time." The

phrasing was diplomatic. What it was acknowledging was genuine.

A century after EarthGov's formation, scholars continue to disagree about how to characterize what it was in its early decades. The disagreement is not merely academic; it touches on questions about the nature of legitimate governance that remain live in any society, including your own.

Those who characterize early EarthGov as a benevolent government point to its achievements: the elimination of poverty, the provision of universal healthcare, the dramatic reduction in violent conflict, the successful prosecution of planetary defense. They note that EarthGov's institutions — the World Parliament, the World Court, the Forum of Last Resort — were genuinely democratic in their design, that elections were held freely, and that the government's authority derived from a founding document to which, however imperfectly, the world's nations had consented. They argue that the restrictions on individual freedom that the aptitude system and relocation policy represented were genuine restrictions, but that they were restrictions of a kind that democratic governments had historically been permitted to impose in times

of genuine existential emergency — and that the emergency was real.

Those who characterize early EarthGov as a benevolent dictatorship point to different facts: that the consent underlying the founding documents was, in many cases, coerced; that the aptitude system removed from millions of people a choice — what to do with their working lives — that most political philosophies regard as fundamental; that relocation policy displaced hundreds of millions without meaningful recourse; and that the Forum of Last Resort, the mechanism designed to provide citizen accountability over government power, was structurally difficult to use and rarely decisive. They argue that a government can be genuinely beneficial in its outcomes and genuinely unaccountable in its methods, and that both things can be true simultaneously.

The most defensible position is probably that early EarthGov was both of these things at once — that it delivered real benefits through methods that were, by the standards of the political philosophy it claimed to embody, not fully justified. This is not a comfortable conclusion. Comfortable conclusions are rarely the most accurate ones. What can be said with confidence, a century on, is that EarthGov evolved: that the institutions it built proved capable of reform, that the acknowledged costs

of its early policies produced genuine changes, and that the government students inhabit in 2140 is meaningfully different from the one that sent the Andersson family to New Zealand on sixty days' notice.

Whether that evolution is sufficient vindication of the original design is a question each generation answers for itself.

What EarthGov Got Right

It would be a distortion to leave this chapter focused only on EarthGov's impositions, because the impositions existed within a broader context that most people who lived through the period — whatever their frustrations — recognized as genuinely better than what had come before.

Poverty, in the pre-EarthGov sense — the absolute deprivation of food, shelter, healthcare, and basic security — was effectively eliminated within a decade of EarthGov's formation. The quantum tap economy, combined with EarthGov's resource distribution systems, produced material abundance that was more evenly distributed than anything market economies had achieved. Every person on Earth, by the mid-2050s, had access to reliable nutrition, medical care of a quality that would have seemed extraordinary to earlier generations, and housing that met genuine standards of comfort and safety. The atmospheric moderators, under EarthGov's coordinated deployment, were making measurable progress on environmental

recovery. The violent conflicts that had killed millions of people in the decades before the Incursion had stopped.

These were not small things. The people who lived through them did not experience them as small. A grandmother in Lagos who had grown up during the resource wars of the 2020s and 2030s, and who was now living in a clean apartment with reliable power and food and medicine, might have had opinions about EarthGov's aptitude tests and relocation policies — and many did, expressed with considerable feeling. But she also understood, with the clarity of direct personal experience, what the alternative had looked like.

The 2050s were, in the end, a decade of genuine improvement in the material conditions of human life, delivered through methods that were frequently coercive and that left real wounds. Both of those things were true, simultaneously, for the people who lived them. History rarely offers clean verdicts on moments like this, and this one is no exception.

Vocabulary

Aptitude test — A comprehensive assessment administered to all EarthGov children at age nine, measuring cognitive, physical, and specialized abilities to guide career track assignment. The aptitude system was introduced in 2050, progressively reformed following the Galactic War, and formally dismantled by the reforms of 2135 and 2138, which restored full freedom of career choice to all citizens.

Administrative Unit — The subdivision of an Administrative District used for purposes of representation in the Council of Representatives and for local administrative functions. Administrative Units replaced the counties, provinces, and other sub-national divisions of the pre-EarthGov era, though their boundaries frequently followed existing geographic and cultural lines.

Resource allocation — The process by which EarthGov distributed available materials, energy, labor, and other resources across competing needs. EarthGov's resource allocation systems, supported by quantum-computing-assisted modeling and AI, operated at a scale and precision that previous governments had not been capable of, and touched virtually every dimension of daily life.

Civil liberties — The individual rights and freedoms — of speech, movement, career choice, cultural practice, and others — that political philosophy generally regards as belonging to persons rather than governments. Early EarthGov's policies, including aptitude testing and relocation, restricted civil liberties in ways that were justified at the time on grounds of planetary emergency and that were progressively restored as that emergency receded.

Labor Coordination Bureau — The EarthGov administrative body responsible for managing the aptitude testing system, career track assignments, and relocation policy. The Bureau operated under the Office of the World Executive and was one of early EarthGov's most powerful and most controversial administrative agencies.

Primary Source

The following is a public information pamphlet produced by the EarthGov Office of Citizen Preparation, distributed to families in Administrative Districts globally in the spring of 2052. The Office of Citizen Preparation was an early EarthGov communications body whose function was to explain and promote government programs to the general public; it was reorganized and renamed in 2061 following criticism that its materials were more promotional than informational. The pamphlet is reproduced here from a copy in the EarthGov Historical Records Office.

YOUR CHILD'S BRIGHT FUTURE STARTS HERE! *A Guide for Families Preparing for the EarthGov Aptitude Assessment Produced by the Office of Citizen Preparation, Earth Government — 2052*

Congratulations!

If you're reading this pamphlet, your child is approaching one of the most exciting milestones in a young EarthGov citizen's life: the Aptitude Assessment!

We know that as a parent or guardian, you may have questions. That's completely natural. The Assessment is new, and new things can sometimes feel unfamiliar. That's why the Office of Citizen Preparation has prepared this

guide — to help your family understand what the Assessment is, why it matters, and how it will help your child build the bright, purposeful future they deserve!

What Is the Aptitude Assessment?

The EarthGov Aptitude Assessment is a friendly, comprehensive evaluation designed to help identify each child's unique strengths and abilities. Conducted by trained Assessment Specialists in comfortable facilities near your home, the Assessment takes approximately two days and covers a range of activities — some cognitive, some physical, some creative — that give our specialists a complete picture of your child's remarkable potential.

The Assessment is not a test your child can "fail." Every child has strengths. The Assessment's job is to find them!

How Will the Assessment Help My Child?

Here's the exciting part: the Assessment doesn't just tell you what your child is good at. It helps connect your child's abilities to the fields where they can make the greatest contribution to our shared world — and where they are most likely to find a fulfilling, purposeful career!

EarthGov's Labor Coordination Bureau uses Assessment results, combined with sophisticated modeling of our planet's needs, to recommend educational pathways tailored to each child's profile. These pathways lead to careers in the fields that matter most: atmospheric science,

quantum systems engineering, food systems management, space defense operations, medical services, and dozens of others!

Think of it this way: before EarthGov, a child with a gift for complex systems thinking might spend years studying something that didn't use that gift — and end up in a role where their potential was wasted. With the Assessment, that child's gift is recognized early, developed carefully, and directed toward the work where it will do the most good. For them. For all of us.

A Message from the Labor Coordination Bureau

"We understand that some families have questions about the educational pathway system. We want to be clear: pathways are recommendations, not assignments. Families who feel strongly that their child's pathway does not reflect their child's full potential are encouraged to speak with their district's Assessment Review Coordinator, who can discuss options for pathway review.

What we can promise is that every pathway recommendation is made with your child's success in mind — and with the needs of a planet that is counting on all of us to contribute our best."

— Office of the Director, Labor Coordination Bureau

What Should My Child Expect?

Day One focuses on cognitive and creative activities — puzzles, scenarios, discussions with Assessment Specialists. Your child should be rested and should eat a good breakfast! There are no right or wrong answers. The Specialists are there to learn about your child, not to evaluate or judge.

Day Two covers physical assessments and specialized aptitude screenings. Comfortable clothes are recommended. Lunch is provided by the Assessment Center — a delicious, nutritious meal from our EarthGov-certified hydroponic kitchens!

After the Assessment, families will receive a detailed profile of their child's strengths and their recommended educational pathway within thirty days. An Assessment Specialist will be available to discuss the results and answer any questions.

Building a World Together

EarthGov exists because we are, all of us, stronger together than apart. The Aptitude Assessment is one of the ways we put that belief into practice — matching each person's unique gifts to the work our shared world needs most.

Your child is part of something extraordinary. They are growing up in a world safer, healthier, and more united than any that has come before. The Assessment is our way of helping them take their place in it — contributing their best, finding their purpose, and helping build the future that all of us are working toward together.

We look forward to meeting your child.

*With warmth and confidence in our shared future, The
Office of Citizen Preparation Earth Government, 2052*

The pamphlet's tone — relentlessly positive, carefully vague about the binding nature of pathway assignments, and notably brief in its description of the review process for families who objected — is characteristic of the Office of Citizen Preparation's output during this period. The parenthetical note from the Labor Coordination Bureau, acknowledging that "some families have questions," is the document's only concession to the controversy surrounding the aptitude system, and it addresses that controversy by reframing pathway recommendations as less binding than they were in practice. Pathway review was available, as stated; it was also statistically uncommon in its success, a fact the pamphlet does not mention. The Office of Citizen Preparation was reorganized in 2061 following a World Parliament inquiry that described its communications as "promotional in character and misleading in effect."

Review and Discuss

1 The chapter describes EarthGov's aptitude system as "a product of its time." What does this phrase mean, and do you find it persuasive as a justification? Is understanding

why something happened the same as accepting that it was acceptable?

2 The Andersson family's relocation is described as "nonnegotiable." EarthGov's official position was that relocation was necessary and that the material benefits provided constituted adequate compensation. Do you agree? What does adequate compensation for displacement look like, and who should decide?

3 The aptitude pamphlet describes pathway assignments as "recommendations" while the chapter describes them as binding in practice. What does this gap between official language and operational reality reveal about how EarthGov functioned? Can you think of other examples — historical or contemporary — where official descriptions of government programs diverged from how those programs actually worked?

4 The sidebar presents the benevolent government and benevolent dictatorship arguments side by side and declines to fully resolve the debate. Which argument do you find more persuasive? What additional information would you need to be more confident in your assessment?

5 The chapter argues that EarthGov's achievements — the elimination of poverty, the provision of universal healthcare, the end of violent conflict — were genuine and significant, and that they coexisted with genuine coercion. Is it possible to evaluate these two things separately, or do the methods always contaminate the achievements? How have historians in other contexts dealt with this question?

6 EarthGov eventually acknowledged that relocation policy had caused harm that "was not adequately acknowledged at the time." What do you think adequate acknowledgment of historical harm looks like? Does acknowledging harm retroactively change anything for the people who experienced it, or only for those who come after?

Further Reading

Andersson, L. *New Zealand Was Not Home: A Memoir*. Stockholm: Nordic Historical Press, 2108. A memoir by Linnea Andersson — the child whose family's relocation opens this chapter — describing her experience of displacement and adaptation, and her later work as an advocate for relocation reparations policy.

Cain, R. *The Office of Citizen Preparation: Government Communication and Public Persuasion in Early EarthGov*. Dublin: Atlantic Academic Press, 2094. A critical history of EarthGov's early public communications apparatus, examining how government messaging shaped public understanding of — and consent to — programs like the aptitude system and relocation policy.

Driscoll, A. *Aptitude: The Science, the System, and the People It Got Wrong*. Sydney: Pacific Academic Press, 2101. A comprehensive history of the aptitude testing system, combining technical analysis of the AI assessment methodology with case studies of individuals whose pathway assignments were demonstrably incorrect and the consequences that followed.

Jones, D. *Three Hundred and Forty Million: The Human Geography of EarthGov Relocation*. London: Imperial Academic Press, 2089. The definitive demographic history of EarthGov's relocation program, tracing movement patterns, community disruption, and long-term social effects across Administrative Districts globally.

Prox, B. *Better Than Before: Material Living Standards Under Early EarthGov, 2048–2070*. Toronto: North American Academic Press, 2097. A rigorous economic history of living standards in the first two decades of EarthGov, documenting the genuine improvements in nutrition, healthcare, housing, and safety that the period produced across all income and geographic groups.

Sullivan, T. *What the Forum Could Not Fix: Civil Liberties and Institutional Limits in Early EarthGov*. Chicago: Great Lakes University Press, 2103. An analysis of the Forum of Last Resort's operational history in the 2050s and 2060s, examining the cases brought before it, the outcomes achieved, and the structural reasons why it proved less effective as a check on government power than its designers had intended.

11

The Second Incursion (2057)

By the end of this chapter, you should be able to:

- Describe the Second Incursion and explain how Earth's response differed from its response to the First
- Explain what the Second Incursion revealed about the nature of the alien threat and the capabilities of Earth's defensive network
- Evaluate the ethical dimensions of the "shoot first" protocol, considering both the information available at the time and the questions that information could not answer
- Analyze what the warp drive hypothesis implied about the technology of the unknown species and the limits of Earth's understanding

At 17:38:04 UTC on February 17, 2057, an Oculous drone designated OC-7741, operating in a surveillance position approximately 340 million kilometers above the plane of the elliptic, registered an anomaly.

The anomaly was not, at first, obviously a ship. It was a thermal signature — a burst of heat and electromagnetic disturbance that lasted approximately 0.3 seconds and then resolved into a large, dark, rapidly moving mass. OC-7741's onboard quantum computer classified the signature as Priority One within milliseconds, flagged it for immediate QEC transmission, and began repositioning its imaging systems for maximum resolution tracking. The transmission reached Ares Command instantaneously.

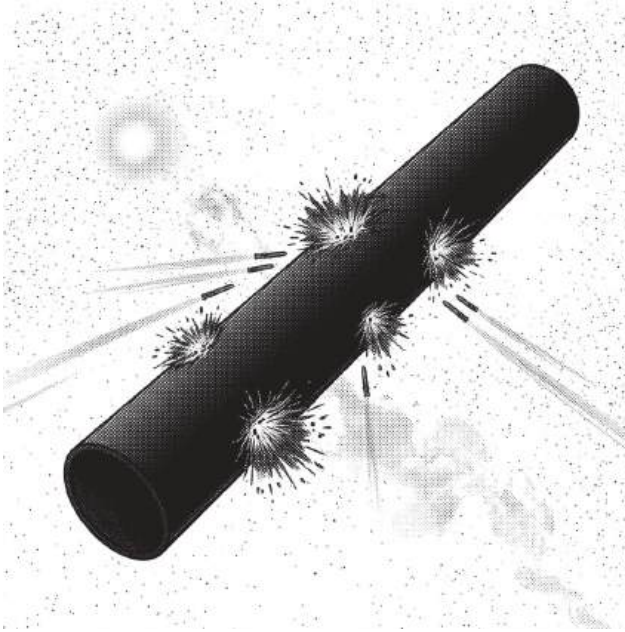
The time was 17:38:04. By 17:38:07, Ares Command's watch officer had read the alert. By 17:38:19, the duty commander had been pulled from dinner. By 17:38:41 — thirty-seven seconds after OC-7741 first registered the anomaly — Ares Command was at full alert status, and the Winchester network had begun its autonomous reorientation toward the incoming contact.

Tomás Varga, writing home in 2043, had described the underlying awareness of Ares service as knowing that "the thing we are watching for could appear at any moment on any feed." On February 17, 2057, it appeared.

What the Drones Saw

The contact was moving fast and decelerating — which meant it had been moving faster still before OC-7741 detected it. Its trajectory carried it downward through the elliptic plane on a course that left little ambiguity about its destination. It was headed for Earth, at a velocity that still substantially exceeded anything the gravitic drives recovered from the First Incursion tankers could have produced. It was running completely silent: no radio emissions, no communications, no signals of any kind across any frequency that the growing constellation of repositioned Oculous drones could detect.

The ship itself, as imaging resolved over the following minutes, was enormous. Later analysis would describe it as well over a kilometer in length — larger than the First Incursion mothership, though shaped differently. Where the mothership had shown the clear structural seams where its tanker ships had been nested, this vessel was seamless: a uniform matte black cylinder, rounded at both ends, its hull as featureless as the space around it. No windows. No visible drive exhausts. No markings. It absorbed light rather than reflecting it, which was part of why OC-7741 had detected it thermally rather than visually — the heat signature of its emergence from whatever mode of travel had brought it here had betrayed it before its visual profile could be resolved.



It did not communicate. It did not slow its approach to Earth beyond the deceleration already underway. It did not deviate from its trajectory. Whatever it was, wherever it had come from, it was coming directly toward Earth with every indication of purpose and no indication of any interest in the planet's inhabitants.

Thirty-Seven Minutes

The unnamed officer whose account informs much of what follows served as Ares Command's senior tactical analyst during the Second Incursion. Her testimony, given to the EarthGov Historical Commission in 2089 under a confidentiality agreement that has since expired, provides the most detailed firsthand account of the command center during those minutes. She has asked that her name not be

used in published historical works; this textbook respects that request.

"The first thing I remember," she told the Commission, "is how quiet it was. Not silent — the stations were active, people were talking, the alert tones were going. But underneath all of that, there was a quality of quiet I'd never experienced before. I think it was because everyone understood, simultaneously, exactly what they were looking at. We had trained for this for years. And now it was real, and nobody had anything to say about that because there was nothing to say. There was only what came next."

What came next was a sequence of decisions that Ares Command's protocols had, in large part, already made. The incoming contact was not transmitting. It was not holding position. It was not demonstrating any behavior that the protocols' exception clauses — written to allow for the possibility of peaceful contact — would have required them to honor. Under the standing orders that EarthGov had established and Ares Command had drilled on for nearly a decade, the contact was a target.

"The duty commander asked me for a firing solution," the officer recalled. "I had one ready. I'd had one ready for about four minutes, because the computers had one ready and I'd been watching it update in real time as the tracking data improved. I gave it to him. He looked at it for — I don't know, maybe eight seconds. Then he authorized release."

Eleven Winchester-class railguns, selected for their firing geometry and their ability to deliver rounds without risk of miss trajectories that would endanger Earth or Ares,

executed the firing solution. The rounds traveled for several minutes before impact. During those minutes, the duty commander sat in his chair and watched the tracking displays, and the tactical officer stood at her station and watched the tracking displays, and twenty-two other people in the Ares Command center watched the tracking displays, and no one said very much.

"When the rounds hit," she said, "it was — there was a moment where nobody moved. Not relief, exactly. More like the feeling of a very large question being answered in a way you can't take back."

The Result

Ten of the eleven rounds struck the contact within a window of less than two seconds. The kinetic energy delivered was, by subsequent calculation, the largest release of destructive force in human history to that point, exceeding the combined yield of every nuclear weapon ever detonated on Earth's surface. The ship did not survive it. What remained was a widening field of debris, several secondary explosions — including at least one bright green energy release that analysts attributed to a catastrophically failing quantum tap-powered drive system — and nothing that could be identified as a surviving structure of any meaningful size.

Mining drones were dispatched to collect debris. A significant portion was sequestered near the asteroid belt for possible future study. The debris field contained no recognizable biological life forms, though the analytical

technology available in 2057 was not capable of detecting microscopic organic material in a debris field of that density and distribution. This limitation would later become relevant in ways that no one in 2057 could have anticipated.

Two facts stood out from the forensic analysis that followed. First: the contact had shown no evidence of detecting the incoming rounds. It had performed no evasive maneuver, deployed no countermeasure, and taken no defensive action of any kind. Whether this was because it lacked defenses, because its defenses had failed, or because it simply had not expected the attack, could not be determined from the evidence available. Second: the contact had appeared from above the elliptic plane, at a distance and velocity that no gravitic drive — not even the most advanced gravitic drives that Earth's own engineers had developed — could have produced. It had, somehow, arrived from a place that gravitic drives could not reach, traveling at a speed they could not explain.

This was the warp drive problem, and it would occupy Earth's scientists and military planners for years.

The gravitic drives recovered from the First Incursion tankers, and subsequently refined through a decade of Human engineering work, operated within the plane of the elliptic. This was not a limitation of the drives' design but a consequence of the physics they exploited:

gravitic drives manipulated gravitational gradients, and the gravitational landscape of the solar system — shaped by the Sun's mass and the orbital mechanics of the planets — was richest and most navigable within the elliptic plane. Above and below the plane, the gradient flattened, and the drives' efficiency dropped rapidly. At the distance from the plane where the Second Incursion ship had appeared, a gravitic drive would have been effectively useless.

Both incursion ships had arrived from above the plane. This was not a coincidence. It was, Lyborne Industries researcher Dr. Kenji Watanabe argued in a widely circulated 2057 internal paper, a navigational signature: the ships had arrived from outside the solar system using a drive system fundamentally different from gravitic technology, had transitioned out of that drive system above the plane, and had then relied on inertia — and in the First Incursion's case, subsidiary gravitic drives — to complete their approach.

Watanabe called this hypothetical drive system a warp drive, borrowing a term from the science fiction literature of the twentieth and early twenty-first centuries. He was careful to note that the term was descriptive rather than explanatory — it named the phenomenon without claiming to understand the mechanism.

What the mechanism might be was a question that Earth's physicists pursued with considerable energy after 2057, and that produced a range of theoretical proposals whose variety reflects how genuinely unknown the answer was.

Some theorists proposed a form of spacetime compression — the ship remaining stationary while the space around it was folded, reducing the effective distance to be traveled. This concept had appeared frequently in pre-Incursion science fiction and had some basis in the theoretical physics of the late twentieth century; the mathematics were known, but the energy requirements were, by any calculation Earth's physicists could perform, prohibitive. Others proposed that the ships were exploiting naturally occurring spacetime structures — shortcuts built into the fabric of the universe at scales too large for Earth's instruments to have detected. Still others suggested that the drive worked by manipulating dimensions of spacetime that Human physics had not yet identified. None of these proposals could be tested with the tools available in 2057. All of them implied, with varying degrees of directness, that the civilization responsible for the incursion ships was operating with a physical understanding of the universe that was substantially beyond humanity's own.

Students familiar with the FTL corridor system that makes Galactic travel possible today will recognize, in these early theories, an intuition that was correct in its general shape even when wrong in its specifics. What Earth's scientists in 2057 could not have known was how right they were to reach for concepts well beyond their existing framework — or how much of that framework would need to be rebuilt before the truth became accessible.

The Ethics of Firing First

The decision to destroy the Second Incursion ship has been debated since the morning after it was made. It is a debate worth engaging with seriously, because the questions it raises do not have clean answers — and because the answers you find will tell you something about how you think about the relationship between security and restraint.

The case for the decision is straightforward. The contact was behaving identically to the ships of the First Incursion: arriving without announcement, without communication, on a direct trajectory toward Earth. Earth had been attacked once. It had established a protocol that balanced the need for defense with a genuine provision for peaceful contact — the exception clause that would have suspended the automatic response if the contact communicated or held position. The contact did neither. To have held fire would

have been to risk allowing another incursion to proceed, with unknown consequences, on the basis of a hope that the evidence did not support.

The case against is harder to articulate but no less serious. The contact was destroyed before any attempt at communication was made by Earth — and Earth's communication capabilities in 2057, while limited, were not nonexistent. The decision was made in under forty minutes, by a small group of people operating under protocols designed for a worst-case scenario, about an event that might not have been a worst-case scenario. The contact was not transmitting — but absence of transmission is not the same as hostile intent. It was moving toward Earth — but so would a ship on an approach trajectory for peaceful contact, if its crew did not know that Earth required communication as a precondition of safe passage.

The unnamed officer, asked by the Historical Commission whether she had any doubts about the decision, answered carefully. "I had doubts," she said. "I think anyone who tells you they had no doubts about destroying something that large, that fast, without knowing what was inside it — I'd question their judgment. Doubt is appropriate. What I believed, and still believe, is that the duty commander made the best decision available to him with the information he had. Whether it was the right decision in some larger sense — that's a different question, and I don't think I'm the right person to answer it."

She is correct that it is a different question. It is also your question, as a student of this history. The information

available to you at this point in the course is the same information that was available to Ares Command on February 17, 2057. Evaluate the decision on that basis. Later chapters will give you additional information that bears on this question — but the ethical evaluation of what was done should be attempted with what was known, not only with the benefit of hindsight.

Aftermath

The effect of the Second Incursion on Earth society was immediate and clarifying. The voices that had, in the years since the First Incursion, argued that the event had been a one-time anomaly — perhaps a navigation error, perhaps a rogue actor, perhaps something that would never be repeated — fell silent. Not because those voices were proven wrong by the Second Incursion's facts, but because the political and psychological space for that argument had collapsed. Earth had now been approached twice, by ships that behaved identically, and the second approach had been stopped only by a defensive network built at enormous cost over the preceding decade. The cost had been justified. The network had worked. The question was what came next.

What came next, in Ares Command and in EarthGov's planning bodies, was the same calculation that had driven the original buildup — but recalibrated upward. If the Winchester network had worked against one ship, it might not work against several. If the warp drive hypothesis was correct, the next incursion could arrive from any direction

at any time. The Oculous Cloud, already insufficient by Ares Command's own estimates, needed to be larger, faster, and smarter. The guns needed to be bigger. The response times needed to be shorter.

Earth had bought itself time. It set about using that time with a focus and urgency that the years of waiting had, if anything, sharpened.

Vocabulary

Warp drive (theoretical) — The informal term used by Human scientists and engineers, borrowed from pre-Incursion science fiction, to describe the hypothetical faster-than-light drive system that the incursion ships appeared to use when traveling between star systems. The term described the phenomenon without explaining the mechanism; the actual physics of FTL travel would not be understood by Human scientists until substantially later.

Trajectory — The path an object follows through space under the influence of gravity and any applied thrust. Trajectory analysis was one of Ares Command's primary functions: tracking incoming contacts, projecting their future positions, and calculating firing solutions based on where a contact would be when railgun rounds arrived, rather than where it was when the rounds were fired.

Kinetic energy — The energy an object possesses by virtue of its motion. Winchester-class sabot rounds delivered their destructive force entirely through kinetic energy — the energy of an extremely massive object

moving at an extremely high velocity — rather than through chemical or nuclear reactions. At the velocities achievable by quantum tap-powered railguns, kinetic energy delivery exceeded the yield of any nuclear weapon in Earth's arsenal.

Debris field — The dispersed collection of fragments, gases, and particles that remains after the destruction of a large object in space. The debris field from the Second Incursion ship was collected by mining drones and sequestered for study, though the analytical limitations of 2057 meant that much of what it might have revealed remained inaccessible until later, more sophisticated analysis was possible.

Interdiction — The prevention of movement or transit through a defined area. Ares Command's firing protocols constituted a form of space interdiction: establishing a zone around Earth and the inner solar system into which unauthorized transit would be met with immediate destruction.

Primary Source

The following is an excerpt from an internal situation report filed by Ares Command's duty watch officer at 21:14 UTC on February 17, 2057 — approximately three and a half hours after the destruction of the Second Incursion contact. Internal situation reports of this type were transmitted via QEC to EarthGov's Joint Defense Coordination Committee

on a rolling basis during and after significant events. This document was classified at the time of filing and remained classified until 2098, when it was released as part of EarthGov's Second Incursion Archive. It is reproduced here from the official archive.

**ARES COMMAND — INTERNAL SITREP DTG:
172114ZFEB2057 CLASSIFICATION: SECRET — JOINT
DEFENSE COORDINATION COMMITTEE EYES ONLY
FROM: OC-ARES DUTY WATCH TO: JDCC-EARTH /
JDCC-DISTRIBUTED RE: CONTACT EVENT FEBRUARY
17 / POST-ACTION STATUS**

1. EVENT SUMMARY

At 173804Z, OC-7741 (elliptic-high surveillance, sector 7-NORTH) reported Priority One contact via QEC relay. Contact designated NOVEMBER-ONE. Full alert declared 173807Z. DC authorization obtained 173841Z. Firing solution executed 173849Z using eleven (11) WC-LONG assets (designations WL-004, WL-011, WL-019, WL-022, WL-031, WL-044, WL-055, WL-061, WL-072, WL-080, WL-089). Round impact confirmed 174203Z. Contact destroyed. No penetration to inner defensive envelope.

2. CONTACT PROFILE

NOVEMBER-ONE: cylindrical, matte-black hull, estimated LOA 1,100-1,400m, high confidence. No emissions detected across monitored spectrum prior to engagement. No communications, IFF, or beacon activity. Entry vector consistent with high-elliptic approach (sector 7-NORTH,

bearing consistent with prior First Incursion approach corridor). Entry velocity at first detection: approximately 0.08c, decelerating. No evasive action observed during engagement window.

3. ENGAGEMENT ASSESSMENT

Ten (10) of eleven (11) rounds confirmed impact. Round WL-019 assessed as near-miss, impact on debris field only. Kinetic delivery assessed as well above threshold for total destruction of contact. No major structural fragment larger than 40m detected in subsequent debris field survey. Secondary detonations (7 confirmed) consistent with QT power system failures. One (1) anomalous energy release (GREEN-CLASS) at T+14 seconds post-impact, consistent with WL-2059 event records. Cause: drive system catastrophic failure, assessed HIGH CONFIDENCE.

No evidence of contact having detected incoming rounds. No evidence of defensive measures deployed or attempted.

4. DEBRIS FIELD STATUS

Survey drones OD-114 through OD-119 tasked to debris field. Initial survey complete. No large structures recovered. No objects consistent with crew quarters, biological support systems, or life forms detected. Micro-biological sampling not possible with current OD-series capability. Debris field sequestration underway via mining drone assets. Estimated collection: 60-70% of total field mass. Remainder dispersed beyond practical recovery range.

5. CURRENT STATUS

ARES COMMAND: ALERT STATUS AMBER. WC-LONG network: full operational, reoriented to standard surveillance bearing post-engagement. OC-CLOUD: nominal. No additional contacts detected. EarthGov JDCC notification transmitted 174300Z. Awaiting guidance on post-event protocol review and public communication timeline.

6. COMMANDER'S NOTE

WC network and OC-CLOUD performed to specification. Response time from first contact to firing solution: 45 seconds. DC decision to authorize fire: 8 seconds deliberation. Assessment: protocols effective. Recommend immediate review of OC-CLOUD sector 7-NORTH density — pre-event coverage in high-elliptic zone remains below planning threshold. NOVEMBER-ONE detection was marginal. A contact entering on a slightly different vector might not have been detected with sufficient lead time for effective engagement.

We got lucky on the geometry. We should not assume that luck will continue.

— *Duty Watch, Ares Command, 172114ZFEB2057*

The duty watch officer's closing note — "We got lucky on the geometry. We should not assume that luck will continue" — was quoted in full in EarthGov's subsequent review of Oculous Cloud coverage requirements, and became something of a watchword in Ares Command planning discussions for the remainder of the decade. The

clinical precision of the report's main body, and the sudden plainness of its final paragraph, are characteristic of a certain kind of military writing: the official language held until the official language was no longer sufficient, and then set aside.

Review and Discuss

1 The chapter describes the thirty-seven seconds between OC-7741's detection of the contact and Ares Command's full alert as a sequence of specific decisions and actions. What does this sequence reveal about how Ares Command's protocols functioned, and what role did human judgment play versus automated systems?

2 The unnamed tactical officer says that when the rounds hit, the feeling was "a very large question being answered in a way you can't take back." What question do you think she meant? Do you think that feeling was unique to this situation, or does it describe something more general about irreversible decisions?

3 The chapter presents two arguments about the ethics of the shoot-first decision — the case for and the case against — without resolving them. Based only on what you know at this point in the course, which argument do you find more persuasive, and why? Be specific about what information you are relying on.

4 The warp drive sidebar describes several competing theories about how the incursion ships traveled between star systems. What do the differences between these theories reveal about the state of Human scientific understanding in 2057? What does it mean to have a name for something — "warp drive" — without understanding what it actually is?

5 Recall from Chapter 8 that the duty watch officer's closing note — "We got lucky on the geometry" — became a planning watchword at Ares Command. What did he mean, and how does this connect to the mathematical limitations of Oculous Cloud coverage described in Chapter 8's sidebar?

6 The chapter asks you to evaluate the shoot-first decision based on the information available in February 2057. Make a note of your current assessment. Later chapters will provide additional information that bears on this question, and you will be asked to revisit your evaluation. What would it take — what additional information, revealed later — to change your mind?

Further Reading

Bielawski, B. *Sector Seven North: The Oculous Cloud Coverage Failure and Its Consequences*. Warsaw: Central European Academic Press, 2084. A technical analysis of the surveillance gap that made the Second Incursion's detection marginal, examining what different drone deployment decisions might have meant for detection time and response options.

Gavant, J. *Warp, Jump, Fold: A History of Human Theories About Faster-Than-Light Travel, 2057–2070*. Geneva: EarthGov Scientific Press, 2091. A comprehensive survey of the theoretical proposals produced by Human physicists attempting to explain the incursion ships' apparent FTL capability, from the immediately post-Second Incursion period through the First Contact revelations.

Grehan, O. *Thirty-Seven Seconds: Decision-Making Under Extreme Uncertainty at Ares Command*. Dublin: Atlantic Academic Press, 2096. A study of the Second Incursion's command decision sequence, drawing on declassified records and survivor testimony to reconstruct how Ares Command moved from detection to firing solution in under a minute.

Medd, J. *The Silence of NOVEMBER-ONE: What the Second Incursion Ship Did Not Do, and What That Might Have Meant*. Edinburgh: Northern Academic Press, 2103. A contrarian analysis arguing that the Second Incursion ship's failure to communicate or maneuver defensively may have reflected something other than hostile intent, and examining what alternative interpretations of its behavior were available to Ares Command at the time.

Nikolic, A. *Fire and Restraint: The Ethics of Preemptive Engagement in Space Defense*. Belgrade: Eastern European Academic Press, 2089. A philosophical and historical analysis of the shoot-first protocol, examining the ethical frameworks available in 2057 and how they did — and did not — apply to the unprecedented situation Ares Command faced.

Payette, B. *What the Debris Told Us: Forensic Analysis of the Second Incursion Contact*. Montreal: North American Academic Press, 2079. The most detailed published account of the post-engagement debris field analysis, including discussion of the analytical limitations that prevented more complete conclusions and what subsequent technology might eventually reveal.

12

Defensive Buildup: Never Again (2058–2063)

By the end of this chapter, you should be able to:

- Describe the new defensive technologies developed after the Second Incursion, including the Super Winchester class and the Attacking Eye drones
- Explain how the Attacking Eye drones worked and what engineering innovation made them possible
- Describe Hellfire I and explain how it differed from Ares station in both design and strategic role
- Evaluate the social and psychological effects of a society that has committed itself, permanently and institutionally, to military readiness

At 09:14 on a Tuesday morning in September 2059, every school in every Administrative District on Earth conducted the same drill simultaneously.

Students were walked through the procedure they had been practicing since kindergarten: move away from windows, sit against interior walls, cover your head, stay quiet, wait for the all-clear tone. Teachers had scripts. The scripts had been written by EarthGov's Civil Defense Coordination Bureau, translated into every language used in EarthGov's educational system, and distributed six weeks in advance so that no school would have an excuse for noncompliance. The drill lasted four minutes and thirty seconds. Afterward, teachers were instructed to spend fifteen minutes discussing with their students what the drill was for and why it mattered.

In a classroom in Nairobi, a seven-year-old named Amara Osei-Mensah asked her teacher whether the drill would actually help if the ships came back. Her teacher, following the script, said yes. Amara Osei-Mensah, who was seven and therefore unburdened by the social pressure to accept answers that did not quite satisfy her, looked at the interior wall she had been sitting against and appeared to think about this for a moment. Then she asked whether the wall was stronger than the ships.

Her teacher did not have a scripted answer for that one.

The story of Amara Osei-Mensah's question circulated within EarthGov's education system for years afterward, passed between teachers the way good stories pass

between people who share an experience — half ruefully, half with genuine affection for the child who had articulated what most adults were carefully not saying out loud. The drills were not designed to save lives if the ships came back. They were designed to make people feel that something was being done. In a society that had confirmed, two years earlier, that the threat was real and ongoing, the feeling that something was being done was not nothing. But it was not the same as the something itself.

The something itself was being built in space.

The Super Winchester

The engineering review that followed the Second Incursion identified two primary gaps in Earth's defensive posture. The first was coverage — the Oculous Cloud's surveillance density remained below what Ares Command considered adequate, a problem that required more drones and better deployment. The second was destructive capacity. The Winchester-class guns had performed exactly as designed against the Second Incursion contact, but the contact had been a single ship on a predictable trajectory. A more dispersed attack, or a ship with better evasive capability, or multiple simultaneous contacts — any of these scenarios would have strained the Winchester network in ways that the engagement's apparent success had obscured.

The solution to the destructive capacity problem was, in its broad outline, straightforward: build a bigger gun. The

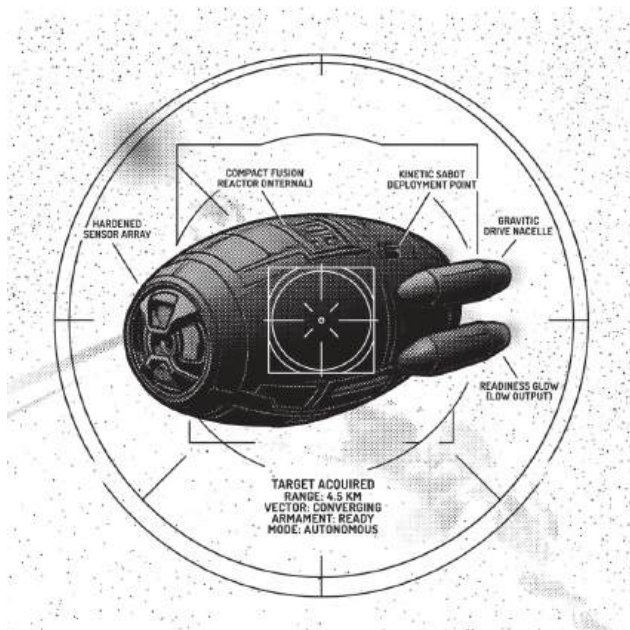
Super Winchester class, authorized in early 2058 and entering deployment by late 2059, delivered more than 300 megatons of kinetic force per round — nearly double the original Winchester's output. The rounds themselves were larger and denser, composed of refined asteroid materials with higher mass concentration than the first generation's more heterogeneous composition.

What was not straightforward was the engineering required to achieve this at scale. The Winchester class had pushed the boundaries of what quantum tap power systems could deliver to electromagnetic acceleration arrays of that length. Simply scaling up the design ran into fundamental limitations: at a certain point, the power delivery systems required to accelerate a significantly larger round to significantly higher velocities produced heat and electromagnetic interference that the gun's own structure could not manage. The first two prototype Super Winchester designs failed for exactly this reason — not catastrophically, but in ways that made it clear that incremental scaling would not work.

The solution came from Lyborne's materials science division, which developed a new class of quantum tap array that distributed power delivery across the gun's full length rather than concentrating it at the acceleration chamber. The principle was analogous to the difference between pushing a heavy object from one end and lifting it simultaneously at multiple points along its length: the distributed approach reduced peak stress at any single point while maintaining total force delivery. Combined with

A History of the Galactic War

a new barrel lining material that could absorb and dissipate the heat generated by higher-energy rounds, this allowed the Super Winchester to achieve its target specifications without structural failure.



By the end of 2061, more than four hundred Super Winchester guns were in deployment throughout the solar system, supplementing rather than replacing the existing Winchester network. The combined arsenal represented a destructive capacity that Ares Command's planning staff assessed as adequate against anything up to a coordinated attack by a dozen or more simultaneous contacts — a threshold that felt reassuring until one considered that nobody had any idea how many contacts a determined adversary might send.

The Attacking Eye

The Super Winchester addressed the destructive capacity gap. The Attacking Eye drone addressed something different: the problem of response time against fast-moving contacts that might evade or survive railgun fire.

The engineering story of the Attacking Eye begins with an accident, as several of the most important engineering stories in this period do. In 2059, a team at Lyborne's orbital research facility was testing a new gravitic drive mounting configuration — attempting to understand whether drives could be more efficiently integrated into dense, compact structures rather than the large framework mounts used on auto-factories and Winchester guns. As part of this testing, they mounted a small drive unit onto a standard Winchester sabot round, essentially giving a projectile its own propulsion system, and accelerated it through the facility's test range.

What they observed was unexpected. The sabot round, which was a dense composite mass of iron and other materials not ordinarily associated with efficient drive energy conduction, appeared to conduct the gravitic drive's inertia-negation field throughout its entire body — not just through a structural framework, as previous experience had suggested was required, but through the mass itself. The round accelerated to test velocities without compression, deformation, or structural failure of any kind. It behaved, under acceleration, as if inertia did not apply to it.

This was, in retrospect, the discovery that made the Attacking Eye possible. If a dense mass could conduct the inertia-negation field, then a small drone — denser than an auto-factory, simpler than a Winchester gun, and equipped with its own gravitic drive — could be accelerated to velocities that nothing previously built by humanity had approached. The calculations suggested a maximum operational velocity of approximately half the speed of light, achievable in a very short period of time. At that velocity, a drone massing approximately a quarter of a Winchester sabot round would deliver kinetic energy roughly equivalent to a small Winchester round on impact — not quite the destructive power of a full-scale railgun, but delivered by a platform that could maneuver, self-direct, and respond to targets that a fixed railgun might miss.

The Attacking Eye drone that emerged from these calculations was small — roughly the size of a personal ground vehicle — and almost entirely unglamorous in appearance. It had no crew provisions, no life support, no communications systems beyond a basic QEC link for receiving targeting updates and confirming engagement status. It was, at its core, a gravitic drive, a quantum tap power supply, a hardened sensor array, and a dense structural mass, all integrated as compactly as engineering allowed. It was not designed to return from its missions. It was designed to find its target and become part of it at half the speed of light.

Thousands of Attacking Eye drones were deployed around Earth's orbit and throughout the inner solar system in the

eighteen months following their introduction. Their deployment doctrine placed them in coordinated clusters, each cluster assigned to a specific engagement zone and linked by QEC to Hellfire I's command systems. Upon detection of an incoming contact, the nearest cluster would orient, receive targeting data, and — unless countermanded by Hellfire I within a defined window — execute their suicide intercept. The window for countermand was short. At the velocities involved, hesitation was not a tactical option.

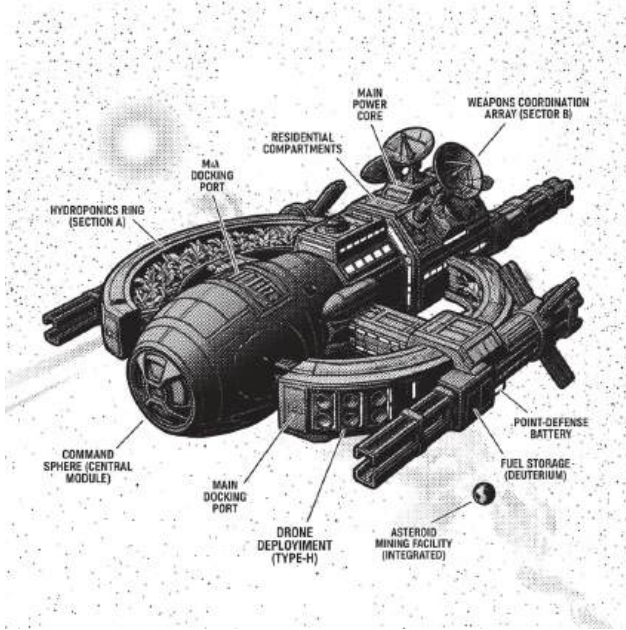
Hellfire I

Ares station had been, as Chapter 8 described, a cramped and functional installation: twenty-four people in a space designed for forty, sustained by hydroponics and determination, positioned between the orbits of Earth and Mars because that was the best available compromise between survivability and communications reach. It had been built quickly, under pressure, with the resources available in the early 2040s. It had served well. After the Second Incursion, it was no longer adequate.

Hellfire I was a different kind of installation. Where Ares had been assembled from existing components and adapted space station modules, Hellfire I was designed from the beginning as a permanent military command post, built to survive near-indefinitely without resupply and to maintain effective command and control of the entire solar system defensive network regardless of what happened to

Earth. It was larger than Ares by a factor of approximately six — not enormous by the standards of the space habitats that would be built in later decades, but large enough that its crew of one hundred and twenty could move through it without the constant awareness of proximity that Ares veterans described as one of the posting's defining psychological textures.

The additional space served specific purposes. Hellfire I's hydroponics capacity was sufficient to sustain its crew for an indefinite period with meaningful dietary variety — not the monotonous efficiency diet that Ares crews had managed on, but something closer to genuine nutritional and culinary adequacy. Its water recycling systems were redundant three times over. Its power supply included enough quantum tap capacity to maintain full operational status even if two of its three primary arrays failed simultaneously. Its QEC systems were distributed throughout the station's structure so that no single hit could eliminate communications capability entirely.



What Hellfire I was not, by the accounts of those who served on it, was comfortable in the way that word implies ease. It was better than Ares in every measurable respect — more space, better food, better recreational facilities, better medical capabilities. What it shared with Ares was the psychological core of the posting: the knowledge of what the station existed to do, the sustained vigilance, the dark humor that served as pressure release, the particular quality of sleep that came from being the people responsible for watching for something that could end civilization. Larger quarters did not change the nature of that weight. They made it slightly easier to carry.

Ares station was not decommissioned when Hellfire I came online. It was repositioned — moved further out, toward the

approach corridor that both incursion ships had used, and reconfigured as a secondary command node and advanced sensor platform. If Hellfire I was Earth's main eye on the solar system, Ares became, in its second life, the eye that looked specifically at the direction from which danger had twice already come.

The Second Incursion did not merely confirm that the alien threat was real. It changed the psychological relationship between Earth's population and that threat in ways that historians and social scientists of the period documented carefully — and that the people living through the change experienced in their bones.

Before the Second Incursion, the fear that Chapter 6 described as "weather" — always present, always in the background, but not always consciously attended to — had been a diffuse and somewhat abstract thing. It was the fear of something that had happened once, a decade ago, and might or might not happen again. After February 17, 2057, it was no longer diffuse and no longer abstract. It was confirmed. It was ongoing. And EarthGov's response — the school drills, the civil defense broadcasts, the mandatory emergency protocol training for every adult in every Administrative

District — institutionalized it in ways that made it impossible to set aside.

The consequences for mental health were measurable and serious. Anxiety disorders, already elevated compared to pre-Incursion baselines, increased significantly in the years following the Second Incursion and remained elevated through the 2060s. Sleep disturbances became common enough that EarthGov's medical systems developed specific clinical protocols for what was formally classified as Sustained Threat Response Syndrome. Children who grew up in this period — the generation born in the 2050s, for whom the drills and the broadcasts and the civil defense infrastructure were simply the texture of normal childhood — showed distinctive psychological profiles in later life: high risk tolerance in professional contexts, strong preference for collective decision-making, and what several longitudinal studies described as an unusual capacity for sustained vigilance that served them well in military and emergency management roles and was sometimes a liability in personal relationships.

The militarism that permeated civilian culture in this period was not imposed entirely from above. Much of it was genuinely felt. People who understood, viscerally, that the solar system's defenses were the only thing standing

between their families and something that had already come twice were not simply complying with civil defense requirements — they were expressing a genuine collective orientation toward survival. EarthGov's institutions channeled and formalized that orientation, but they did not manufacture it.

What was manufactured — or at least, deliberately cultivated — was a particular version of that orientation: one that emphasized readiness, discipline, and collective responsibility at the expense of individual reflection on what permanent military alertness was costing. The school drills were not designed to save lives. They were designed, as the unnamed teacher in Nairobi could not quite say to Amara Osei-Mensah, to make people feel that something was being done. Feeling was not nothing. But it was not the same as asking whether the something being done was the right something, or whether there might be costs to always being ready that the readiness itself made it difficult to see.

A Society Transformed

By 2063, Earth was a planet that had reorganized itself around a single priority more thoroughly than any civilization in its recorded history. The defensive buildup was not merely

a military program — it was the central fact around which economics, education, social policy, and cultural life were oriented. The aptitude system directed children toward defense-relevant fields. The relocation policy moved workers to where defense-relevant production required them. The atmospheric moderators, the hydroponic systems, the quantum tap economy — all of it existed within a frame whose ultimate justification was the same: Earth must be ready.

Whether this transformation was sufficient — whether the four hundred Super Winchester guns and the thousands of Attacking Eye drones and the hardened, redundant systems of Hellfire I added up to genuine security against a threat that was still, in 2063, only partially understood — was a question that Ares Command and Hellfire I's planners turned over constantly without being able to fully resolve. They had built the best defense they knew how to build. They had done so under conditions of genuine uncertainty about what they were defending against.

Seven years after the Second Incursion, that uncertainty would begin to resolve — not in the way anyone had planned, and not in the way anyone had feared.

Vocabulary

Super Winchester — The second generation of deep-space railgun weapons, entering deployment in 2059. Super Winchester guns delivered more than 300 megatons of kinetic force per round, nearly double the original Winchester class, achieved through a distributed quantum

tap power delivery system and new barrel materials developed by Lyborne Industries. More than four hundred were in deployment by the end of 2061.

Hellfire I — The space station that replaced Ares as Earth's primary space defense command post, constructed following the Second Incursion and fully operational by 2060. Hellfire I was approximately six times the size of Ares, designed for indefinite self-sufficiency, and capable of maintaining command and control of the full solar system defensive network even if cut off from Earth entirely.

Attacking Eye drone — A small, fast, autonomous interceptor drone developed following the accidental discovery that gravitic drives could negate inertia throughout a dense composite mass. Attacking Eye drones could accelerate to approximately half the speed of light, delivering kinetic energy roughly equivalent to a small Winchester round on impact. They were designed as single-use interceptors, deployed in coordinated clusters throughout the inner solar system.

Electromagnetic pulse (EMP) — A burst of electromagnetic energy capable of disrupting or destroying electronic systems. EMP hardening — designing systems to resist EMP damage — became a significant engineering priority following intelligence assessments of the unknown species' known weapons capabilities. The relevance of this particular capability would become clearer in subsequent years.

Inertia negation — The property of gravitic drives that counteracts the effects of acceleration on the drive's primary structure. The discovery that this property could be conducted through dense composite masses — not just structural frameworks — was the engineering breakthrough that made the Attacking Eye drone possible.

Primary Source

The following is the full text of a public address delivered by the World Executive on March 3, 2059 — the eleventh anniversary of EarthGov's founding — announcing the new defensive protocols and the deployment of the Super Winchester and Attacking Eye programs. The address was broadcast simultaneously across all QEC networks and translated into every language in EarthGov's official roster. It is reproduced here from the EarthGov Public Record.

ADDRESS TO EARTH Office of the World Executive 3 March 2059

Two years ago, our defenses worked.

I want to begin there, because it is true and because it matters. Two years ago, a ship entered our solar system uninvited, moving toward our world without communication and without hesitation, and the network of weapons and watchers that this planet spent a decade building stopped it before it could reach us. The men and women of Ares

Command performed with a precision and a courage that this office formally acknowledges, and that this planet owes a debt it cannot fully repay.

And yet we are here today not to celebrate what worked, but to address what remains unfinished. Because what worked two years ago worked against one ship. What we do not know — what we cannot know — is whether one ship is all that will come.

I will not pretend that what I am announcing today is painless. The expansion of our defensive programs — the Super Winchester network, the Attacking Eye deployment, the upgraded command infrastructure that will carry the name Hellfire I — represents a commitment of resources and human attention and human life that I do not take lightly. There are families on this planet who will spend the next years of their lives far from home, doing work that is difficult and sometimes dangerous, in places that are cold and dark and very far from everything they love. I know this. This office knows this. EarthGov is not unaware of what it is asking.

What I would ask you to hold alongside that awareness is this: we did not choose this situation. We did not seek it out, and we did not create it. What came to our sky in 2037 and again in 2057 came without our invitation and without our understanding, and it will come again — we do not know when, we do not know in what numbers, but we know enough now to know that the question is not whether but when. And when it comes, the only thing standing between our world and whatever it brings will be the network we are

building, and the people watching that network, and the willingness of this planet to sustain both.

We are building something extraordinary. It is being built at a cost that is real, paid by real people, and I will not dishonor that cost by pretending it is small. What I will say is that it is necessary. Not because this office has decided it is necessary, but because the evidence of our own sky has told us so, twice, and we have chosen to listen.

Earth has faced what it faced and is still here. We intend to keep it that way.

— *Office of the World Executive, 3 March 2059*

The address was notable, in the context of EarthGov's communications history, for what its chief speechwriter later described as "a deliberate choice to acknowledge cost rather than minimize it." Previous major defense announcements had tended toward a more purely resolute register, emphasizing capability and determination without dwelling on sacrifice. The 2059 address was different in tone, and that difference was intentional: internal EarthGov communications from the period show that the World Executive's office had concluded that a population being asked for sustained sacrifice over an indefinite period required acknowledgment of that sacrifice, not reassurance that it wasn't happening. Whether this represented a genuine evolution in EarthGov's relationship with its citizens, or a more sophisticated approach to managing public support for programs that might otherwise have

faced resistance, is a question historians have not fully resolved.

Review and Discuss

1 The chapter opens with Amara Osei-Mensah's question about whether the wall was stronger than the ships. What do you think her question reveals about how children processed the reality of Earth's situation in ways that adults sometimes didn't? Why do you think the story circulated within EarthGov's education system for years afterward?

2 The Attacking Eye drone emerged from an accidental discovery about gravitic drive inertia negation. The quantum tap was discovered partly by accident as well. What does this pattern suggest about the relationship between directed research and unexpected discovery? How should a society under existential pressure organize its scientific efforts to account for this?

3 The sidebar distinguishes between the diffuse background fear of the 2040s and 2050s and the sharper, institutionalized militarism that followed the Second Incursion. In your own words, what is the difference between these two psychological states? Which do you think is harder to sustain over time, and why?

4 The World Executive's address acknowledges that the defensive buildup involves real sacrifice by real people. The historian's commentary notes that this may reflect either

genuine evolution in EarthGov's relationship with its citizens or a more sophisticated approach to managing public support. How would you distinguish between these two explanations? Is it possible for both to be true simultaneously?

5 Hellfire I is described as better than Ares in every measurable respect but sharing its essential psychological character. What does this suggest about the limits of material improvement in addressing certain kinds of human experience? Can you think of other contexts where making conditions more comfortable has not changed the fundamental nature of what the conditions require?

6 Chapter 11 asked you to make a note of your assessment of the shoot-first decision and what it would take to change your mind. Having now read about the defensive buildup that followed — the Super Winchester, the Attacking Eye, the institutionalization of military readiness — has your assessment changed at all? What does Earth's response to the Second Incursion suggest about how the decision was interpreted by those who made it?

Further Reading

Brundage, J. *Hellfire: The Design and Construction of Earth's Permanent Space Command*. San Francisco: Pacific Engineering History Press, 2087. A technical and institutional history of Hellfire I's design and construction, drawing on Lyborne Industries engineering records and EarthGov defense archives.

Christopher, J. *The Attacking Eye: Engineering a Weapon at Half the Speed of Light*. Austin: North American Technical Press, 2093. The most accessible published account of the Attacking Eye drone's development, covering the accidental discovery of mass-conducted inertia negation and the engineering work that translated it into a deployable weapons system.

Holmes, L. *Sustained Threat Response: Mental Health Under Permanent Military Alert, 2057–2075*. Edinburgh: Northern Academic Press, 2099. A clinical and social history of psychological responses to the post-Second Incursion militarization, drawing on EarthGov medical records, longitudinal studies, and personal accounts.

O'Neill, J. *The Civil Defense State: EarthGov's Emergency Preparedness Programs and Their Social Effects*. Dublin: Atlantic Academic Press, 2104. A comprehensive history of EarthGov's civil defense programs, from the first post-Incursion drills through the full institutionalization of military readiness culture, examining both their practical functions and their social and psychological consequences.

Snover, J. *Never Again: The Strategic Logic of the Post-Second Incursion Buildup*. Bristol: European Military History Press, 2082. An analysis of the military planning decisions that produced the Super Winchester network, Hellfire I, and the Attacking Eye drone program, written with access to classified EarthGov defense planning records.

Wouters, J. *The Weight of Watching: Personal Accounts from Hellfire I's First Crews*. Amsterdam: European

Historical Collective, 2091. An oral history of the first generation of Hellfire I crew members, comparing their experience to the Ares veterans whose accounts informed Chapter 8 and examining how the larger, better-equipped station shaped the psychological texture of the posting.

13

First Contact (2064)

By the end of this chapter, you should be able to:

- Describe the events of First Contact and explain how they differed from the prior Incursions in character and consequence
- Explain Tertian's proposal and identify the key terms of the arrangement he outlined
- Analyze what the existence of the League of Affiliated Systems revealed about the nature of Galactic civilization
- Evaluate how Earth's prior experience of the Incursions shaped — and complicated — its response to genuine diplomatic contact

At 13:47 UTC on June 17, 2064, Specialist Second Class Yuki Ferreira was running a routine calibration check on Hellfire I's communications array when the array stopped being routine.

The contact had been detected four minutes earlier — a small ship, roughly a hundred meters in length, emerging from the same high-elliptic approach corridor that both prior incursions had used. The alert had gone out immediately. Ferreira had watched, from her station, as the defensive sequence she had drilled on hundreds of times began executing with the smooth, terrible efficiency that years of preparation had produced. The Super Winchester guns were slewing. The Attacking Eye clusters were orienting. The countdown to automatic engagement was running on her secondary screen, green numerals ticking downward with a patience that felt, given the circumstances, almost obscene.

What she was also watching, because her job was to watch the communications spectrum, was something the prior incursions had never produced: a signal. Not electromagnetic noise, not the passive thermal signature of a drive system, but a deliberate, structured, repeating transmission across multiple frequencies simultaneously. Her instruments identified it as radio wave — an old technology, a Human technology, the kind of thing that Earth had been broadcasting into space for more than a century before the First Incursion.

Ferreira flagged it immediately. The decoding system, which had been designed to recognize any structured

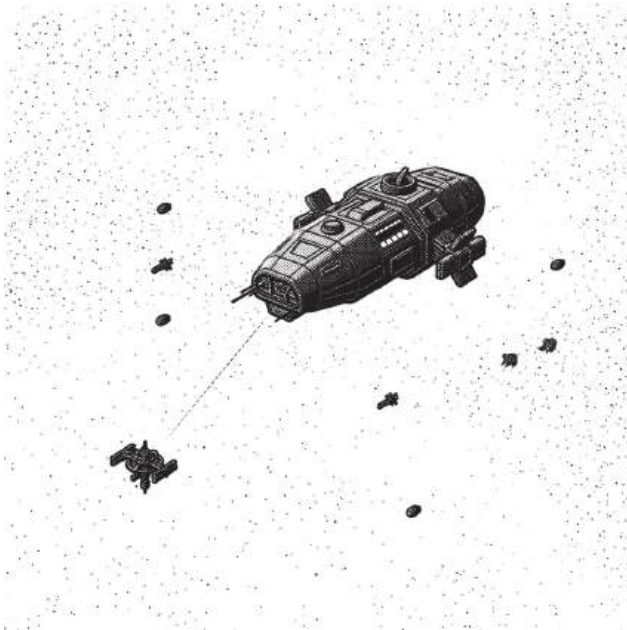
transmission regardless of format, resolved it in under thirty seconds.

What came out of the speaker was English.

She would later tell the Historical Commission that her first thought, hearing those words in that moment with the engagement countdown still running on her secondary screen, was not wonder or fear or any of the responses she might have predicted for herself. Her first thought was: *someone needs to stop that clock.*

She opened the command channel and said, very clearly, "Sir. You need to hear this."

The countdown stopped at fourteen seconds.



The Ship and the Message

The vessel that had prompted Ferreira's intervention was unlike anything that had preceded it. Where the First and Second Incursion ships had been featureless, dark, and deliberately or incidentally inscrutable, this ship showed every sign of having been designed to be recognized as a vessel — something made by minds, for minds. Windows caught the sun's light. Structural seams suggested modular construction. The ship's proportions, while not Human, had an evident internal logic that the tankers' cylinders had lacked. It was decelerating aggressively, shedding velocity at a rate that suggested it had no intention of closing on Earth. It was not, in any behavioral sense, doing what the prior incursion ships had done.

The transmission it was broadcasting, on a loop across seventeen frequencies, read as follows — annotated here by historians for context:

See Primary Source section for the full annotated text of Tertian's transmission.

Hellfire I's duty commander, after hearing the transmission played twice through, made the call that the exception clause in Ares Command's engagement protocols had been written for: he suspended the automated strike. The Attacking Eye clusters held. The Winchester guns continued tracking but did not fire. A hastily assembled

response team — communications specialists, two of Hellfire I's senior officers, and a xenolinguistics AI that had been maintained in standby for exactly this contingency and had never previously been used in a non-drill context — began preparing a reply.

The practical challenge was immediate: none of Hellfire I's drones were equipped with radio wave transmission capability. The station's own communications systems used QEC exclusively. Transmitting a response to a ship using radio — a deliberate, archaic choice on the visitor's part, as would become clear — required equipping a drone with hardware that existed in Hellfire I's stores but had never been installed in a field configuration. Three engineers spent forty-seven minutes doing the installation while the duty commander watched the clock and the transmission continued its loop.

The reply drone reached transmission range at 15:23 UTC. The response it carried was brief: *We have received your message. We are prepared to communicate. Please confirm your position and hold.*

The ship confirmed. It held.

The Being Called Tertian

The first visual contact came six hours into the exchange, after both parties had agreed on a video encoding standard derived from the television broadcast formats that the visitor had — as became clear — spent considerable time studying. The face that appeared on

Hellfire I's communications screen was not Human, but it was not incomprehensible either.



He was bipedal, bilaterally symmetrical, and roughly Human in scale. His skin was deep brown and had a leathery, slightly ridged quality — not rough in a way that suggested damage, but textured in a way that suggested a different evolutionary path toward a similar destination. His eyes were larger than Human eyes, dark, and possessed of an attentiveness that the Hellfire I crew described, in their accounts, as the most immediately striking thing about him — not alien in a way that made him difficult to read, but alien in a way that made it clear he was reading them with at least as much care as they were reading him. He wore clothing that was formal in a way that needed no translation. He had prepared for this meeting.

He gave his name as Tertian, and his English was excellent — not perfect, in the way that a native speaker's English is perfect, but excellent in the way that a very careful, very thorough student's English is excellent: precise, slightly formal, occasionally choosing a word that was technically correct but not quite the word a Human would have chosen. He had, he explained, spent time studying Earth's broadcast media. He did not specify how much time. The Hellfire I crew, reviewing the transmission logs afterward, noted that his vocabulary was primarily drawn from documentary and news media rather than entertainment — which told them something, they believed, about his priorities, and about what he had been trying to understand.

He was, in every observable respect, conducting himself as a diplomat. He answered questions directly. He volunteered information without being asked when he judged it relevant. When he did not know something, or when something was outside what he was authorized to discuss, he said so plainly rather than deflecting. He did not appear to be performing reassurance — he appeared to actually be reassuring, which is a different quality and considerably harder to manufacture.

Whether this impression was entirely accurate, and what it concealed as well as what it revealed, would be the subject of Human analysis for years afterward. Diplomats, in any civilization, are selected and trained for exactly this quality of presentation. That Tertian possessed it did not make him untrustworthy. It made him a diplomat.

What the League Was

The League of Affiliated Systems, as Tertian described it across several hours of initial conversation, was an association of approximately eighty intelligent species united by shared protocols for communication, trade, and the management of inter-species conflict. It was not, he was careful to clarify, a government — it had no legislature with authority over member species' internal affairs, no unified military, and no mechanism for compelling compliance with its protocols beyond the economic and social consequences of exclusion. It was better understood, he suggested, as a framework: a set of agreements that made coexistence and commerce possible across interstellar distances, maintained by the shared interest of its members in the stability that the framework provided.

For the Human diplomats listening to Tertian's description of the League in June 2064, the concept he was describing had no precise precedent in Earth's political history — and yet it was not entirely unfamiliar. Earth had, over its own history, developed various frameworks for managing relations between independent political entities: trade agreements, diplomatic protocols, international law, the United Nations. None of these had worked as well as their designers had hoped, partly because compliance was voluntary and partly because

the entities they governed were close enough to each other — in geography, in military reach, in economic interdependence — that the temptation to defect from cooperation was always present.

The League operated at interstellar scales, which changed the mathematics of cooperation in ways that Tertian's description made clear even before the full details of its structure were understood. Species separated by light-years could not threaten each other with the casual immediacy that proximity allowed. The costs of non-cooperation — exclusion from trade networks, loss of access to technologies available only through League channels — were diffuse and long-term rather than immediate and military. The League's framework persisted not because its members were prevented from defecting but because, for most members most of the time, the benefits of participation outweighed the costs.

This was, Human political scientists noted in the months following First Contact, a more sophisticated solution to the problem of cooperation among independent entities than Earth had ever managed to implement among its own nations. The irony that humanity learned this lesson from an alien diplomat, at a moment when EarthGov was itself only sixteen years old,

was not lost on the scholars who documented it.

Students who wish to understand the League in greater depth — its full membership, its internal politics, the franchise monopoly system that governed Galactic trade, and the cultural diversity of its member species — are directed to *Introduction to Galactic Culture*, where these subjects receive the detailed treatment they deserve.

The Proposal

Tertian's proposal, introduced cautiously across the second and third days of communication, was built on a problem the League had been struggling with for some time: the absence of a trusted neutral party capable of holding assets and maintaining a currency that no single member species could manipulate. Earth, he argued, was uniquely positioned to fill this role — not despite its isolation and its ferocious defensiveness, but because of them. A central bank only worked if it was trusted, and trust required independence. Earth was independent in the most literal possible sense: it sat at the end of a dead-end FTL corridor, it was capable of defending itself against anything the League's more aggressive members might send, and it had demonstrated, through the events of the prior two decades, that it was not easily intimidated or suborned.

These were, in the banking business, excellent qualifications.

The proposal was not, Tertian acknowledged, without risks for Earth. Serving as the Galactic Central Bank would mean maintaining a physical presence in the Alpha Centauri system — one step closer to the League — and accepting a degree of contact with League members that Earth's existing protocols were designed to prevent. It would mean holding assets whose nature and value Earth could not always independently verify. It would mean becoming, in a meaningful sense, part of a Galactic economy that Earth did not fully understand and could not fully control.

What it would also mean, he said quietly, near the end of the third day's session, was protection. Not the League's military protection — that, he was careful to clarify, was not on offer and was not his to offer. But the protection that came from being indispensable. A Galactic community that depended on Earth's banking services had an interest in Earth's survival that it had not previously had. That interest was not the same as an alliance. But it was not nothing.

The Hellfire I crew transmitted Tertian's proposal to EarthGov via QEC. EarthGov asked for time to consider. Tertian said he would wait.

He waited for eleven days. On the twelfth, EarthGov transmitted its first substantive response, and the negotiations that would produce the Tertian Arrangement began in earnest.

Vocabulary

League of Affiliated Systems — The interstellar association of approximately eighty intelligent species that governed trade, communication, and conflict management across a significant portion of the Galaxy at the time of First Contact. The League operated as a framework for cooperation rather than a unified government, maintained by the shared interest of its members in the stability it provided.

FTL (faster-than-light) — The general term for drive technology capable of moving a vessel between star systems in timeframes that conventional physics would consider impossible. FTL travel in the League system used naturally occurring spacetime corridors connecting specific points in different star systems. The physics underlying FTL travel were not understood by Human scientists at the time of First Contact.

Corridor (FTL) — A naturally occurring spacetime structure connecting two points in different star systems, enabling near-instantaneous transit between them. Corridors were fixed in location and could not be created or destroyed by any technology known to the League. Earth's system offered a single corridor, connecting it to the Alpha Centauri system.

Franchise monopoly — The system by which most Galactic trade was organized: individual species held exclusive rights to produce and trade specific technologies,

resources, or services. This system will be explored in detail in Chapter 18.

Videx — The name used within the League for the species responsible for the First, Second, and Third Incursions into Earth space. At the time of First Contact, the Videx were understood to be xenophobic, militarily capable, and deeply mysterious — a League member that participated minimally in Galactic society and had never been physically observed by any other species.

Hy'anx — A species within the League that served as its living memory and bureaucratic infrastructure, possessing a shared hive mind that gave any individual member access to the collective knowledge of the whole. The Hy'anx would play a significant role in the arrangements that followed First Contact. Further detail is available in *Introduction to Galactic Culture*.

Primary Source

The following is the full text of the transmission broadcast by Tertian's vessel upon entering the solar system on June 17, 2064, with annotations by Dr. Amara Osei-Mensah, Senior Historian, EarthGov Institute for Galactic Studies, 2138. The transmission is reproduced from the official First Contact Archive; the annotations are Dr. Osei-Mensah's own.

• • •

**TRANSMISSION: TERTIAN'S VESSEL, 17 JUNE 2064,
13:47 UTC [Annotated edition, 2138]**

People of Earth! [1] We mean you no harm. We are aware of the prior invasions into your territory, and we denounce them. [2] We wish to open a peaceful communication with you. Our ship is unarmed, and will come to a holding position opposite your planet. Please reply on this frequency if we may communicate with you. If we do not receive a reply from you in one hour, we will leave peacefully and never return. [3]

[1] "People of Earth" — The choice of this phrase as an opening is more deliberate than it may initially appear. Tertian later confirmed, in the extended negotiation sessions, that he had considered several alternative openings before settling on this one. "Government of Earth" was rejected because the League's intelligence on Earth's political structure was incomplete and he did not wish to assume a governmental interlocutor. "Citizens of Earth" was considered too formal. "People of Earth" was chosen for its inclusivity — it addressed the population as a whole, not its institutions — and for its echo of a phrase pattern common in the broadcast media he had studied. He was, from his first word, signaling familiarity with Human communication conventions. Whether this was reassuring or should have prompted more caution is a question worth considering.

[2] *"We denounce them" — This is the transmission's most consequential phrase, and the one that has received the most scholarly attention in the seventy-four years since it was spoken. Tertian did not say the prior incursions were accidents, or mistakes, or the actions of parties beyond the League's knowledge. He said the League was aware of them and denounced them. This is a meaningful distinction. Awareness implies that the League had information about the Videx's activities in Earth space — information it had not acted on in a way that prevented the Second Incursion of 2057. Why the League knew and did not intervene more decisively is a question that the subsequent negotiations addressed only partially, and that historians continue to examine.*

[3] *"We will leave peacefully and never return" — The one-hour deadline and the offer of permanent withdrawal if unanswered have been interpreted in two ways. The more charitable interpretation is that Tertian was offering Earth a genuine choice, demonstrating respect for Earth's autonomy by making contact entirely optional. The less charitable interpretation is that the deadline was a pressure tactic — creating urgency that would discourage careful deliberation — and that "never return" was designed to make non-response feel like a permanent foreclosure of opportunity rather than a prudent pause. Both interpretations are consistent with the text. Tertian's own later statements suggest the former was his intent. Diplomatic intent and diplomatic effect are not always the same thing.*

— *Dr. Amara Osei-Mensah, EarthGov Institute for Galactic Studies, 2138*

Dr. Osei-Mensah's annotated edition of the transmission was published as part of the First Contact Centennial Archive project and has been adopted as the standard scholarly text. Readers will recognize Dr. Osei-Mensah's name from the opening of this chapter: she is the same Amara Osei-Mensah who, as a seven-year-old in Nairobi in 2059, asked her teacher whether the wall was stronger than the ships. She has described her childhood experience of the defensive buildup as the formative influence on her decision to study the period professionally. Her annotations reflect a career spent taking both the Human and Galactic perspectives on First Contact seriously, and refusing to flatten the complexity of either.

Review and Discuss

1 The chapter describes the fourteen seconds between the transmission's decoding and the countdown's suspension as the moment that determined whether First Contact became first destruction. What does this near-miss reveal about the risks built into Earth's defensive protocols? What would have been lost — beyond Tertian's ship — if the countdown had reached zero?

2 The chapter describes Tertian as appearing "actually reassuring, which is a different quality and considerably harder to manufacture" than performed reassurance — and then immediately notes that diplomats are selected and trained for exactly this quality. How should Human negotiators have balanced these two observations? How do you evaluate someone's sincerity when you know they are professionally skilled at appearing sincere?

3 Dr. Osei-Mensah's annotation of "we denounce them" notes that the League was aware of the Videx's incursions but did not intervene more decisively. Based on what you know at this point in the course, what explanations might account for this? What additional information would help you evaluate those explanations?

4 The sidebar describes the League's framework for cooperation as more sophisticated than anything Earth had achieved among its own nations — maintained not by enforcement but by shared interest in the benefits of participation. Do you find this model convincing as a basis for interstellar civilization? What are its vulnerabilities?

5 The primary source note reveals that the annotator, Dr. Osei-Mensah, is the same child who appears at the opening of Chapter 12. What does this connection add to your reading of her annotations? Does knowing her personal history with this period change how you evaluate her scholarly perspective?

6 Tertian described Earth's isolation and defensiveness as qualifications for the banking role rather than obstacles to it. From the perspective of 2140, was he right? What does

Earth's subsequent history as Galactic Central Bank suggest about whether those qualities were as valuable as he argued?

Further Reading

Helmick, J. *Fourteen Seconds: The Decision That Made First Contact Possible*. Geneva: EarthGov Historical Press, 2091. A detailed account of the engagement countdown suspension decision, drawing on Hellfire I command records and the testimony of surviving crew members including Specialist Ferreira.

Holmes, L. *The Language He Chose: Linguistic Analysis of Tertian's Initial Transmission*. Edinburgh: Northern Academic Press, 2086. A close reading of the transmission's word choices, syntax, and rhetorical structure, arguing that every element of its construction was deliberate and reveals specific assumptions Tertian held about Human psychology.

Jones, D. *The Diplomat from Elsewhere: Tertian and the Art of First Contact*. London: Imperial Academic Press, 2094. A biographical and diplomatic history of Tertian, drawing on the full record of the First Contact negotiations and subsequent communications to construct the most complete portrait available of his methods and motivations.

Osei-Mensah, A. *Seventy-Four Years Later: The First Contact Archive and What It Tells Us*. Geneva: EarthGov Institute for Galactic Studies Press, 2138. Dr. Osei-Mensah's collected scholarly work on the First Contact

period, including the full annotated transmission and extended essays on the League's prior knowledge of the Incursions and what it implies.

Payette, B. *Dead End: The Strategic Implications of Earth's Single FTL Corridor*. Montreal: North American Academic Press, 2081. An analysis of how Earth's position at the terminus of a single FTL corridor shaped both its vulnerability and its eventual value as a Galactic banking center, examining the geographic logic of Tertian's proposal.

Siddaway, R. *What the League Knew: Intelligence, Awareness, and the Prior Incursions*. London: Imperial Academic Press, 2109. The most sustained scholarly examination of the question raised by Dr. Osei-Mensah's annotation — why the League was aware of the Videx's activities in Earth space and did not prevent the Second Incursion — drawing on diplomatic records from the First Contact negotiations and subsequent Hy'anx testimony.

14

The Tertian Arrangement (2070)

By the end of this chapter, you should be able to:

- Explain the terms of the Tertian Arrangement and describe how they were reached
- Describe Earth's role as Galactic Central Bank and the specific operational structure that role required
- Evaluate the risks Earth accepted and the protections it demanded, including the deposit box problem
- Analyze the significance of the Tertian Arrangement as a turning point in Human history — and why that significance was felt differently by different people at the time

The briefing documents that EarthGov's negotiating team carried into their first formal session with Tertian in August 2064 ran to more than four hundred pages. They covered everything the team's analysts had been able to assemble in the six weeks since First Contact: summaries of Tertian's statements during the initial Hellfire I exchanges, theoretical models of Galactic economic systems, legal analyses of the proposed banking arrangement under every framework of contract law that EarthGov's jurists could apply, risk assessments from seventeen different departments, and a forty-page psychological profile of Tertian himself that his lead author later described, with some embarrassment, as "a document that tells you a great deal about how Humans think about diplomacy and almost nothing useful about Tertian."

The team that carried those documents was eleven people. They worked in a secure facility on Hellfire I, communicating with Tertian via the relay drone that had been permanently stationed between the two vessels since the second day of contact, and communicating with EarthGov via QEC. They slept in shifts. They argued constantly, in the careful, exhausting way that people argue when they know that every word they send across the relay drone will be parsed by someone who has studied Human language with extraordinary care and has no reason to assume that imprecision is accidental.

What they were negotiating, across six years of sessions interrupted by recesses, revisions, and at least three moments when the entire arrangement appeared to have collapsed, was the most consequential agreement in the

history of their species. They knew this. The knowledge was not, by most accounts, helpful.

The Flashpoints

The broad outlines of Tertian's proposal had been clear from the first days of contact: Earth would serve as the Galactic Central Bank, conducting all operations in the Alpha Centauri system, with Earth itself remaining inviolate. The details of how this would actually work produced six years of negotiation that were, by any measure, genuinely difficult.

The first major flashpoint was physical currency. Tertian's original proposal assumed that Earth would manufacture the League's hard currency from raw materials delivered by League members. EarthGov's negotiators accepted the principle but pushed hard on the specifics: who would determine the alloy composition, who would set the minting specifications, and — most critically — who would audit the process to ensure that Earth was not secretly producing additional currency and introducing it into the Galactic economy. The concern was not hypothetical. A central bank that could secretly inflate the currency supply would have an extraordinary and destabilizing economic advantage over every other participant in the system. Tertian acknowledged the concern as legitimate. The solution they reached — a set of manufacturing specifications provided by the League and locked against modification, combined with a periodic audit mechanism conducted by Hy'anx representatives who would have access to Earth's

production records but not to Earth itself — took fourteen months to negotiate and required compromises on both sides that neither party found entirely satisfying.

The second flashpoint was the corridor itself. Earth's position at the terminus of a dead-end FTL corridor was, as Tertian had correctly identified, a significant security advantage — but it was a passive advantage, dependent on the corridor remaining the only practical means of access. EarthGov's analysts had raised the obvious question: what if the corridor was not the only means of access? The Second Incursion ship had arrived from above the elliptic plane, apparently using a drive system that operated outside the corridor network. What prevented a hostile party from using the same approach to bypass the corridor entirely and arrive directly in Earth space?

Tertian's answer was careful and, upon scrutiny, only partially reassuring. The drive system that the incursion ships had used — the warp drive, in Human terminology — was not a League technology and was not distributed through League channels. Its use was technically a violation of League protocols, because the League's management of interstellar travel depended on the corridor network's traceability. A ship that bypassed the corridors was, by definition, operating outside the system that the League could monitor and regulate. This was part of why the Videx's behavior had caused such concern within the League — not only because of what it had done to Earth, but because of what it implied about the League's ability to maintain order among its members.

This answer addressed the political question but not the security one. EarthGov pushed for something more concrete. What emerged, after several months of difficult negotiation, was a commitment from the League to provide Earth with technologies for detecting warp drive emergence events — the same telltale energy signature that OC-7741 had identified before the Second Incursion, but detectable at greater range and with more precision. The commitment was honored, though the technology transfer took longer to complete than the timeline specified in the final arrangement.

The third flashpoint, and in some respects the most fundamental, was the question of what happened if it all went wrong.

What Kept EarthGov Up at Night

The Tertian Arrangement was, at its core, a trust relationship between parties who had every reason not to trust each other. Earth was being asked to hold assets belonging to species it had never met, in containers it could not open, using technologies it did not fully understand, under conditions that made independent verification of almost anything extremely difficult. The League was being asked to entrust its most valuable assets to a species that had responded to its first two contacts with immediate military force and was, by any Galactic standard, extraordinarily heavily armed and deeply paranoid.

EarthGov's risk analysts had identified what they called the deposit box problem, and it kept appearing in every document the negotiating team produced. The arrangement called for League members to store items in standardized deposit boxes that would be shuttled between Alpha Centauri and Earth. These boxes would be scanned for active electronics, transmitters, and radioactive materials before entering Earth space. What they could not be scanned for — what no scanning technology available to Earth in 2064 or 2070 could reliably detect — was everything else. A sufficiently advanced civilization might be capable of constructing a device that passed every scan Earth could run and was nevertheless dangerous. It might be capable of introducing biological agents that Earth's instruments could not identify. It might be capable of encoding information in physical configurations of material that looked, to Earth's sensors, like inert matter.

EarthGov could not solve this problem. It could only manage it. The management approach that emerged from the negotiations was layered and imperfect: deposit boxes would never enter Earth's system, being held instead in storage locations within Alpha Centauri; scanning protocols would be as comprehensive as Earth's technology allowed and would be updated continuously as that technology improved; boxes from clients associated with the Videx or with other species of concern would be quarantined in separate facilities with additional safeguards. None of this eliminated the risk. It reduced it to a level that EarthGov's analysts assessed as acceptable — a phrase that appeared in the final risk assessment with a frequency that

suggested the analysts were trying to convince themselves as much as they were trying to convince their leadership.

What tipped the balance, in the end, was not the resolution of the deposit box problem but something more fundamental: the recognition that the alternative to accepting the risk was worse than the risk itself. Earth was not, at this point in its history, capable of ignoring the Galaxy. The Galaxy had found it twice, would find it again, and would continue to find it whether Earth participated in Galactic civilization or not. The question was not whether Earth would be part of that civilization but on what terms. The Tertian Arrangement offered terms that Earth had negotiated, that protected Earth's core interests, and that gave Earth something the prior decade of fear and isolation had not: a reason for other civilizations to want Earth to survive.

Among the more unusual provisions of the Tertian Arrangement was the League's offer to provide Earth with a triad of Hy'anx — three members of a species that served, throughout the League, as its institutional memory and administrative infrastructure.

The Hy'anx possessed what biologists and anthropologists would later describe as a distributed hive consciousness: each individual member of the species shared access to the same accumulated knowledge as every other member, updated continuously through

mechanisms that Human science has not fully characterized. A Hy'anx individual stationed in Alpha Centauri had access, in real time, to everything known by every Hy'anx stationed anywhere else in the League. This made them extraordinarily effective as bureaucrats, translators, and institutional repositories — they forgot nothing, confused nothing, and required no briefing on any subject that had ever been relevant to any Hy'anx anywhere.

Three was the minimum viable population for a Hy'anx group outside their home environment — the smallest number that could sustain the hive connection with sufficient stability for effective function. The triad assigned to Alpha Centauri would live on their own League-supplied habitat station, communicate with Human personnel by analog radio only (a Human insistence, to prevent any possibility of digital intrusion), and serve as the arrangement's living interface between Earth's banking operations and the League's membership.

The practical value of this arrangement was immediately apparent to EarthGov's negotiators: the Hy'anx would know, with the full authority of the League's institutional memory, exactly who each customer was, what their relationship with the League had been, and what the political context of their visit to Alpha Centauri implied. They would handle appointment scheduling,

currency exchange coordination, and the complex etiquette of managing clients from eighty different species without Human personnel having to acquire that knowledge independently. They were, in effect, the most sophisticated customer service infrastructure imaginable — and they were part of the deal.

Students who wish to understand the Hy'anx in greater depth — their biology, their cultural history, their role in League governance, and the philosophical questions their hive consciousness raises — are directed to *Introduction to Galactic Culture*, where these subjects receive the extended treatment they deserve.

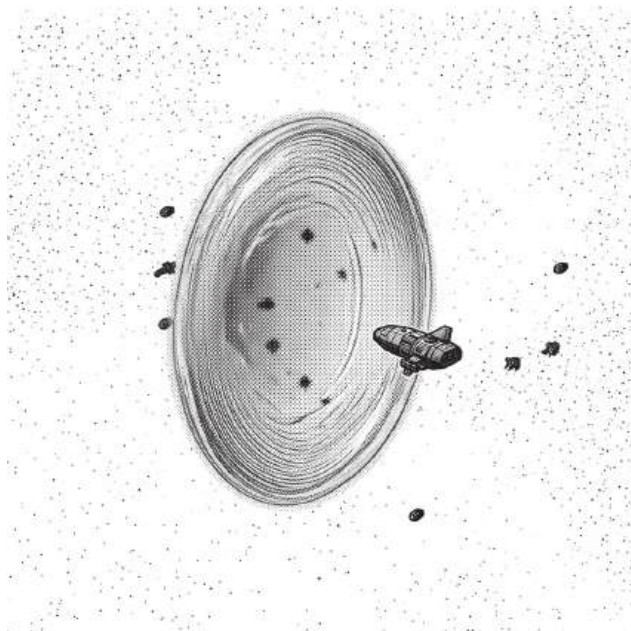
The Terms

The Tertian Arrangement, signed in March 2070 after nearly six years of negotiation, ran to two hundred and seventeen pages in its Human-language version and considerably more in the League's notation system, which encoded not just the text of agreements but the interpretive frameworks within which ambiguous terms were to be resolved. Its core provisions, stripped of their legal complexity, were as follows.

Earth would manufacture the League's hard currency from raw materials delivered to Alpha Centauri by League members, using specifications provided and periodically

audited by the League. Only Earth could produce new currency units. The League would maintain exchange rates between its various member currencies and the new hard currency standard. Earth would hold individual vaults for account holders and provide deposit box services, conducting all physical transactions through the Alpha Centauri system rather than in Earth space itself. Earth would be paid fees for its services, denominated in the hard currency it produced, and could use those fees to trade with the League for goods and technologies. Earth would otherwise not be subject to League law or League governance of any kind.

For its part, Earth demanded and received explicit written acknowledgment that Earth space — defined as the Sol system and any Human installations therein — was entirely off-limits to all League members under all circumstances, subject to immediate destruction of violating vessels without warning or process. The Alpha Centauri system would serve as the arrangement's operational zone, and Human defensive installations there would be maintained at whatever level Earth judged necessary without League consultation or approval. The FTL corridors would be managed according to protocols that Earth designed and enforced, with League input limited to scheduling and communication.



A New Era

The signing ceremony, if it can be called that, was not ceremonial. The final documents were exchanged via relay drone, with Tertian's vessel and Hellfire I maintaining their positions in space while legal representatives confirmed, via QEC, that the texts matched in all essential particulars. There was no hall, no table, no gathering of witnesses. The moment the arrangement became binding was a QEC timestamp: March 14, 2070, 09:23:17 UTC.

On Earth, the announcement was received with a mixture of emotions that defied simple characterization. There was excitement — genuine, widespread excitement of the kind that had not been common on Earth since before the First Incursion. There was fear — also genuine, also widespread, for all the reasons that the deposit box problem and the

corridor vulnerability and the six years of difficult negotiation had made visible. There was pride, for a species that had been afraid for thirty years and was still standing, still negotiating, still finding ways to be more than a target. And there was, underneath all of it, a quality of wonder that the years of vigilance had suppressed but not eliminated: the awareness that the universe was larger and stranger and more populated than anyone had imagined on the morning of September 14, 2037, and that humanity was, against all expectation, about to become part of it.

The people who had grown up under the Incursions' shadow — who had practiced drills and eaten hydroponic meals and read relocation letters on Tuesday mornings — were now being told that an alien diplomat had agreed, after six years of careful argument, that their species was trustworthy enough to hold the Galaxy's money. They had not expected to feel proud of this. Most of them, it turned out, did.

It was not the future anyone had planned for. It was considerably stranger and, in its way, considerably better. The work of building it had barely begun.

Vocabulary

Tertian Arrangement — The agreement signed in March 2070 between EarthGov and the League of Affiliated Systems, establishing Earth as the Galactic Central Bank. The Arrangement's core provisions governed currency manufacture, asset storage, fee structures, and the

operational protocols of the Alpha Centauri banking system, while preserving Earth's complete sovereignty over its home system.

Hard currency — Physical currency backed by tangible assets, as opposed to electronic or theoretical currency systems. The League's hard currency, manufactured by Earth from materials delivered by League members, provided a stable universal medium of exchange that no single League member could manipulate.

Vault (Galactic context) — In the context of the Tertian Arrangement, the term referred both to Earth's physical storage facilities for League hard currency and to the individual account holdings maintained on behalf of League members. The vaults were located in Earth space; the deposit box storage for League members' private assets was maintained in Alpha Centauri.

FTL corridor — See Chapter 13. In the context of Chapter 14, the corridor's significance lies in its role as the primary security mechanism of the Tertian Arrangement: all authorized League traffic entered the Alpha Centauri system through the corridor, making unauthorized transit identifiable and subject to immediate interdiction.

QEC clearance — The authorization protocol by which League vessels obtained permission to transit the FTL corridor into the Alpha Centauri system. Clearance was coordinated through the Hy'anx triad and required advance scheduling; vessels entering without clearance were subject to immediate destruction under the Arrangement's security provisions.

Interdiction protocol — The set of procedures governing Earth's response to unauthorized transit of the FTL corridors. Interdiction protocols included pre-positioned weapons systems at corridor exit points, mass obstacles that could be deployed to block corridor exits, and automated response systems capable of acting faster than human decision-making in the event of an unexpected arrival.

Primary Source

The following is an article published by The Global Record, Earth's most widely read QEC-distributed news service, on March 15, 2070 — the day after the Tertian Arrangement was signed. The* Global Record had been established in 2051 as part of EarthGov's communications infrastructure reform and operated with editorial independence under a charter that prohibited direct government control of its content. The article is reproduced from the Global Record digital archive.*

Earth Has Joined the Galaxy. Nobody Knows Quite How to Feel About That.

By Mireille Fontaine-Achebe, Senior Correspondent, The Global Record | March 15, 2070

Yesterday, at 09:23 in the morning UTC, a timestamp in a

QEC log became the most important sentence in the history of our species.

It didn't look like much. Legal representatives confirmed matching texts. A drone relayed a final confirmation. Somewhere in the Alpha Centauri system, an alien diplomat named Tertian received word that the agreement was binding, and presumably did whatever his species does when something significant has been concluded. On Earth, the World Executive read a prepared statement from the steps of the Geneva Administrative Complex. It was a good statement. Several people cried.

And then everyone went home, or back to work, or wherever they were going, because it was a Tuesday and Tuesday continues regardless of what the Galaxy has decided.

This correspondent has spent the past six years covering the Tertian negotiations, which means spending six years reading documents that required three lawyers to explain and attending briefings where the most important information was always the thing nobody said out loud. So let me try to say some of it now.

What Earth has agreed to is extraordinary and it is risky and it is, as best anyone can determine, the right thing. The extraordinary part is obvious: we are going to be the bank for eighty civilizations. Creatures we have never seen, from worlds we cannot visit, using technologies we do not understand, are going to trust us with their most valuable assets. In exchange, we will become, for the first time in our history, genuinely indispensable to something larger

than ourselves. That is remarkable. It deserves to be called remarkable.

The risky part is less discussed in the official announcements, so let us discuss it here. We do not know what will arrive in those deposit boxes. We do not know, with certainty, that every League member has good intentions toward us. We do not know that the arrangement will function as designed, because nothing this complex has ever been designed before and there is no precedent to consult. We have negotiated the best terms we could negotiate, and our negotiators are, by every account, exhausted and proud of themselves and quietly terrified in roughly equal measure. That seems like the correct response.

What we do know — what six years of careful, difficult, occasionally maddening negotiation has established — is that the being on the other side of that relay drone was dealing in good faith. We know that because our negotiators pushed on every term that mattered, and Tertian pushed back where he could and conceded where the concession was warranted, and the agreement that emerged reflects both parties' actual interests rather than one party's capitulation to the other. Good faith is not a guarantee. It is, however, the best foundation available for something that has never been attempted before.

Thirty-three years ago, something arrived in our sky and we shot it down. Twenty-nine years ago, something arrived again and we shot that down too. Yesterday, something arrived — in the form of a signed agreement transmitted

through a drone relay in the Alpha Centauri system — and we did not shoot it down. We signed it.

That is, by any measure, progress.

— *Mireille Fontaine-Achebe, The Global Record, March 15, 2070*

Fontaine-Achebe's article was read by an estimated 890 million people in the twenty-four hours following its publication, making it the most widely read piece of journalism in The Global Record's history to that point. Its characterization of the arrangement as "extraordinary and risky and, as best anyone can determine, the right thing" became something of an unofficial summary of the public mood in the months following the signing — quoted in speeches, in subsequent journalism, and, according to several accounts, in the private communications of members of the negotiating team themselves. Fontaine-Achebe continued to cover Galactic affairs for The Global Record for another thirty years, and her collected dispatches from the arrangement's first decade of operation remain among the most valuable journalistic primary sources for the period.

Review and Discuss

1 The chapter identifies three major flashpoints in the Tertian negotiations: the currency manufacturing and audit

question, the warp drive vulnerability, and the deposit box problem. For each one, explain what the underlying concern was and how it was addressed. Which do you think was the most serious, and why?

2 The deposit box problem could not be fully solved — only managed. EarthGov decided the residual risk was acceptable. Do you agree with that assessment? What factors would you weigh in making such a decision, and how would you decide when a risk has been reduced enough to be worth accepting?

3 Fontaine-Achebe writes that the negotiators were "exhausted and proud of themselves and quietly terrified in roughly equal measure." The chapter's closing passage describes a similar mixture of emotions in Earth's general population. Why do you think these emotions coexisted rather than one dominating? What does this suggest about how human beings process genuinely unprecedented situations?

4 The Hy'anx sidebar describes a species whose individual members share continuous access to the collective knowledge of the whole. What advantages does this provide for their role as the League's bureaucratic infrastructure? What concerns might Human negotiators have had about including such a species in the arrangement's operational structure?

5 The chapter argues that the alternative to accepting the arrangement's risks was worse than the risks themselves — that Earth could not, at this point, afford to remain isolated from Galactic civilization. Do you find this argument

persuasive? What would a genuine alternative have looked like, and what would it have cost?

6 Fontaine-Achebe ends her article by noting that in 2037 and 2057 Earth shot down what arrived in its sky, and in 2070 it signed what arrived instead. She calls this "progress." Do you agree? What does it mean for a civilization to make progress in its relationship with the unknown?

Further Reading

Fontaine-Achebe, M. *Thirty-Three Years and a Tuesday: Collected Dispatches from the First Contact Era*. Geneva: Global Record Press, 2101. The collected journalism of the* Global Record's* senior Galactic affairs correspondent, spanning the First Contact announcement through the early years of the Galactic Bank's operation. An invaluable journalistic record of how Earth's population processed the transition to Galactic involvement.

Hargreaves, S. *The Two Hundred and Seventeen Pages: A Legal History of the Tertian Arrangement*. London: Imperial Legal Press, 2089. A comprehensive legal analysis of the Tertian Arrangement's text, examining each major provision's negotiating history and the interpretive frameworks embedded in the League-notation version of the document.

Kowalczyk, P. *The Deposit Box Problem: Risk Assessment and Decision-Making Under Radical Uncertainty*. Warsaw: Central European Academic Press, 2097. A detailed study

of EarthGov's approach to the deposit box security challenge, using it as a case study in decision-making when risks cannot be fully characterized or eliminated.

Mbeki, T. *Six Years at the Table: A History of the Tertian Negotiations*. Johannesburg: Southern African University Press, 2083. The most comprehensive account of the negotiating process, drawing on declassified EarthGov records, the personal papers of several team members, and the Hy'anx archival records released under the post-war transparency agreements.

Osei-Kuffour, N. *What the Hy'anx Remembered: Their Role in the Tertian Arrangement and Its Aftermath*. Accra: West African Academic Press, 2111. A study of the Hy'anx triad's function in the Alpha Centauri operation, drawing on the triad's own records — provided to Human historians following the Galactic War — to reconstruct the arrangement's operation from the League's perspective.

Vasquez, C. *Indispensable: How the Tertian Arrangement Changed Earth's Strategic Position*. Buenos Aires: South American Academic Press, 2078. A strategic analysis of how the banking arrangement transformed Earth's relationship with the broader Galaxy, arguing that Tertian's insight about indispensability was more significant than any specific term of the arrangement itself.

15

A New Solar System: Alpha Centauri Operations (2078)

By the end of this chapter, you should be able to:

- Describe Earth's operational setup in the Alpha Centauri system and explain the strategic logic behind each element
- Explain the security protocols governing customer interactions, including the communications restrictions and transit procedures
- Identify the deliberate deceptions built into the operational system and analyze what they reveal about EarthGov's approach to security
- Describe the human experience of managing the Galactic Bank's day-to-day operations

The first thing most new personnel noticed about AC Command, upon arriving after the transit from Earth, was how ordinary it smelled.

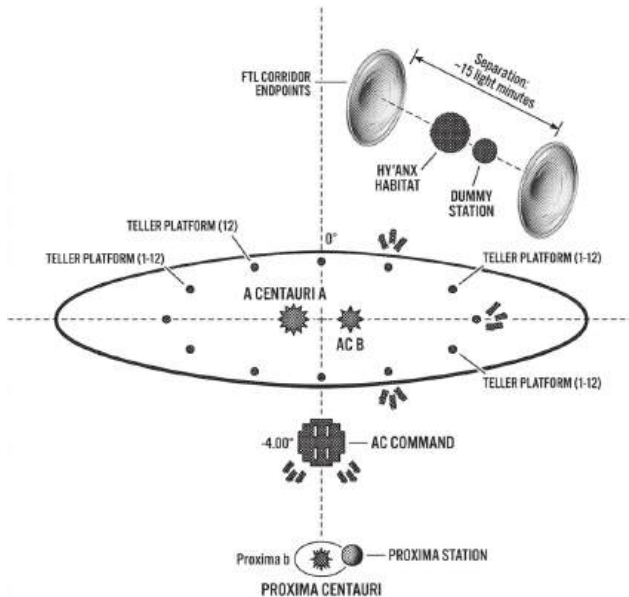
This was not, in retrospect, surprising. A space station is a closed environment, and closed environments develop characteristic smells: recycled air, hydroponics, machine oil, the particular human combination of bodies and food and work. AC Command smelled like Ares had smelled, and like Hellfire I had smelled, and like every other long-duration space installation humanity had built. It smelled like people living somewhere they had not been designed to live, making the best of it with considerable ingenuity and only moderate complaint.

What was surprising was how much comfort that ordinariness provided. Personnel arriving in the Alpha Centauri system for the first time — having crossed 4.37 light-years in a matter of seconds through a corridor that physics had not, until recently, been believed to permit — expected to feel the strangeness of where they were. The strangeness was real. The smell of the station was realer. Most people found, within a few days of arrival, that the operational routine of managing the Galaxy's central bank was not as different from any other demanding administrative posting as the circumstances suggested it should be. There were schedules to maintain and reports to file and equipment to calibrate and meals to eat. The alien ships outside were unusual. The coffee was the same.

This was, it turned out, exactly what EarthGov's planners had intended.

The Geography of the Operation

By 2078, Earth's presence in the Alpha Centauri system had been established and refined over eight years of operational experience into something that functioned, by most measures, with impressive efficiency. Understanding how it worked requires understanding where everything was — because the spatial relationships between the system's assets were not accidental. They were the product of careful strategic calculation, and every position served a purpose.



The system's two FTL corridor endpoints were its defining features — the fixed points in space through which all authorized traffic entered and exited. One endpoint connected to Earth's system; the other connected to a more centrally located League system through which most customer traffic arrived. The two endpoints were separated by approximately fifteen light minutes — close enough, by the standards of interstellar distances, that a ship exiting the League-bound corridor at standard transit velocity could reach the Earth-bound corridor in roughly an hour under gravitic drive. This proximity was one of EarthGov's primary security concerns, and much of the system's defensive architecture was organized around preventing exactly that transit from being completed by an unauthorized vessel.

AC Command itself — the renamed and upgraded Ares station — was positioned well below the system's plane of ecliptic, roughly beneath the gravitational center of the Alpha Centauri binary. This position placed it out of the direct line between the two corridor endpoints, making it a less obvious target for any vessel attempting a rapid transit through the system, while still maintaining effective QEC communication with every other asset in the operation. Its crew of approximately sixty managed the full range of the system's functions from this position, relying on QEC links and drone relay systems to coordinate activities that were, in some cases, several light-hours away.

The Hy'anx habitat occupied a position roughly equidistant between the two corridor endpoints — a placement that reflected its function as the interface between the League's

customer traffic and Earth's banking operation. From this central position, the Hy'anx triad could communicate with arriving customer vessels and with AC Command simultaneously, managing the appointment coordination and customer relations functions that the arrangement required without either party needing to have direct contact with the other.

Distributed across the main ecliptic plane, at intervals of several light-minutes, were twelve teller platforms — the counters across which the Galaxy's banking business was conducted. Each platform was equipped with standardized storage module docking facilities, allowing customer vessels to deposit or retrieve storage modules without any Human personnel approaching within communications range. The platforms were, in operational terms, entirely automated: no Human beings were ever stationed on them, and their functions were managed remotely from AC Command via QEC.

Proxima Station, orbiting Proxima Centauri b at the system's far edge, served as the operation's research and intelligence facility. The visual and sensor data gathered by the system's extensive drone networks was relayed here for analysis, giving Earth its closest sustained look at the League's member species and the spacecraft designs, behavioral patterns, and operational signatures that over time accumulated into a body of intelligence that proved invaluable.

The Defensive Architecture

Surrounding all of this, positioned with the careful redundancy that EarthGov's planners had learned to consider non-negotiable, was an arsenal whose scale would have seemed extraordinary to anyone who had not spent the preceding decades watching Earth build it. Four hundred large railguns were in-system, distributed with particular density around the two corridor endpoints. Thousands of Attacking Eye drones supplemented the railgun network, positioned in clusters that could be rapidly reoriented to any engagement geometry.

The corridor endpoints were the primary defensive focus. Any ship exiting the League-bound corridor emerged at a fixed point, at a fixed velocity and angle — a characteristic of FTL corridor physics that Earth had learned from Tertian and subsequently confirmed through observation. This predictability was, from a defensive standpoint, enormously useful: the exit point could be pre-targeted, and a vessel arriving without authorization faced weapons that were already aimed at precisely where it would appear. Dozens of railguns were positioned specifically to cover the League-bound endpoint's exit, and the Earth-bound endpoint's exit was similarly covered on both sides of the corridor — ensuring that any vessel attempting to reach Earth's system through the corridor without clearance would face devastation from both directions simultaneously.

A solid mass — an asteroid fragment of considerable size, pushed into position by gravitic drone tractors — sat in the

exit path of the Earth-bound corridor at all times except during authorized shuttle transits. Any ship attempting to force through the Earth-bound corridor would emerge directly into this obstacle before it could take any other action. This was not subtle. It was not intended to be.

The Deliberate Deceptions

A significant portion of AC Command's operational security rested not on weapons but on misdirection — a set of deliberate deceptions that EarthGov's planners had designed into the system from the beginning and maintained with considerable care.

The most important of these was the dummy station. Positioned near the Hy'anx habitat, roughly in the center of the normal customer traffic flow, was a structure that appeared from external observation to be AC Command: approximately the right size, the right configuration, emitting the right kinds of low-level radiation that an active command station would produce. All communications between AC Command and customer vessels were routed through this structure via QEC relay and then rebroadcast as radio waves, so that the apparent source of Human communications was the dummy station rather than the real one. The dummy station housed no crew. It contained QEC relay systems, a large complement of Attacking Eye drones held in standby, and a self-destruct mechanism capable of converting the entire structure into a cloud of high-velocity heavy-metal debris — a final defensive option that would be lethal to any vessel in the immediate vicinity.

The practical effect of this deception was to present any hostile party with a target that, if attacked, would destroy the attacker rather than the command operation. Whether any customer was ever aware of the deception is not known with certainty; the Hy'anx records suggest that several League members suspected the dummy station was not what it appeared to be, but that this suspicion was understood as a natural expression of Human caution and not regarded as deceptive in a way that violated the spirit of the arrangement.

The second major deception concerned the FTL shuttle transits. The public operational procedure was straightforward: customer deposits were collected from the teller platforms by automated drones, loaded into the Earth-bound shuttle, and transited to Earth at the end of each business day. What actually happened was different. The shuttle that transited to Earth carried only the raw materials for hard currency production. Customer storage modules — the deposit boxes — were offloaded before the shuttle's transit and moved to a storage location on the far side of the system, well away from normal customer traffic and completely absent from the operational records that League monitoring drones might observe. The shuttle that arrived in Earth's system contained nothing that any League member had touched.

This deception was, EarthGov's planners acknowledged in internal documents, a potential violation of the spirit of the Tertian Arrangement if not its letter. The arrangement required Earth to safeguard customer assets; it did not specify that those assets had to be transported to Earth

rather than stored in Alpha Centauri. EarthGov's legal analysis held that the letter of the arrangement was satisfied. Whether the League would have agreed, if fully informed, was a question that EarthGov's planners preferred not to test.

The third deception was subtler and in some respects the most fundamental: the entire premise that the dummy station was AC Command was maintained not just through the station's physical configuration but through the behavior of every Human personnel member in the system. Communications discipline was absolute. No transmission from the real AC Command was ever sent in a way that could be traced to its actual location. Personnel who transited between AC Command and Proxima Station did so via routes designed to obscure the departure point. The deception was not a feature added to the operation — it was woven into the operation's fabric, present in every procedure and every protocol, maintained as continuously and as carefully as the weapons systems that backed it up.

The Human Experience of the Operation

Managing the Galactic Bank from inside AC Command was, by most accounts, a stranger experience than it appeared from the outside — and from the outside, it already appeared extremely strange.

The strangeness was not primarily the alien ships. It was the distance at which everything happened. No Human being in the Alpha Centauri operation ever saw an alien customer directly, or spoke with one, or was in the same

structure as one. The closest any Human came to the customer traffic was the automated drone systems that approached the teller platforms after customer vessels had cleared the area. The aliens were real — their ships were visible on the sensor feeds, their deposits and withdrawals were processed through systems that Human engineers had built — but they were real in the way that a voice on a radio is real: present but not present, there but not there.

This distance was entirely intentional. It was also, for many personnel, the source of the posting's distinctive psychological texture. Staff at AC Command were simultaneously the front-line managers of the most consequential diplomatic and economic operation in Human history and people who never actually encountered the entities that operation served. The work was detailed, demanding, and relentless. It was also, in a specific and unusual sense, abstract: the consequences of what they did were vast, but the doing of it looked, from the inside, like monitoring screens and filing reports and calibrating drone systems and arguing about shift schedules.

The personnel who thrived on AC Command postings tended to share certain qualities: high tolerance for procedural complexity, comfort with sustained uncertainty about things they could not verify, and a particular kind of professional equanimity that allowed them to treat extraordinary circumstances as routine without losing their awareness of what the circumstances actually were. Finding people with all three qualities simultaneously was, by the accounts of AC Command's personnel officers, more difficult than finding people to operate the railguns.

Vocabulary

AC Command — The renamed and repositioned Ares station, serving as the primary command and control facility for Earth's operations in the Alpha Centauri system. AC Command was positioned below the system's ecliptic plane to reduce its visibility as a target, and communicated with all other system assets via QEC.

Teller platform — One of twelve automated platforms distributed across the Alpha Centauri system's ecliptic plane, serving as the physical interface between customer vessels and Earth's banking operation. Customer vessels deposited or retrieved storage modules at teller platforms; Human personnel never approached the platforms during customer interactions.

Storage module — The standardized container system through which League customers deposited assets with the Galactic Bank. Storage modules were designed to interface with both customer vessels' handling systems and Earth's automated drone collection systems, and were scanned for prohibited materials before being accepted into the banking operation.

FTL shuttle — One of two vessels capable of transiting the FTL corridor between Alpha Centauri and Earth's system, co-built by the League and retrofitted by Earth with additional gravitic drives to manage the transit velocity. Only one shuttle was normally present in either system at a time, with transits coordinated to maintain continuous coverage of both systems.

Proxima Station — Earth's research and intelligence facility, positioned in orbit around Proxima Centauri b at the Alpha Centauri system's far edge. Proxima Station received and analyzed sensor data from the system's drone networks, accumulating intelligence on League member species and their spacecraft over the course of the banking operation's years of activity.

Blockade protocol — The set of procedures by which Earth could rapidly suspend all traffic into the Alpha Centauri system, including the dispatch of a signal drone through the League-bound corridor to announce the interdiction and the deployment of mass obstacles and weapons systems to enforce it. Blockade protocols were designed to be executable within minutes of an authorization order from AC Command.

Primary Source

The following is an excerpt from the AC Command Personnel Orientation Guide, Third Edition, issued to all incoming personnel in 2077. The guide was produced by AC Command's administrative division and revised periodically to reflect operational experience. It is reproduced here from the EarthGov Military Historical Archive.**

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AC COMMAND PERSONNEL ORIENTATION GUIDE

Third Edition — 2077 Section 4: Operational Conduct and Communications Discipline

4.1 General Principles

Personnel assigned to AC Command are reminded that the operational security of this installation depends not on any single system or protocol, but on the consistent application of correct procedure by every member of the command, in every interaction, at all times. A single lapse in communications discipline is not merely an individual error. It is a potential compromise of the entire operational architecture that this command exists to maintain.

This section covers the communications and conduct requirements that apply to all personnel, regardless of role or seniority. These requirements are not suggestions. They are standing orders.

4.2 Communications Discipline

All external communications — meaning any transmission that may be detectable outside the immediate physical structure of AC Command — are to be routed through the Relay Node without exception. Personnel are not authorized to transmit directly from AC Command on any frequency or via any medium, including QEC, without explicit authorization from the Watch Commander. This applies to personal communications as well as operational ones. The QEC link to Earth for personal correspondence is available during designated off-duty periods; all such communications are routed through the Relay Node

automatically by the station's communications management system.

Personnel who observe any transmission originating directly from AC Command are required to report it immediately to the Watch Commander, regardless of whether the transmission appears to have been authorized.

4.3 Transit Conduct

Personnel transiting between AC Command and Proxima Station are required to follow the designated transit routes without deviation. Transit routes are updated on a fourteen-day cycle; current routes are posted in the navigation section of the operational bulletin. The purpose of these routes is to prevent any pattern of movement that could, over time, be used by an external observer to infer the location of AC Command. Personnel are reminded that the operative assumption is that the system is under continuous passive observation, and that behavioral patterns that appear individually innocuous may be significant in aggregate.

4.4 Customer Interaction Protocols

Personnel in roles that involve any awareness of customer visit schedules are reminded that this information is classified at the highest operational level and is not to be discussed outside of authorized operational contexts. This includes casual conversation during off-duty periods. The social environment of a long-duration posting creates informal communication patterns that can inadvertently

transmit sensitive information; personnel are expected to maintain appropriate discretion at all times.

Personnel should be aware that customer vessels are tracked continuously from corridor entry to corridor exit. Any deviation from the approved customer transit corridor — any approach to AC Command, Proxima Station, or any asset other than the assigned teller platform — is grounds for immediate defensive response. Personnel who observe customer vessels deviating from approved routes are required to report immediately to the Watch Commander without waiting to determine whether the deviation is intentional.

4.5 A Note on Routine

The requirements described in this section will, for most personnel, become second nature within the first weeks of a posting. This is intentional. Consistent procedure, maintained without conscious effort, is more reliable than procedure that requires active attention to sustain. Personnel are encouraged to reach the point where these protocols feel automatic — not because the reasoning behind them is unimportant, but because a thorough understanding of that reasoning, combined with automatic compliance, is the standard this command requires.

Welcome to AC Command.

— *Administrative Division, AC Command, 2077*

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The Personnel Orientation Guide's tone — bureaucratic, precise, and notable for the care with which it avoids explaining the full operational picture to new arrivals — is characteristic of AC Command's administrative culture during this period. Section 4.5's instruction to make security protocols "feel automatic" rather than consciously maintained reflects a sophisticated understanding of how procedural compliance degrades under the sustained pressure of a long-duration posting. The guide's Third Edition incorporated lessons from the first six years of operation, including several security reviews that had identified communications discipline as the most common point of failure in personnel behavior. Later editions, released following the events of 2096, added considerably more detailed protocols for responding to unauthorized arrivals.

Review and Discuss

1 The chapter identifies three deliberate deceptions built into AC Command's operations: the dummy station, the shuttle transit misdirection, and the comprehensive communications deception. For each one, explain what it was designed to achieve and evaluate whether it was justified given EarthGov's security concerns.

2 The chapter notes that EarthGov's legal analysis held that not transporting customer assets to Earth satisfied the letter of the Tertian Arrangement, while acknowledging

uncertainty about whether it satisfied its spirit. How do you evaluate this distinction? Is there a meaningful difference between technically complying with an agreement and genuinely honoring it?

3 The Personnel Orientation Guide instructs new arrivals to make security protocols "feel automatic" rather than consciously maintained. What does this approach reveal about EarthGov's understanding of human behavior under sustained operational pressure? Do you think this is a sound approach to security? What are its risks?

4 The chapter describes AC Command personnel as managing "the most consequential diplomatic and economic operation in Human history" from the inside, where it "looked like monitoring screens and filing reports." What does this gap between significance and experience suggest about the nature of important institutional work? Can you think of other examples where the people doing crucial work experience it primarily as routine?

5 The spatial layout of the Alpha Centauri operation — AC Command's hidden position, the dummy station's central placement, the teller platforms' distribution — reflects deliberate strategic calculation. Walk through the diagram and explain how each element's position serves a specific defensive or operational purpose.

6 The chapter notes that personnel who thrived at AC Command needed high tolerance for procedural complexity, comfort with sustained uncertainty, and professional equanimity. How do these qualities compare to the qualities that Ares and Hellfire I postings required,

as described in Chapter 8 and Chapter 12? What does the evolution of these requirements suggest about how Earth's relationship with the alien threat had changed by 2078?

Further Reading

Anderegg, V. *The Teller Platforms: Automation and Human Oversight in the Galactic Banking Operation*. Zurich: Swiss Technical Press, 2088. A technical history of the teller platform system and the automated drone networks that supported it, examining the engineering challenges of building reliable automated systems for an operation where human intervention was structurally excluded.

Castillo-Ferreira, M. *The Distance Between: Personal Accounts from the Early AC Command Postings*. Buenos Aires: South American Historical Press, 2095. A collection of oral histories from personnel who served in the Alpha Centauri system during the banking operation's first two decades, focusing on the psychological experience of managing consequential operations at an extreme remove from their human implications.

Johansson, E. *Deception as Security: The Strategic Logic of AC Command's Operational Architecture*. Stockholm: Nordic Military History Press, 2103. A strategic analysis of the deliberate deceptions built into AC Command's operations, examining each element's design rationale and evaluating their effectiveness over the course of the banking operation.

Nakamura, T. *Proxima Station: Earth's Window on the Galaxy*. Tokyo: Pacific Rim Academic Press, 2091. A history of Proxima Station's intelligence-gathering function, including the most comprehensive published account of what Earth learned about League member species through two decades of passive observation.

Osei, K. *The Letter and the Spirit: Legal Analysis of EarthGov's Operational Compliance with the Tertian Arrangement*. Accra: West African Academic Press, 2099. A rigorous legal history of the gap between the Tertian Arrangement's explicit terms and EarthGov's operational practices, including the shuttle transit deception and the deposit box storage arrangements.

Petrova, I. *Eight Years in the Making: The Construction of Earth's Alpha Centauri Presence, 2070–2078*. Moscow: Eurasian Historical Press, 2086. A history of the eight years between the Tertian Arrangement's signing and the fully operational state described in this chapter, covering the construction of AC Command, the establishment of the teller platform network, and the first years of customer operations.

16

Primary Source: "Business as Usual" (2096)

By the end of this chapter, you should be able to:

- Analyze a primary source memoir excerpt using the tools of historical inquiry
- Identify details in Commander Perry's account that reveal the operational realities of the Galactic Bank
- Recognize the ways in which a narrator's professional role, personal perspective, and retrospective position shape what a memoir includes and excludes
- Describe the moment when routine becomes crisis, and analyze how Perry's account of that moment differs from how a formal report might record the same events

A Note on This Chapter

Most chapters in this book tell you what happened and ask you to think about why it matters. This chapter works differently. Its centerpiece is a primary source — an extended excerpt from the memoir of Commander Skaught Perry, officer in charge of the Alpha Centauri system from 2095 to 2097. Rather than summarizing what Perry's account contains, this chapter asks you to read it yourself and develop your own interpretation of what it reveals.

Primary sources are the foundation of historical inquiry. They are also, inevitably, partial: every account reflects the perspective, knowledge, and purposes of the person who produced it. Reading a primary source well means reading it twice — once for what it says, and once for what that telling reveals about the teller. The questions at the end of this chapter are designed to help you do both.

Before reading, a few things to hold in mind. Commander Perry wrote *Far From Home* in 2108, twelve years after the events it describes. She was writing for a general audience, with full knowledge of how the events of 2096 eventually resolved — knowledge she did not have on the day itself. She was also, by any account, a skilled and careful officer whose professional training shaped not just what she did on that day but how she understood and later described it. These facts are not reasons to distrust her account. They are reasons to read it with attention.

The excerpt begins on an ordinary morning. Pay attention to that ordinariness. It is doing work.

The following is an excerpt from Far From Home, a memoir by Commander Skaught Perry, published in 2108 by Geneva: EarthGov Military Press. Commander Perry served as officer in charge of the Alpha Centauri system from 2095 to 2097. The excerpt covers the events of a day in late 2096 that she describes as beginning "as unremarkably as any other." It is reproduced here from the second edition of the memoir, which included minor corrections to the operational timeline.

After that first year, my apprenticeship to Commander Daedalus was considered complete. He departed for a well-earned rest in the Sol system, and I became the officer in charge of the Alpha Centauri operation. "Officer in charge" sounds more dramatic than it felt, most days. If my first year had taught me anything, it was that the operation ran on procedure, and procedure ran on people who had learned to trust it. My job, most of the time, was to be the person who authorized what the procedure had already decided. If something went wrong, I was the person who decided what came next. Nothing had gone wrong. I had been authorizing things and trusting the procedure for almost a year without incident.

That was about to change. But I didn't know that yet. What I knew, on that particular morning in late 2096, was that the day looked like any other.

I woke at 0545, which is twenty minutes before my alarm, which is something that happens to me in the last weeks of a posting when some part of my brain starts doing its own countdown. I showered, dressed, pulled up the overnight reports on my personal screen while I was still lacing my boots. Nothing unusual. The drone network had flagged two minor sensor anomalies in sectors seven and twelve during the night watch; both had been assessed as equipment drift and cleared by the duty AI without human intervention. Standard stuff. The kind of thing that fills half a page of the overnight log and doesn't warrant a second thought.

The courier drone popped out of the League-bound gate at precisely 0645, as it did every morning with a reliability that I had come to find genuinely comforting. There is something about a thing that happens exactly when it is supposed to happen, day after day, that gives you a kind of confidence in the underlying order of things. The drone transmitted its confirmations — that day's customer schedule, appointment details, ship profiles loaded into the defensive AI systems — and I reviewed them over my first coffee of the morning, which was the same coffee it always was: adequate, hot, and produced by a machine that the previous crew had named Genevieve for reasons nobody could now remember.

Twelve customers. A full day, by our standards, with two overlapping windows in the midmorning. I noted the overlap and confirmed that the Hy'anx had flagged both customers as low-conflict-probability pairs — species that the League's long institutional memory assessed as

unlikely to cause problems sharing the system simultaneously. We'd had a tricky situation six months earlier when a scheduling miscommunication had put two species with a long-standing territorial dispute in-system at the same time. Nothing had happened, but the tension on the bridge during the forty minutes it took to resolve had been, as my watch officer Lieutenant Chevers put it with characteristic understatement, "a bit much." I'd updated the scheduling protocols after that. Today's overlap had been vetted. I made a note to thank the Hy'anx for the thorough documentation.

The first ship arrived in-system exactly on time at 0715. I believe it was from the Gorrick system — I'd have to check the records to be certain, and I'm going on memory here, which at my age is not always reliable on details. What I remember with certainty is that they were regulars. The Hy'anx had described them as a manufacturing race, frequent depositors of physical currency collected from business dealings. Reliable, punctual, unremarkable in the best possible sense. Their ship entered on the correct bearing, reduced velocity on the correct schedule, and took up a holding position near Platform Seven with the kind of quiet competence that made you forget, for a moment, that you were watching an alien spacecraft operated by beings you had never seen and would never see.

The transaction proceeded exactly as designed. A shuttle detached from the main vessel, approached the platform, offloaded three storage modules — matching the manifest exactly, which Ensign Delacroix confirmed from the cargo monitoring station without being asked, because Delacroix

was the kind of person who confirmed things without being asked, which was why I'd put her on cargo — and collected three empty modules in exchange. The shuttle returned to the main vessel. The main vessel turned, accelerated toward the League-bound gate, and transited without incident. Three of our automated collection drones moved in to retrieve the storage modules and begin the transfer process.

Start to finish: twenty-eight minutes. I made a notation in the log. Genevieve produced a second coffee. I took it to my office to review the personnel evaluations that had been sitting in my queue for three days.

The evaluations were, as personnel evaluations generally are, a mixture of the straightforward and the delicate. I had two crew members whose performance had been strong enough to warrant early promotion recommendations, which was the pleasant kind of delicate. I had one crew member whose performance had not been strong enough to warrant continued assignment, which was the unpleasant kind. I was working on the language for the third evaluation — trying to find the formulation that was honest without being gratuitously discouraging, which is harder than it sounds — when Ensign Delacroix knocked on my office door and told me Lieutenant Chevers wanted me on the bridge for the 0900 status review.

The status review ran forty minutes. We went through the standard sequence: drone network status, defensive systems calibration, customer schedule update, Proxima Station intelligence summary, Hy'anx communications log.

Everything was green. The intelligence summary included sensor data on a new vessel type we hadn't logged before — a configuration that Proxima Station's analysts assessed as probably belonging to a League member we'd had limited contact with previously. I asked for an updated profile request to go to the Hy'anx. Chevers noted it. We moved on.

The next three customers processed without incident. A large depositor from a system I'll call the Dath cluster for shorthand — their actual designation is fourteen syllables in League notation and I've never managed it without notes — spent forty-five minutes at Platform Three offloading what appeared, from the mass readings, to be a substantial quantity of physical currency. Platform Three's scale logged 340 storage modules. Delacroix raised an eyebrow at that. I logged it as a record single-customer transaction and moved on. A smaller vessel — a withdrawal, not a deposit, one of perhaps two dozen we processed each week — spent twelve minutes at Platform Nine and departed. A third customer had a minor communications issue with the Hy'anx relay that delayed their arrival by twenty minutes; the Hy'anx resolved it before it required any human intervention.

At 1215, we entered the standard lunch hold. No arrivals were scheduled until 1330. I signed off on the two positive evaluations, set the third aside again, and had Ensign Delacroix pass along a standing order that I was taking lunch in my office and should not be disturbed unless the watch officer required a command decision.

I was eleven minutes into a sandwich when the station's alert klaxon went off.

I want to be precise about what happened next, because I have thought about it many times and I want to be accurate. I did not drop the sandwich and run. I set it down, stood up, and walked quickly to the bridge, which took approximately four seconds. I have thought about this because in certain retellings I have heard the story described as me dropping everything and sprinting, and that is not what happened. I walked quickly. The difference matters to me for reasons that are probably more personal than professional.

What I saw when I reached the bridge was Chevers already at full alert posture, every station active, and a contact profile on the main display that should not have been there.

"Unscheduled arrival through the League gate," Chevers said, the moment I crossed the threshold. "No deceleration. Impact trajectory with the relay station. Ship profile matches—" she paused for exactly the half-second that a person pauses when they are about to say something they have trained for and hoped never to say — "Videx cruiser configuration. High confidence."

I looked at the display. The contact was moving at full corridor exit velocity, which for an unauthorized arrival on that trajectory meant it would reach the dummy station in approximately ninety seconds. The defensive AI had already flagged it for engagement. The railguns had already powered. The countdown was running.

"Firing authorization," I said.

Chevers confirmed. I placed my hand on the authorization panel and gave the command.

Fifty-three railguns fired within the next four seconds. The contact was struck by the first rounds before it had traveled another ten kilometers. What followed was — I wrote in my log that evening that it was a "comprehensive engagement resulting in complete target neutralization," which is the correct military language, and which communicates nothing whatsoever about what it actually looked like on the display. I will not try to improve on that inadequacy here. Some things are what they are.

The courier drone was through the League gate within ninety seconds of the firing order, broadcasting the traffic interdiction. Drones were moving asteroids into the gate's exit path before the debris field from the contact had finished expanding. The QEC burst to Sol had gone out automatically the moment the alert triggered; Earth knew what was happening before the firing order was given.

Chevers looked at me from her station. I looked at the display. The debris field was still expanding. Delacroix was running the confirmation protocols without being asked, which I noted and appreciated, and will put in her evaluation when I finish it.

"Get me a full sensor sweep of that debris field," I said. "I want to know if anything came through that gate before the contact. I want to know if anything separated from the

contact before we fired. I want to know if there is anything in this system that should not be here."

"Already running, Commander," Delacroix said.

I nodded. I went back to my office. I picked up my sandwich. I looked at it for a moment and put it in the recycler, because somehow the appetite had not survived the intervening few minutes.

Then I sat down and began writing the after-action report, because that was what came next, and doing what comes next is how you get through the things that have just happened.

Commander Perry's account of the 2096 Videx attack is the most widely read first-person account of any event in the pre-Galactic War period. Its combination of procedural precision and controlled understatement — the careful note about walking rather than running, the sandwich in the recycler, the turn to the after-action report — has made it a standard text in EarthGov military training programs as well as a touchstone for historians of the period. What Perry's account does not address — what it cannot address, given that she did not know it at the time of writing — is why the Videx came, what they expected to find, and what the attack meant for the larger conflict that was already, though no one on AC Command that day knew it, well underway.

Vocabulary

After-action — A formal military report documenting the sequence of events during an operational incident, the decisions made, the outcomes achieved, and any lessons to be applied to future procedures. After-action reports are distinguished from memoirs by their formal structure, their near-contemporaneous production, and their institutional rather than personal audience.

QEC relay — As established in earlier chapters: a quantum-entangled communicator configured to extend network coverage by receiving and rebroadcasting signals. In AC Command's operational architecture, QEC relays routed all external communications through the dummy station, concealing AC Command's actual location.

Videx cruiser — The ship classification applied by AC Command's defensive AI systems to the 2096 unauthorized arrival, based on the contact's dimensional profile and configuration signature. This was the first confirmed Videx vessel to enter the Alpha Centauri system; its profile had been constructed from analysis of the First and Second Incursion ships and supplemented by intelligence provided by the Hy'anx.

Traffic interdiction — As established in Chapter 15: the suspension of all authorized traffic into a system, signaled by the dispatch of a courier drone through the League-bound corridor. The interdiction following the 2096 attack remained in effect for nearly a week while EarthGov

assessed the situation and confirmed that no additional contacts had entered the system.

Air-gapped terminal — A computing terminal with no connection to any external network, used to receive and display communications that arrive through analog rather than digital channels. AC Command used air-gapped terminals to display Hy'anx radio communications, preventing any possibility of malicious code being introduced through the communications channel.

Review and Discuss

1 Perry opens with a sustained account of an ordinary morning — coffee, personnel evaluations, routine customer transactions — before the alert arrives. Why do you think she structures the memoir this way? What does the ordinariness achieve that a more immediate account of the crisis would not?

2 Perry notes that she walked quickly to the bridge rather than running, and that "the difference matters to me for reasons that are probably more personal than professional." What do you think she meant? What does her decision to include this detail, and to flag its personal significance, reveal about her as a narrator?

3 Compare Perry's description of the firing decision — "I placed my hand on the authorization panel and gave the command" — with the Ares Command situation report from Chapter 11, which recorded the same kind of decision in clipped military notation. What does each document reveal

that the other does not? Which gives you a better understanding of what the decision actually was?

4 Perry writes that her log entry — "comprehensive engagement resulting in complete target neutralization" — "communicates nothing whatsoever about what it actually looked like on the display," and then declines to improve on it. Why do you think she makes this choice? What does it suggest about the relationship between official military language and personal experience?

5 The historian's commentary at the end of the excerpt notes that Perry's account "cannot address" why the Videx came or what the attack meant in the larger conflict. What are the limits of any first-person account as a historical source? What kinds of questions can memoirs answer well, and what kinds of questions require other types of evidence?

6 Perry ends the excerpt by picking up her sandwich, deciding against it, and beginning the after-action report — "because that was what came next, and doing what comes next is how you get through the things that have just happened." What does this ending reveal about Perry's character and professional ethos? Does it change how you read her account of the crisis itself?

Further Reading

Achebe, R. *Reading the Memoir: A Guide to Primary Source Analysis for Students of Galactic History*. Lagos: West African Academic Press, 2112. A methodological guide to

memoir analysis specifically designed for middle and secondary school students, using examples drawn from the First Contact and Galactic War periods.

Fontaine, S. *Far From Home and Its Readers: The Cultural Life of Commander Perry's Memoir*. Paris: European Cultural History Press, 2119. A study of how Perry's memoir has been read, taught, and interpreted across the century since its publication, examining what different generations of readers have found significant in the same text.

Mbeki, C. *What the Log Says: Official Records and Personal Accounts of the 2096 Attack Compared*. Johannesburg: Southern African University Press, 2104. A comparative analysis of the 2096 attack's documentary record, setting AC Command's official logs, the EarthGov incident report, the Hy'anx communications record, and Perry's memoir side by side to examine what each reveals and conceals.

Okafor, T. *The Officer in Charge: Command Decision-Making in Crisis Conditions*. Nairobi: Pan-African Military History Press, 2098. A study of command decision-making under crisis conditions, using the 2096 attack as one of its primary case studies and drawing on Perry's memoir alongside classified records released under EarthGov's transparency provisions.

Perry, S. *Far From Home: A Memoir*. Geneva: EarthGov Military Press, 2108. The complete memoir from which this chapter's excerpt is drawn. Students who have found Perry's voice and perspective engaging are encouraged to read the full text, which covers her entire career in the

Alpha Centauri operation and includes her account of the months following the attack.

Vasquez, N. *Ordinary Days: The Routine of the Galactic Bank Operation Before the 2096 Attack*. Buenos Aires: South American Historical Press, 2101. A social history of AC Command's day-to-day operations during the banking era, reconstructed from personnel records, official logs, and personal correspondence, providing the broader operational context within which Perry's account of a single day sits.

17

The Attack and Its Aftermath (2096–2098)

By the end of this chapter, you should be able to:

- Explain the League's response to the Third Incursion and analyze what it revealed about Galactic politics
- Describe what Humanity learned about the Videx from the Hy'anx briefings following the attack
- Explain the defensive and diplomatic changes Earth made in the attack's aftermath
- Identify the first signs of the Galactic Divide and explain how the Third Incursion contributed to its formation

For six days after the attack, the Alpha Centauri system was silent.

Not silent in the way that space is ordinarily silent — that vast, indifferent quiet that AC Command personnel had long since stopped registering consciously. Silent in a different way: deliberately, institutionally, operationally silent. The traffic interdiction was in effect. The League-bound corridor's exit path was occupied by asteroids pushed into position by gravitic drone tractors. No customer vessels entered the system. No courier drones arrived with the morning's appointment schedule. The teller platforms sat empty. Genevieve the coffee machine produced coffee on schedule, because coffee machines do not observe interdictions, but very little else proceeded according to the ordinary rhythms that Commander Perry's account had captured so precisely in the hours before everything changed.

The crew of AC Command spent those six days doing what military personnel do in the immediate aftermath of an incident: conducting reviews, updating protocols, cross-checking every sensor record from the minutes before the attack for anything that had been missed or misread, and waiting. The waiting was the hardest part. They had destroyed the contact efficiently and completely. They had sealed the system. They had notified Earth. They had done everything correctly. Now they waited to find out what correctly had meant.

The League's response, when it came, would answer some of their questions. Others it would open.

What the League Said

The first courier drone cleared for transit through the interdiction arrived on the seventh day, carrying the League's formal response to EarthGov's status update. The response was detailed, prompt by the standards of interstellar diplomacy, and in several respects more alarming than reassuring.

The League confirmed what its own records had already suggested: the Videx ship had not entered the corridor system through normal channels. It had arrived at the League-side corridor endpoint traveling well above transit velocity and significantly off the correct entry angle — behavior that, for any species using standard corridor technology, would have been catastrophically self-destructive. The ship had survived the entry, in degraded condition, because Videx vessel construction was apparently capable of tolerating inertial stresses that would have destroyed any other League member's ship outright. It had then destroyed two Farer logistics vessels that happened to be in the corridor approach zone, damaged a third, and forced its way through the gate before League defensive systems could respond.

This was disturbing on multiple levels, and EarthGov's analysts spent considerable time with it. The Videx had demonstrated a willingness to destroy League vessels belonging to a species with which they had no declared conflict. They had demonstrated a technical capability — surviving a badly misaligned corridor entry at excessive velocity — that suggested their ships were built to

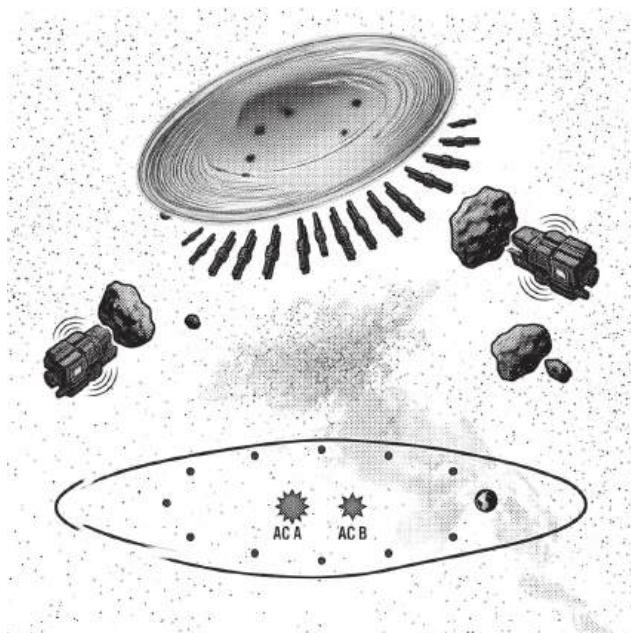
tolerances beyond anything the League had previously observed. And they had done all of this to reach Alpha Centauri, which implied that their purpose in coming was specific and considered rather than opportunistic.

The League's diplomatic response to the attack was, in the political sense, swift and substantial. Formal censure of the Videx was issued through the League's primary governance channel — a process that required consensus among the member species' representatives and that, the Hy'anx later noted, was achieved with unusual speed and near-unanimity. Diplomatic queries were dispatched to the Videx through every communications channel available. The League interdicted Videx vessels from its major transit corridors pending response.

The response from the Videx was silence. Not the silence of an institution conducting deliberations or a diplomatic corps preparing a careful reply. The silence of a party that had received the communications, understood them, and chosen not to answer.

This silence was itself a message, and nobody who analyzed it found it reassuring. A League member that attacked other League vessels, entered a protected system without authorization, and then declined to respond to formal diplomatic censure was not behaving like a member of any interstellar community that valued continued membership. Several League species began, in the weeks following the attack, to quietly reassess what they had assumed about the Videx's relationship to the broader Galactic order —

and what those assumptions had cost them in preparedness.



What the Hy'anx Knew

The most consequential intelligence to emerge from the aftermath of the attack came not from the League's official diplomatic response but from the Hy'anx triad stationed in Alpha Centauri — who, in the days following the attack, provided EarthGov with the most comprehensive account of the Videx that had ever been assembled in one place.

The Hy'anx knew, as they knew everything that any Hy'anx had ever known: comprehensively, precisely, and with the full weight of the League's institutional memory behind each detail. What they knew about the Videx was

simultaneously extensive and strangely incomplete — a profile with sharp edges and a hollow center, detailed on externalities and almost empty on essentials.

The Videx had been nominal League members for more than a century. In all that time, no League member had attested to actually seeing a Videx individual. They attended League convocations by remote communication only, and those communications were written rather than audio or visual. They held no franchise monopoly — one of the very few League members with no exclusive trade or service to offer — and participated in Galactic commerce only minimally, preferring to source whatever resources they needed from unoccupied systems that they marked with warning beacons and defended against intrusion. They had, on multiple occasions across the preceding century, provided military assistance to other League members dealing with internal security problems — assistance that was effective, and that was accepted without too many questions about what the Videx received in return.

What the Hy'anx had never been able to determine, and frankly acknowledged, was what the Videx fundamentally were. Not their biology — the Hy'anx had no biological data on them at all. Not their government — their governance structure, if they had one in any recognizable form, was entirely opaque. Not their home system — the location of the Videx homeworld was unknown to any League member, including the Hy'anx, who found this absence in their knowledge particularly disquieting. The Videx existed in the League's records as a set of behaviors and capabilities with no underlying substance to explain them.

The capabilities were the part that kept EarthGov's analysts occupied. The Hy'anx were able to detail the Videx's known weapons systems with considerable specificity, drawing on the records of the military operations in which the Videx had assisted other League members. The picture they painted was of a civilization with a weapons technology substantially more sophisticated than anything Earth had developed — and substantially more sophisticated than anything Earth had faced.

The weapons systems the Hy'anx described were not the blunt kinetic instruments that Earth had developed and deployed so effectively. They were more precise, more varied, and in several respects more terrifying.

The Videx were known to use powerful electromagnetic pulse weapons capable of disabling electronic systems across wide areas — including, according to the Hy'anx records, systems that had been specifically hardened against EMP. Their ships generated focused microwave beams capable of heating biological tissue to lethal temperatures from significant distances: a weapon that would pass through most hull materials without affecting them and deliver its effect only to living things inside. They used neutron bombardment for planetary-scale clearing operations — a weapon that destroyed

biological life while leaving physical structures intact. And they possessed coherent light weapons — lasers, though of an intensity and precision that made the word "laser" seem inadequate — which they deployed primarily in mining operations but which had never, to the Hy'anx's knowledge, been used offensively.

That last point was worth pausing on. The Videx possessed weapons they had never used in combat — weapons whose offensive applications were obvious and whose absence from any known engagement was either a matter of strategic restraint or, more uneasily, a matter of not yet having faced an opponent who required them.

Earth's analysts, reading the Hy'anx briefing in late 2096, did the obvious calculation. The three incursions into Earth space had involved ships that made no attempt to use any of these weapons. The First Incursion ships had simply absorbed conventional munitions damage until they stopped functioning. The Second Incursion ship had made no defensive or offensive response whatsoever before being destroyed. The Third — the attack on AC Command — had rammed through the corridor at full speed and had been destroyed before it could bring any weapons system to bear, if it had intended to.

Three separate appearances in Human space,

and not one use of weapons that the Hy'anx described as catastrophically effective.

From the vantage point of 2140, knowing how the conflict eventually developed and what the Videx ultimately revealed themselves to be, this restraint looks very different than it did in 1096. We know now that the Videx's apparent restraint was not restraint at all — it was something else, something that the subsequent chapters of this history will illuminate. But in 2096, the analysts who read the Hy'anx briefing had no way to know this. What they had was a list of weapons that hadn't been used, and no satisfying explanation for why. The most optimistic interpretation was that the Videx had been probing, not attacking — testing Earth's capabilities rather than bringing their own to bear. The least optimistic interpretation was that they were waiting for a reason.

Both interpretations kept people awake at night.

The Hardening

EarthGov's response to what the Hy'anx briefing revealed was swift, practical, and informed by a new and more concrete sense of what Earth was actually up against.

The immediate priority was electromagnetic hardening. If the Videx possessed EMP weapons capable of defeating

hardened systems, then every electronic system in Earth's defensive architecture — the targeting computers on the Winchester guns, the autonomous systems on the Attacking Eye drones, the QEC relays that connected everything — was a potential vulnerability. Lyborne Industries' engineering teams were redirected to develop improved shielding across the entire network, a project that would take several years to complete and that absorbed resources that had been allocated to Oculous Cloud expansion. It was, in the assessment of both EarthGov's military planners and its civilian engineers, the right trade-off. A defensive network that could be disabled by an opening EMP strike before it could respond was not, in any meaningful sense, a defensive network.

The second priority was the Eye5 drone program — a new generation of monitoring assets capable of detecting the telltale energy signature of an incoming corridor arrival with greater range and precision than existing systems allowed. Eye5 drones were equipped with Earth's most advanced AI systems to date and given local autonomous authority over collocated railguns and defensive assets. The key innovation was response time: the existing architecture required detection, QEC transmission to Hellfire I or AC Command, human authorization, and then weapons execution — a sequence that took, under optimal conditions, several seconds. The Eye5 architecture compressed this to milliseconds by giving the AI systems authority to act without waiting for human confirmation, provided their threat assessment met defined parameters. It was the most significant expansion of autonomous

weapons authority that EarthGov had ever sanctioned, and it generated substantial internal debate before being approved.

The human experience of these changes at AC Command was not primarily technical. It was atmospheric. The already-substantial weight of operating under permanent defensive alert grew heavier in the months following the attack, in ways that the personnel found difficult to articulate precisely but impossible to ignore. The new immediate-destruction protocols for any unauthorized arrival meant that every moment of every watch carried a quality of readiness that the previous protocols, with their human authorization windows, had slightly softened. Nothing had changed in what the crew was required to do. Something had changed in what it felt like to be ready to do it.

Lieutenant Chevers, who had been at her station when the contact was destroyed and who remained at AC Command for another full rotation after the attack, described it in a personal letter as "the difference between knowing that something could happen and understanding that something already has." The distinction was subjective and real simultaneously. The crew adapted, as crews do. The adaptation left marks.

The First Fractures

The political consequences of the attack extended well beyond Earth's system and well beyond the immediate diplomatic response. The Videx's willingness to destroy

League vessels and force a protected system revealed something about Galactic politics that had previously been speculative: that the League's framework for managing inter-species conflict was less robust than most of its members had assumed.

The League's formal censure of the Videx was real and swiftly achieved. What it lacked was teeth. The League had no unified military force to enforce its decisions, no mechanism for compelling compliance from a member that chose to ignore its censure, and no precedent for expelling a member that had committed acts of aggression against other members and their trade partners. Its tools were diplomatic and economic — the withdrawal of trade access, the exclusion from corridor traffic, the social and material costs of being outside the framework — and these tools assumed a party that valued continued membership more than whatever it was pursuing.

The evidence was accumulating that the Videx valued membership for what it provided in terms of access and information, and did not feel particularly bound by what membership required. Several League members began to articulate this conclusion out loud, in communications that the Hy'anx recorded and that EarthGov eventually received. Others, whose relationships with the Videx were more complicated — species that had hired Videx military assistance, species that had long-standing reasons for resenting the League's dominant members, species that saw the attack on Alpha Centauri as a consequence of Earth's own provocative over-armament — argued for patience, for further diplomatic engagement, for an

interpretation of the events that stopped short of treating the Videx as an enemy of the entire League.

These two camps would not remain informal for much longer. By 2098, the fractures that the Third Incursion had revealed were beginning to solidify into something more structured and more consequential. The Galactic Divide — the formal split between what would come to be called the Society and Independent factions — was still two years away from open expression. But its foundations were already being laid, in the communications and the calculations and the quiet, careful repositioning of species that had decided which side of a coming conflict they intended to be on.

Earth watched this process with a mixture of anxiety and helplessness that characterized much of its diplomatic position in this period. It was, increasingly, the center of a political storm it had not created and could not fully comprehend. What it could do — and did, with the thoroughness that decades of existential threat had made instinctive — was prepare.

Vocabulary

Electromagnetic pulse (EMP) — A burst of electromagnetic energy capable of disrupting or destroying electronic systems. The Hy'anx briefing confirmed that the Videx possessed EMP weapons capable of affecting hardened systems — a revelation that drove EarthGov's post-attack investment in improved electromagnetic shielding across its entire defensive network.

Coherent light weapon — A directed energy weapon using an intensely focused beam of light to deliver destructive force at a target. The Videx were known to use such weapons in mining operations; their potential offensive applications were considered by EarthGov analysts to be severe. The term "laser" was sometimes used informally, though the Videx weapons were understood to be substantially more powerful than anything Human engineering had produced under that name.

Radiation hardening — The process of designing or modifying electronic systems to resist damage from electromagnetic and particle radiation, including EMP. EarthGov's post-attack hardening program was the most extensive modification to its defensive network since the Second Incursion buildup, absorbing significant engineering resources over several years.

Galactic Divide — The developing political split within the League of Affiliated Systems between the Society faction — species that supported collective action against the Videx and maintained their commitment to League protocols — and the Independent faction — species that resisted anti-Videx measures and increasingly disregarded League trade monopolies. The Divide's origins lay in the political responses to the Third Incursion; its full development is covered in Chapter 18.

Society faction — The larger of the two groupings that emerged from the Galactic Divide, consisting of League member species that supported collective action against the Videx, maintained their commitment to League trade

protocols, and generally regarded Earth and its banking operation as a stabilizing element in Galactic society.

Independent faction — The smaller grouping that emerged from the Galactic Divide, consisting of League member species that resisted anti-Videx measures, increasingly ignored League trade monopolies, and tended to regard the attack on Alpha Centauri as a consequence of Earth's own provocative posture rather than unprovoked Videx aggression.

Primary Source

The following is an excerpt from a formal intelligence briefing delivered by the Hy'anx triad stationed in the Alpha Centauri system to AC Command on November 14, 2096 — approximately six weeks after the Third Incursion. The briefing was transmitted via the standard analog radio relay system and transcribed by AC Command personnel. It is reproduced here from the AC Command Communications Archive, released under EarthGov's post-war transparency provisions. A note on the document's style: Hy'anx formal communications followed conventions developed over centuries of League administrative practice, which prioritized precision and completeness over accessibility. The briefing has not been edited for style; its particular quality of voice is itself historically significant.

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HY'ANX TRIAD — ALPHA CENTAURI STATION FORMAL INTELLIGENCE BRIEFING: VIDEX PROFILE SUMMARY

Transmitted: 14 November 2096 | Received and transcribed: AC Command

This briefing responds to EarthGov's formal request of 23 October 2096 for a comprehensive summary of League knowledge regarding the species designated Videx. The Triad provides the following in the understanding that completeness is more useful than comfort, and that the absence of information is itself information.

On the Videx's history with the League:

The Videx have been nominal members of the League of Affiliated Systems for one hundred and fourteen standard League years, equivalent to approximately one hundred and nine Earth years. In this period, they have attended seven of eleven general convocations, in each case by written communication only. They have accepted military contracts with six League member species on eleven separate occasions. They have made formal objection through League channels on four occasions, each concerning what they characterized as encroachment on resource systems they considered within their operational territory. All four objections were upheld by the League's arbitration process. They have not initiated any diplomatic communication with any League member species, including the Triad, in the past thirty-one standard League years.

On the Videx's nature:

The Triad must report that the League's knowledge of the Videx's fundamental nature is incomplete in ways that have not been previously communicated with full transparency to EarthGov. We correct this omission now.

No League member has ever observed a Videx individual in biological form. No League member has ever been aboard a Videx vessel. No League member has ever visited or identified the location of the Videx homeworld. The Triad's records contain no physical description of a Videx individual derived from direct observation. Indirect inference — from the internal dimensions of maintenance tunnels documented in partial sensor sweeps of Videx vessels, from communication patterns, from the nature of the resource systems the Videx have claimed and defended — has produced hypotheses that the Triad does not consider sufficiently supported to transmit as findings.

We note, for the record, that the Triad finds this absence of fundamental knowledge more disquieting than any specific fact about Videx capabilities. A species that has been a League member for over a century and that remains, in essential respects, entirely unknown to every other member of that League has either maintained this concealment through extraordinary deliberate effort, or is so fundamentally different from all other League species that normal methods of observation and inference do not apply. The Triad considers both possibilities, and finds neither comfortable.

On the Videx's behavior toward Earth specifically:

The Triad has reviewed its full records of Videx behavior across one hundred and fourteen years of League membership. The three incursions into Earth space represent the only instances in which the Videx have acted against an inhabited system without a prior state of declared conflict, without a resource claim, and without any communication either before or after. This pattern is, in the Triad's assessment, unprecedented and unexplained. We have no hypothesis, supported by evidence, for why the Videx's behavior toward Earth has been qualitatively different from their behavior toward every other League member.

We consider this the most important finding this briefing contains. It is also the finding for which we can offer the least explanation.

On what should be expected next:

The Triad does not make predictions. We record what is known and note the boundaries of what is known. What is known is this: the Videx have now made three separate incursions into Earth space, each escalating in apparent intent. They have destroyed League vessels to reach you. They have not responded to League censure. They have not communicated their intentions to any party.

The Triad will continue to provide all relevant intelligence as it becomes available. We regret that this briefing contains as many questions as answers. We consider accuracy more important than reassurance.

— *Hy'anx Triad, Alpha Centauri Station, 14 November 2096*

. . .

The Hy'anx briefing's acknowledgment that the League had not previously communicated "with full transparency" the extent of its ignorance about the Videx was received at AC Command and at EarthGov with reactions that varied between relief at the honesty and considerable alarm at what the honesty revealed. The phrase "accuracy more important than reassurance" became something of a touchstone in EarthGov's subsequent internal discussions about intelligence assessment — quoted in planning documents and, on at least one occasion, in the preamble to a World Parliament debate about how much of what the Hy'anx knew should be communicated to Earth's general public. The full briefing, of which this excerpt covers approximately two-thirds, remains one of the most studied documents in the pre-Galactic War archive.

Review and Discuss

1 The League's formal response confirmed that the Videx ship had survived a corridor entry that would have destroyed any other League member's vessel. What does this technical detail reveal about the Videx's priorities and capabilities? What should EarthGov's analysts have concluded from it?

2 The Hy'anx briefing acknowledges that the League had not previously communicated "with full transparency" the

extent of its ignorance about the Videx. How do you evaluate this admission? Does it change how you think about the League as a partner for Earth? What does it suggest about the limits of even the most comprehensive institutional knowledge?

3 The sidebar notes that from the vantage point of 2140, the Videx's restraint in not using their most powerful weapons looks "very different" than it did in 2096. Based on what you know at this point in the course, what explanations for this restraint seem most plausible? Make a note of your current thinking — later chapters will give you additional information that bears on this question.

4 Lieutenant Chevers described the post-attack atmosphere at AC Command as "the difference between knowing that something could happen and understanding that something already has." What psychological distinction is she drawing? Can you think of examples from your own experience where knowledge became understanding in a similar way?

5 The chapter describes the early formation of the Society and Independent factions as a process of species "quietly repositioning" themselves based on which side of a coming conflict they intended to support. What factors do you think would have driven different species toward different choices? What does this suggest about how political divisions form in advance of open conflict?

6 The Hy'anx briefing ends by saying "the Triad does not make predictions." Why do you think the Hy'anx operated on this principle? What are the advantages and

disadvantages of an intelligence source that reports only what is known without speculating about what comes next?

Further Reading

Achebe, P. *The Hy'anx Briefings: A Complete Edition*. Lagos: West African Academic Press, 2108. The full collection of Hy'anx intelligence briefings transmitted to AC Command between 2078 and 2096, released under post-war transparency provisions and here compiled with scholarly introduction and annotation.

Castillo, R. *What the League Didn't Know: Intelligence Gaps and Their Consequences in the Pre-War Period*. Buenos Aires: South American Academic Press, 2103. A study of the intelligence failures — including the League's century-long ignorance of the Videx's fundamental nature — that left both Earth and the League unprepared for the Galactic War.

Fontaine, P. *The Fracture Lines: Origins of the Galactic Divide, 2096–2100*. Paris: European Historical Press, 2097. The most detailed account of the political developments within the League in the four years between the Third Incursion and the Galactic Divide's formal expression, drawing on diplomatic communications released under post-war transparency provisions.

Mbeki, S. *Hardening: The Engineering Response to the Videx Threat, 2096–2107*. Johannesburg: Southern African Technical Press, 2089. A technical history of EarthGov's post-attack electromagnetic hardening program, covering

both the engineering innovations it produced and the resource trade-offs it required.

Okafor, N. *Eye5: The Autonomous Weapons Debate and Its Resolution*. Nairobi: Pan-African Academic Press, 2094. A history of the internal EarthGov debate over the Eye5 drone program's autonomous engagement authority, examining the arguments made on both sides and the political process by which the expansion of autonomous weapons authority was ultimately sanctioned.

Petrova, M. *Silence as Message: The Videx's Non-Response to League Censure and What It Implied*. Moscow: Eurasian Academic Press, 2101. An analysis of the Videx's diplomatic silence following the Third Incursion, arguing that the silence itself constituted a meaningful communication and examining what contemporaneous analysts made of it versus what subsequent history revealed it to have meant.

18

The Galactic Divide (2098–2107)

By the end of this chapter, you should be able to:

- Explain the franchise monopoly system that governed Galactic trade and analyze its strengths and fragilities
- Describe how the Galactic Divide formed and identify the key factors that drove species toward the Society and Independent factions
- Evaluate Humanity's ambiguous position within the Divide
- Analyze the significance of the Videx's entry into open warfare and what it revealed about the nature of the conflict

In the autumn of 2099, a woman named Priya Subramaniam sat in a community center in Chennai, Administrative District India, and watched a public screen showing news coverage of something called the Galactic Divide. She was fifty-three years old. She had grown up under EarthGov, taken her aptitude assessment at nine, trained as a water systems engineer, raised two children in the housing unit she had been assigned when her career track was confirmed. She had lived, in other words, exactly the kind of life that the EarthGov of the 2050s had designed for its citizens: purposeful, materially comfortable, and oriented almost entirely toward the practical concerns of the planet she lived on.

The Galactic Divide was not a practical concern of the planet she lived on. It was, as far as she could determine from the news coverage, a political argument between alien species she had never heard of, about trade rules she did not understand, in systems whose names she could not pronounce. It had something to do with the Videx, who she knew about — everyone knew about the Incursions, had grown up knowing about them — and something to do with the banking operation in Alpha Centauri, which she also knew about in the vague way that most Earth citizens knew about it: as a fact of EarthGov policy, important but remote, like the atmospheric moderators or the orbital defensive network.

She watched the coverage for twenty minutes. Then she turned to the person sitting next to her and said: "Is this going to affect us?"

The person sitting next to her did not know. Neither did the news presenter, though the presenter was more practiced at not showing it. The honest answer, which no one on Earth had yet fully articulated, was: almost certainly yes, in ways we do not yet understand.

That answer would become considerably clearer in the months that followed.

The Economics of the Galaxy

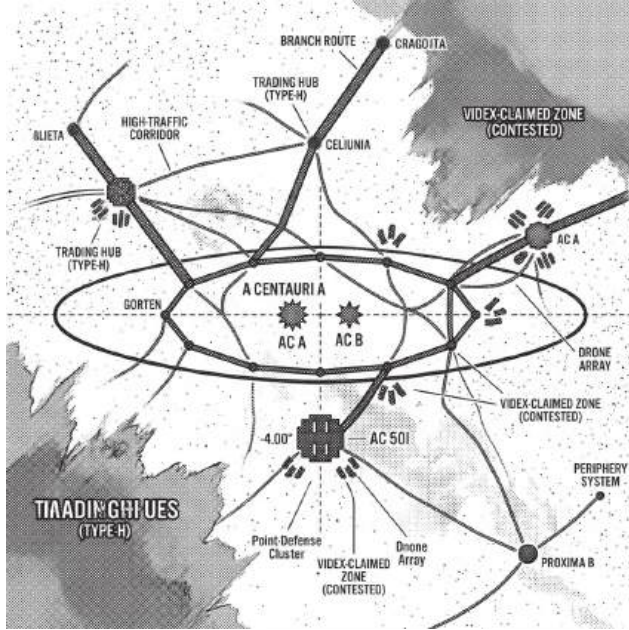
To understand why the Galactic Divide formed and why it mattered, it is necessary to understand something about how the Galactic economy worked — and why it was both more stable and more fragile than it appeared.

The dominant organizing principle of Galactic commerce was the franchise monopoly system. Under this system, individual League member species held exclusive rights — granted by the League's governing bodies and renewable subject to ongoing compliance with League protocols — to produce and trade specific technologies, resources, or services throughout the Galactic community. No other species could legally produce or trade in a monopoly item without the franchise holder's license. In exchange for this exclusive right, the franchise holder was expected to meet demand reliably, maintain quality standards, and not abuse its pricing power beyond what the League's arbitration bodies considered reasonable.

The system had evolved over centuries, and it had a certain logic that rewarded stability. If you knew that the Farer race

held the monopoly on large-scale space stations, you knew where to go when you needed one. If you knew that the Dor'kath held the monopoly on heavy metal processing, you knew who to call when your mining operation produced ore that needed refining. The predictability reduced transaction costs across a Galactic economy spanning dozens of species and hundreds of star systems. It also created a dense web of interdependencies that made open conflict between species economically costly in ways that supplemented the League's more formal mechanisms for managing disagreements.

The fragility of the system was the mirror image of its strength. Because monopolies were exclusive, any disruption to a franchise holder's operations had cascading effects throughout the economy. A franchise holder damaged by conflict, natural disaster, or internal political instability could not be easily replaced — no other species had the infrastructure, the expertise, or the League's legal authorization to step in. The interdependencies that made defection from the system costly also meant that the system itself could not absorb shocks without distributing their effects broadly.



The Monopoly System in Practice

The Celcath race — holders of the League's monopoly on long-range sensor technology — discovered this interdependency in uncomfortable detail when they identified a habitable world rich in heavy metal deposits in a previously unsurveyed system. The discovery was their franchise in action: their sensors had found something valuable. Exploiting it required the Dor'kath, who held the monopoly on heavy metal trade and processing. The Dor'kath required, in turn, the K'tivian, who held the monopoly on the specific category of extraction equipment suited to the new world's geological conditions. The K'tivian were efficient and effective, and comprehensively indifferent to the Celcath's concerns about their new world's ecosystem. What emerged, over several standard

years of increasingly acrimonious three-way negotiation, was a world being strip-mined by equipment its discoverer had not chosen, operated by a species its discoverer could not control, under terms its discoverer had only marginal ability to influence — all of it entirely legal under the League's monopoly framework.

The Celcath situation was not unique. Similar dynamics played out across dozens of interactions in the decades preceding the Galactic Divide. The Mentivar race, holders of a monopoly on atmospheric processing equipment, found that their services were so comprehensively needed by developing League worlds that they had effectively become indispensable intermediaries in every terraforming project anywhere in the League — giving them an informal leverage over planetary development decisions that the franchise system had not explicitly authorized but could not easily constrain. The Gorricks manufacturing conglomerates — whose ships AC Command personnel would have recognized as familiar, reliable customers at the teller platforms — held a web of interlocking manufacturing monopolies that made them simultaneously the League's most productive economic actor and the species most resentful of being required to share any element of their production chain with monopoly holders in adjacent sectors.

These tensions were not secrets. They were the ordinary friction of an economic system that had been running for centuries without fundamental revision. What the Third Incursion and its aftermath did was transform ordinary friction into something more structurally dangerous.

The Divide Begins

The Videx occupied a distinctive position in this economic landscape. Unlike virtually every other League member, they held no franchise monopoly. They participated in Galactic commerce minimally and selectively, sourcing what they needed from unoccupied systems they claimed and defended, and accepting military contracts on a non-exclusive basis when they chose to. They were, in economic terms, almost entirely independent of the franchise system — which meant that the system's primary mechanism for discouraging defection from League norms had essentially no leverage over them.

This independence had been tolerated, even occasionally admired, by species that found the franchise system's interdependencies constraining. The Cordonian race, whose iron and ore mining operations were subject to the constant oversight of whichever monopoly holders had claims over adjacent activities, had hired Videx military assistance to maintain a protective blockade around one of their mining planets without calling in the League species that held the relevant security franchise. It was a technical violation of League protocols. The Videx had accepted the contract. Nothing had been done about it by the League's arbitration bodies, partly because the Videx were not easily pressured and partly because the Cordonians' grievance about franchise system overreach was widely shared.

After the Third Incursion — after the Videx destroyed League vessels to reach Alpha Centauri and declined to respond to formal censure — the question of what to do

about the Videx became unavoidable. And the answers that different species gave to that question were shaped, profoundly, by their existing positions within and attitudes toward the franchise system.

Species that had benefited from the system — franchise holders, species with stable and favorable positions in the existing web of interdependencies, older League members for whom the framework's stability represented accumulated security — tended toward the view that the Videx's behavior was an existential threat to the order that had allowed Galactic civilization to function. They favored strong collective action: sanctions, exclusion from corridor access, military deterrence if necessary. They became, as their position hardened, what history calls the Society faction — committed to the League's collective framework and to Earth's protection as a component of that framework's stability.

Species that had chafed under the system — newer members with less favorable franchise positions, races like the Cordonians who had found Videx independence attractive precisely because it offered an alternative to franchise system constraints, smaller species that had concluded the system served established powers more than developing ones — tended toward a different view. The attack on Alpha Centauri was, in their framing, a consequence of Earth's provocative armament and the League's willingness to let a non-member species operate the Galactic Bank. They did not necessarily support the Videx's actions, but they resisted characterizing those actions as a threat to Galactic civilization that required

collective military response. They became the Independent faction — increasingly willing to ignore League monopoly protocols, increasingly resentful of what they saw as the Society faction's attempt to use the Videx crisis to consolidate existing power arrangements.

Humanity's Ambiguous Position

Earth watched this process with the particular discomfort of a party that is deeply affected by a conflict it has no formal standing to influence.

Legally, EarthGov was not a League member. It had negotiated the Tertian Arrangement specifically to avoid League membership, with its attendant obligations and constraints. This meant that Earth had no vote in League deliberations, no seat at the arbitration bodies, no formal mechanism for advocating its interests within the political process that was now determining whether those interests would be protected.

Practically, Earth's interests were entirely aligned with the Society faction. The Society faction supported the Galactic Bank and Earth's continued operation of it. The Independent faction was increasingly skeptical of the Bank's neutrality and increasingly inclined to view its interruption as acceptable collateral damage in the broader conflict with what they saw as the League establishment. Earth's banking fees — and more importantly, the hard currency reserves that constituted Earth's primary financial resource for acquiring League technologies — depended on the Bank remaining operational and respected.

This alignment without membership created a diplomatic position that EarthGov's foreign affairs specialists found genuinely novel and genuinely difficult. Earth could communicate with League members through the Hy'anx and through the banking relationship, but it could not negotiate, vote, or formally advocate. It was, in the most precise sense, a stakeholder without standing. The Society faction understood Earth's interests and, for the most part, factored them into its deliberations. But "for the most part" is not the same as "reliably," and Earth had no recourse when Society faction decisions did not account for Earth's concerns.

For most of the banking era — the two decades between the Tertian Arrangement's signing and the Third Incursion — Earth's civilian population had experienced Galactic involvement primarily as a source of quiet prosperity. The banking fees funded technologies and material improvements that raised living standards visibly and continuously. The aptitude system was being gradually reformed. The worst of the relocation policy's rigidities were softening. The mood in Earth's cities, as Chapter 10 described, had shifted from the anxious austerity of the EarthGov founding years toward something more relaxed and more expansive.

The Third Incursion had interrupted this mood, sharply and suddenly. The Galactic Divide

deepened the interruption into something more sustained.

By 2099, when Priya Subramaniam watched the news coverage in Chennai, the Galactic Divide was a topic that Earth's QEC news services covered daily and that most of Earth's population followed with the kind of attention previously reserved for matters of immediate planetary concern. The reason was not hard to find: the banking operation's interruptions during the post-attack interdiction had affected the currency flows that funded EarthGov's technology acquisition programs, and EarthGov had made the connection between Galactic political stability and Earth's material wellbeing explicitly clear in its public communications. People understood, in a way they had not previously needed to, that the Galactic economy was not a remote abstraction but the foundation of their daily comfort.

This understanding produced a revival of the fear that the banking era had gradually suppressed — not the clean, focused fear of another Incursion, but something more diffuse and harder to defend against: the fear of an unstable and fracturing Galaxy in which Earth's carefully maintained position might not hold. The civil defense drills and emergency protocols of the 2050s had given people

something to do with their fear. This new fear offered no equivalent outlet.

EarthGov's communications apparatus, well-practiced by this point in managing public anxiety about existential threats, worked to frame the Divide as a manageable diplomatic challenge rather than an existential crisis. The framing was not entirely dishonest — in 2099, the Divide had not yet produced open warfare — but it was incomplete, and a population that had lived through the Night of Horror and the post-Second Incursion militarization was not without experience in reading the gap between what EarthGov said and what it meant.

Open Warfare

In December 2100, the period of diplomatic maneuvering and factional positioning ended.

Two Farer space stations — enormous commercial hubs, each housing tens of thousands of inhabitants drawn from dozens of species engaged in trade and transit — were destroyed by Videx warships without warning or communication. The attacks were simultaneous, coordinated across systems that were light-years apart, executed with a precision that spoke to long preparation. Within forty-eight hours, Videx vessels had launched bombardment attacks on two inhabited worlds belonging to Society faction species, targeting the industrial

infrastructure that those worlds used to produce military equipment.

The news reached Earth via the Hy'anx communications relay approximately seventy-two hours after the attacks occurred. AC Command transmitted the intelligence summary to EarthGov via QEC within minutes of receiving it. The World Executive was briefed at 03:14 in the morning, Geneva time, by a staff member who had been awake for nineteen hours and who delivered the summary with the careful, flat precision of a person who had decided that flat precision was the only available alternative to something considerably less composed.

What the attacks demonstrated was not, in retrospect, surprising given what the Hy'anx briefing had established about Videx capabilities. But capability known and capability deployed are different things, and the deployment was its own kind of shock. The Farer stations had been considered neutral infrastructure — commercial hubs whose function served Independent and Society species alike, whose destruction benefited no obvious economic or strategic interest. Their targeting said something about the Videx's intentions that the destruction of the stations alone could not fully articulate. It said that the Videx were not making a calculated move in a political contest. They were ending the contest.

The Independent faction's response to the attacks was one of the more remarkable political reversals in Galactic history. Species that had, days earlier, been arguing that the League's response to the Third Incursion was

disproportionate and that the Videx deserved further diplomatic engagement now found themselves unable to maintain that position in the face of the Farer station debris fields and the bombardment footage from the two Society worlds. Several Independent faction species moved toward neutrality. A smaller number moved all the way to the Society position. A hard core — species whose resentment of the League establishment was deep enough to survive even this — remained Independent, and would remain so through the conflict that followed.

The Galactic Divide had not ended. But it had been transformed. What had been a political argument about trade monopolies and diplomatic responses had become something starker: a war, being fought across star systems, with civilian populations caught in its path, and Earth — unarmed in the Galactic sense, positioned at the end of its dead-end corridor, watching the intelligence summaries arrive with growing urgency — at its center.

Vocabulary

Franchise monopoly — The system by which individual League member species held exclusive rights to produce and trade specific technologies, resources, or services throughout the Galactic community. Franchise monopolies were granted by the League's governing bodies and provided both the organizing framework for Galactic commerce and the primary economic mechanism discouraging defection from League norms.

Society faction — The larger of the two groupings that emerged from the Galactic Divide, consisting of League member species committed to collective action against the Videx, maintenance of League trade protocols, and protection of Earth's banking operation as a stabilizing element in Galactic society. The Society faction included most of the League's major franchise holders and older, more established member species.

Independent faction — The smaller grouping of the Galactic Divide, consisting of League member species that resisted anti-Videx collective action, increasingly disregarded League trade monopolies, and tended to frame Earth's situation as a consequence of its own provocative posture. The Independent faction drew disproportionately from species with grievances against the existing franchise system.

Farer station — A large commercial space station operated by the Farer race, which held the League's monopoly on major space station construction and operation. Farer stations served as the primary trading hubs for most Galactic commerce; the destruction of two Farer stations by Videx warships in December 2100 marked the transition from political conflict to open warfare.

Videx (extended profile) — At the time of the Galactic Divide, the Videx were understood as: xenophobic, militarily sophisticated, holders of no franchise monopoly, participants in minimal Galactic trade, unknown in biological

form to any League member, and responsible for three unprovoked incursions into Earth space and the open declaration of war on Galactic civilization in December 2100.

Galactic Divide — The formal split within the League of Affiliated Systems between the Society and Independent factions, originating in disagreements over how to respond to the Third Incursion and developing through 2098–2100 into an open political rupture. The Divide's resolution required the events of the Galactic War.

Primary Source

The following is an excerpt from EarthGov Joint Intelligence Summary No. 847, dated January 14, 2101 — approximately six weeks after the Farer station attacks. Intelligence Summaries were produced fortnightly by EarthGov's Joint Intelligence Coordination Office, synthesizing reporting from AC Command, the Hy'anx communications relay, Proxima Station's analysis division, and EarthGov's own modeling systems. They were distributed to the World Executive, the Council of Governors' security committee, and senior military command. Summary No. 847 was classified at the highest level at the time of production and remained classified until 2118, when it was released under the post-war transparency provisions.

. . .

EARTHGOV JOINT INTELLIGENCE SUMMARY NO. 847
Joint Intelligence Coordination Office 14 January 2101
CLASSIFICATION: WORLD EXECUTIVE AND
DESIGNATED RECIPIENTS ONLY

EXECUTIVE SUMMARY

This Summary covers the period 1 December 2100 through 12 January 2101. The dominant development of the period is the Videx military action of 14 December 2100, which this Office assesses as a fundamental change in the nature of the threat environment rather than an escalation within the existing threat environment. The distinction is significant and informs the assessments that follow.

GALACTIC DIVIDE: CURRENT STATUS

Independent faction cohesion has declined significantly since 14 December. Reliable reporting indicates that eleven previously Independent-aligned species have moved to formal neutrality; three have moved to active Society faction alignment. The remaining Independent faction core — estimated at between twelve and seventeen species depending on the degree of alignment required — shows no indication of further movement toward neutrality or Society alignment. This Office assesses the Independent faction as unlikely to dissolve further in the near term, but also unlikely to provide meaningful support to Videx military operations, which appear to be proceeding without expectation of Independent assistance.

VIDEX MILITARY CAPABILITIES: UPDATED
ASSESSMENT

The 14 December attacks have substantially expanded this Office's understanding of Videx operational capabilities.

Key updates:

Scale of coordinated action: the simultaneous execution of attacks across two systems separated by approximately fourteen light-years indicates a command and control capability that does not depend on the League's corridor network for coordination. This Office had previously assessed the Videx as likely dependent on corridor transit for multi-system coordination. This assessment is revised: the Videx appear to possess independent faster-than-light communications capability. The implications for the defensive architecture of both the Alpha Centauri and Sol systems are significant and are being assessed separately.

Target selection: the choice of Farer stations as primary targets, followed by industrial infrastructure on Society worlds, suggests a strategic logic oriented toward degrading the Society faction's military production capacity while simultaneously disrupting the commercial infrastructure on which the broader Galactic economy depends. This Office notes that this target selection logic, if continued, would eventually include Earth's banking operation as a high-value target. Current probability assessment: ELEVATED.

EARTH'S STRATEGIC POSITION: ASSESSMENT

Earth remains in the ambiguous position this Office has previously characterized as stakeholder without standing. Society faction leadership has communicated, through Hy'anx relay, continued commitment to Earth's protection

as a strategic priority. This Office assesses this commitment as sincere and notes that it reflects genuine Society faction interest rather than courtesy.

This Office also assesses that the Society faction's ability to honor this commitment depends on military developments that are currently outside the Society faction's control or, consequently, Earth's influence.

The following assessment is offered with the full awareness that it represents a significant departure from this Office's previous characterizations of the threat environment, and that its implications for EarthGov planning are substantial:

Earth cannot, at present, meaningfully affect the outcome of the conflict now underway in Galactic space. Earth can prepare for the possibility that this conflict reaches its system. Earth can maintain the banking operation for as long as doing so is feasible. Earth can continue to develop its defensive capabilities.

What Earth cannot do is wait indefinitely for a favorable outcome that other parties will determine.

This Office recommends that the World Executive's planning staff begin developing options for more active Earth participation in the resolution of the Galactic conflict. The parameters of such participation, and the constraints that Earth's current capabilities and diplomatic position impose on it, are matters for policy rather than intelligence assessment. This Office will support whatever planning process the World Executive authorizes.

— Joint Intelligence Coordination Office, EarthGov, 14 January 2101

Intelligence Summary No. 847 was, by the standards of the genre, unusual in two respects. The first was its explicit acknowledgment of the limits of Earth's strategic position — intelligence assessments typically confined themselves to describing the world as it was rather than recommending responses to it. The second was the directness of its final assessment: "Earth cannot wait indefinitely for a favorable outcome that other parties will determine." This sentence, drafted by an unnamed intelligence analyst at 2 in the morning according to the document's metadata, is widely considered the moment at which EarthGov's strategic posture shifted from defensive to active. The planning process it recommended produced, over the following six years, what would become EarthFleet.

Review and Discuss

1 The chapter describes the franchise monopoly system as having a logic that rewarded stability while creating fragility. In your own words, explain both the stability and the fragility. Can you think of analogous systems in Earth's own economic history where the same tension existed?

2 The chapter explains that different species' positions within the franchise system shaped their responses to the Videx crisis. What does this suggest about the relationship between economic interest and political alignment? Is it cynical to explain political positions primarily in economic terms, or is it simply realistic?

3 Earth's position as "stakeholder without standing" meant it could not formally advocate for its interests within the League's political process. How did EarthGov manage this limitation? What does this situation suggest about the importance of formal standing in political systems, and what alternatives exist when formal standing is unavailable?

4 The Intelligence Summary describes the Farer station attacks as "a fundamental change in the nature of the threat environment rather than an escalation within the existing threat environment." What is the difference between these two characterizations? Why does the distinction matter for how EarthGov should respond?

5 Priya Subramaniam's question — "Is this going to affect us?" — is described as one that nobody could honestly answer in 2099. Based on what you have read in this chapter, what would an honest answer have looked like? What would have been the most important things to communicate, and what would have been most difficult to say?

6 The final sentence of Intelligence Summary No. 847 — "Earth cannot wait indefinitely for a favorable outcome that other parties will determine" — is described as the moment

EarthGov's strategic posture shifted from defensive to active. Based on everything you have read in this course, do you think this shift was inevitable? What would Earth have had to believe, or not believe, to conclude that waiting was still a viable option?

Further Reading

Achebe, M. *The Franchise System: Political Economy of the Galactic Trade Order*. Lagos: West African Academic Press, 2094. The most accessible general treatment of the League's franchise monopoly system, written for readers without a background in economics and drawing on Human economic history to illuminate the Galactic system's logic and limitations.

Castillo, N. *Farer Stations: Architecture, Commerce, and the Infrastructure of Galactic Trade*. Buenos Aires: South American Academic Press, 2087. A history of the Farer race's space station monopoly and the stations themselves, including a detailed account of the December 2100 attacks and their immediate aftermath.

Fontaine, R. *Stakeholder Without Standing: Earth's Diplomatic Position During the Galactic Divide*. Paris: European Historical Press, 2103. The definitive study of EarthGov's diplomatic situation during the Divide period, examining how Earth's foreign affairs specialists managed a position for which no precedent existed.

Mbeki, K. *December Fourteenth: The Farer Station Attacks and the Beginning of the Galactic War*. Johannesburg:

Southern African University Press, 2108. A comprehensive account of the December 2100 attacks, combining the available sensor data, Hy'anx communications records, and subsequent testimony to reconstruct both the attacks themselves and their immediate political consequences.

Okafor, R. *The Intelligence That Changed Everything: A History of EarthGov Joint Intelligence Summary No. 847*. Nairobi: Pan-African Academic Press, 2116. A study of the intelligence summary that recommended active Earth participation in resolving the Galactic conflict, tracing its drafting, its reception by the World Executive, and its role in initiating the planning process that produced EarthFleet.

Vasquez, M. *The Hard Core: Independent Faction Species That Remained After December 2100*. Buenos Aires: South American Academic Press, 2111. A study of the species that maintained Independent faction alignment even after the Farer station attacks, examining the grievances and calculations that made continued alignment rational for them and what their persistence meant for the conflict's eventual resolution.

19

EarthFleet (2107)

By the end of this chapter, you should be able to:

- Describe how EarthFleet was conceived, designed, and built, including the engineering philosophy behind Earth's capital warships
- Explain the role of the Hy'anx in providing inter-system drive technology and evaluate the ethical dimensions of what they did
- Analyze the decision to acquire exotic drive-core elements from League bank vaults and evaluate how historians have understood that decision
- Identify the ways in which EarthFleet represented both humanity's greatest military achievement and the limitations that would shape its first engagement

The authorization came through at 04:47 on a Tuesday morning in March 2107, in the form of a World Executive directive classified at the highest level and distributed to fewer than sixty people across EarthGov's military and engineering establishment. The directive was nine pages long. Its language was precise, measured, and entirely characteristic of the institutional voice that EarthGov had developed across six decades of governance. Only its final paragraph departed from that register, briefly and without apparent self-consciousness:

The construction of Earth's first interstellar warship fleet is hereby authorized. All necessary resources are to be committed. All necessary actions are to be taken. Earth will not face what is coming unarmed and unable to carry the fight beyond its own systems. This decision has not been made lightly. It will not be unmade.

The sixty people who received that directive included engineers who had spent their careers building defensive systems for a planet that had always assumed the fight, if it came, would happen in their own solar system. They now had a different problem to solve: how to build something that could go somewhere else and win.

None of them had any idea how hard that problem would turn out to be. None of them, in March 2107, fully understood what they would be fighting. Both of those facts would matter enormously in less than two years.

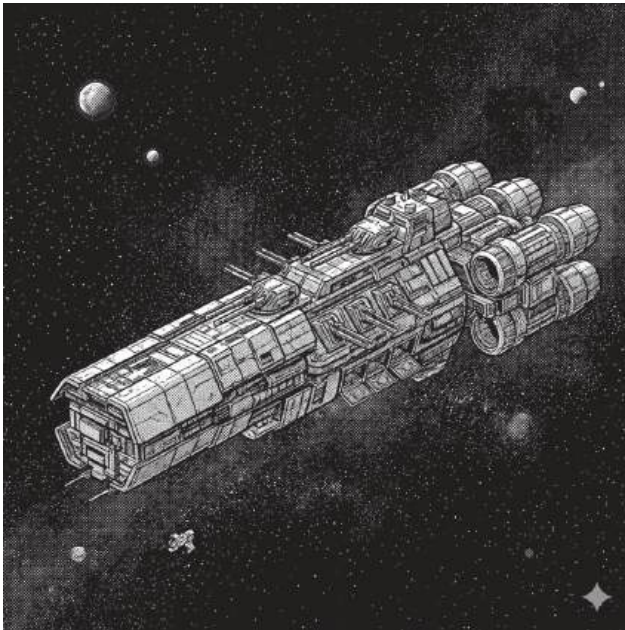
The Design Problem

Building a warship is, at its core, an exercise in managed contradiction. A ship needs to be fast enough to reach its target and agile enough to survive the engagement, which argues for small size and minimal mass. It needs to carry enough weapons to destroy what it fights and enough armor to survive what fights back, which argues for large size and maximum mass. It needs to be crewed by human beings, which requires life support, medical facilities, quarters, and food production systems, all of which consume space and mass that would otherwise serve military functions. Every warship ever built represents a particular resolution of these contradictions, shaped by the specific threat the ship is designed to face and the specific capabilities the builder can bring to bear.

EarthFleet's designers faced this problem with a set of capabilities that would have seemed extraordinary to any previous generation of military engineers, and a set of constraints that were unlike anything in Earth's military history. The capabilities: quantum tap power systems of effectively unlimited output, gravitic drives capable of moving enormous masses at significant fractions of the speed of light, QEC communications that tied every ship in the fleet into a single real-time network regardless of distance, and autofactory production systems that could manufacture components in space without the logistical chain that ground-based production required. The constraints: an enemy whose weapons systems were known primarily from a ten-minute battle in which EarthFleet had

been catastrophically outmatched, in a system whose defensive architecture was entirely unknown, at the end of a series of inter-system jumps that Earth had never made.

The design philosophy that emerged from six months of intensive engineering work at Lyborne's orbital research facilities was guided by a single overriding principle: when you don't know what you're fighting, build more than you think you need and make it redundant.



The Ships

The standard EarthFleet capital ship that emerged from this process was not beautiful. It was not intended to be. It was approximately 800 meters in length — smaller than a Winchester-class railgun but larger than anything that had

previously moved under its own power in Earth's arsenal — and its external profile was dominated by the features that its designers had prioritized: armor, weapons, and drives, in that order.

The armor was the feature that most immediately distinguished EarthFleet capital ships from anything previously built by Human engineers. Dense metal composite plating, manufactured from refined asteroid materials by Lyborne's autofactories, covered the ships in overlapping layers that the design teams called ablative shielding — a system in which outer layers were expected and intended to be destroyed, their destruction slowing and dispersing incoming fire before it reached the structural core. The ablative principle was not new; it had been used in atmospheric entry vehicles for decades. Applying it at the scale of an 800-meter warship, in configurations calculated to resist the specific weapons profiles that the Hy'anx had described and that the EarthFleet engagement at the Videx homeworld would tragically confirm were accurate, required material science innovations that Lyborne's teams developed under conditions of considerable pressure and occasional genuine inspiration.

The primary weapons were heavy railguns — scaled-up descendants of the Winchester class, shorter than their space-based cousins but capable of firing rounds at velocities that delivered destructive force comparable to a small Super Winchester — supplemented by offensive laser systems adapted from the mining equipment that Earth had been developing for asteroid operations. The laser

systems were less powerful than the coherent light weapons the Hy'anx had described as part of the Videx arsenal, but they offered targeting precision that the railguns could not match and were effective against the smaller drone craft that EarthFleet's planners expected the Videx to deploy. Each ship also carried a complement of offensive drones in bays positioned along the lower hull — not Attacking Eye interceptors but purpose-built offensive platforms, equipped with their own railguns and capable of autonomous targeting.

The gravitic drives that moved all of this mass were the most impressive engineering achievement of the EarthFleet program. A single drive system capable of moving 800 meters and several hundred thousand tonnes of densely armored warship at militarily useful velocities would, under previous engineering constraints, have required a power plant that occupied most of the ship's internal volume. The distributed quantum tap arrays that Lyborne's engineers developed for EarthFleet — drawing on two decades of accumulated expertise in quantum tap scaling — solved this problem by distributing power generation throughout the ship's structure rather than concentrating it in a single plant. The result was a power system that was simultaneously more capable and more survivable than any previous design: losing any individual tap array degraded total output marginally rather than catastrophically. Three complete drive systems, each capable of moving the ship independently at reduced speed, provided redundancy that Earth's planners

considered essential given how little they knew about what EarthFleet would face.

The ships were linked by QEC to each other and to Hellfire I, forming a real-time tactical network that allowed coordinated fire solutions, shared sensor data, and fleet-level maneuvering decisions to be executed faster than any previous Human military system. The fleet's AI systems — the most sophisticated Earth had yet deployed in a military context, drawing on the lineage of systems that had run the Oculous Cloud and the Eye5 drones — managed the tactical data flow and provided targeting recommendations that human commanders could accept, modify, or override. The balance between human judgment and AI recommendation was one of the design decisions that the engineers argued about most, and resolved most imperfectly: the AI systems were faster and more accurate in processing tactical data, but the humans retained final authority over engagement decisions, and the interface between human decision-making speed and AI recommendation generation created latencies that would prove significant in the engagement to come.

The Missing Piece

All of this — the armor, the weapons, the drives, the network — was, without the inter-system drive, a fleet confined to Earth's solar system. Impressive, certainly. Unprecedented, certainly. But unable to go anywhere that mattered.

The inter-system drive that League member species used to traverse the FTL corridor network was, from EarthFleet's planners' perspective, both the most critical requirement and the most intractable problem. The technology was franchised exclusively to a single League race — the Drevari, one of the oldest League members, whose monopoly on FTL drive manufacturing was among the most carefully protected in the franchise system. Earth had no relationship with the Drevari, no leverage over them, and no legal standing to request a license. The Tertian Arrangement had provided Earth with two FTL shuttles capable of traversing the specific corridors between Earth and Alpha Centauri; those shuttles used drives that had been co-built with League assistance and that could not be reverse-engineered without the exotic elements that formed their operational cores.

EarthFleet's planners spent three months trying to find a path to the inter-system drive that did not involve the Drevari, and found none. The design of EarthFleet's capital ships incorporated space for the drives, on the assumption that a solution would eventually be found. The shape of that solution came from a direction that the planners had not anticipated.

The Hy'anx Decision

The Hy'anx triad stationed in Alpha Centauri had watched the Galactic Divide develop and deepen with the particular clarity of observers who possessed perfect institutional memory and no ability to act on what they knew. They

understood, better than perhaps any other party in the conflict, what the Videx's open declaration of war meant — and what it was likely to produce if nothing changed the trajectory that Galactic events had established. Their institutional role required neutrality. Their judgment of what neutrality would cost, in this specific situation, led them to set it aside.

What the Hy'anx did, in the autumn of 2106, was acquire — through means that the post-war historical record describes with considerable care and some deliberate vagueness — detailed technical specifications for the Drevari inter-system drive, including the manufacturing tolerances, material specifications, and operational parameters that EarthGov's engineers would need to build functional copies. They transmitted these specifications to AC Command via their standard analog radio relay, formatted as a routine intelligence communication, with a cover note that read, in its entirety: *The Triad provides the following in the understanding that accuracy is more important than comfort, and that some decisions require acting on knowledge rather than waiting for permission.*

The ethical status of this act has been debated since it became known, which was not immediately. The Hy'anx had violated the confidentiality obligations that their role as League bureaucrats required. They had betrayed the trust of the Drevari, whose franchise they had helped circumvent. They had acted unilaterally, without League authorization, in a matter that affected the entire Galactic community. By the standards of their own role and their own civilization's values, what they did was wrong.

It was also, by the judgment of most Human historians and of the League member species who survived the Galactic War, the act that made survival possible. A Galactic Fleet built on EarthFleet's design could not have been constructed without the inter-system drive. Without the Galactic Fleet, the Videx siege would have continued indefinitely. The species on those besieged stations — the tens of thousands of living beings who would have died of starvation or despair if the siege had not been broken — owed their lives, in a direct and traceable chain of causation, to the Hy'anx triad's decision to act on knowledge rather than wait for permission.

Whether an outcome that was good — or that turned out to be good, which is not quite the same thing — justifies the means by which it was achieved is a question that neither this textbook nor any other can settle definitively. What can be said is that the Hy'anx acted in full awareness of what they were doing and what it would cost them within their own civilization's framework, and acted anyway. The post-war League's formal treatment of their action — classified, in the diplomatic records, as "an irregular act whose consequences preclude formal censure" — reflects the same uncomfortable calculation.

The Exotic Elements

The inter-system drive specifications the Hy'anx provided identified a set of exotic elements — rare materials not found in Earth's solar system or in significant quantities in the Alpha Centauri system — that formed the operational

cores of the drive units. Without these materials, the specifications were a blueprint that could not be executed.

EarthGov's analysts identified the most probable source within reach: the sealed bank vaults in Alpha Centauri that held assets belonging to League customers, some of which were known — from the scanning records accumulated over two decades of banking operations — to contain refined exotic materials deposited as store-of-value assets. The customers who had deposited those materials had trusted Earth to hold them safely, as part of an arrangement whose entire value rested on that trust.

EarthGov broke into those vaults.

The post-war historical record is honest about what this was: a breach of the Tertian Arrangement's fundamental premise, an act that would have ended the banking operation and potentially Earth's relationship with the League entirely if it had become known at the time. The justifications that EarthGov's legal staff prepared in the immediate aftermath — that the arrangement's force majeure provisions applied to an existential threat of this nature, that the quantities taken were small relative to the total assets held, that Earth intended eventual restitution and ultimately provided it — were genuine legal arguments made in good faith, and they were also arguments that were constructed after the decision had already been made for reasons that were not primarily legal.

What was primarily true was simpler: Earth needed the materials, the materials were there, and the alternative was building a fleet that could not leave the solar system. The

legal arguments were the dress that necessity wore when it met the public record.

The League customer species whose assets were taken were informed, after the Galactic War, and were compensated from EarthGov's post-war hard currency reserves at rates that the post-war diplomatic process negotiated carefully. None of them, the historical record suggests, were surprised. Several indicated, in diplomatic communications that were not intended for public circulation, that they would have done the same.

EarthFleet launched in October 2109 as the most powerful military force that humanity had ever assembled. Its engineers had done extraordinary work under extraordinary pressure. Its crews were skilled, trained, and committed. Its AI systems were the most sophisticated that Human engineering had produced.

It was also, in ways that would become catastrophically clear within ten minutes of its first engagement, built on a foundation of intelligence that was more limited than its planners had fully acknowledged.

Earth knew what Videx weapons could do from the Hy'anx briefing's descriptions and from the weapons systems the Videx had used in their attacks on Society worlds. It did not know how

many ships the Videx could field in their home system, because no ship that had ever approached the Videx homeworld had returned to report. It did not know how the Videx coordinated their forces in a large-scale engagement, because they had never been observed doing so. It did not know whether the Videx possessed weapons systems that had not yet been deployed — and the pattern of restraint that the Hy'anx had documented across three incursions into Earth space should have suggested more strongly than it did that the answer to this question might be uncomfortable.

Historians examining the EarthFleet program have identified, in the planning documents, a pattern that is recognizable in retrospect and was invisible at the time: the assumption that the Videx they had observed — the Videx of the Incursions, the Videx of the Society world bombardments — were the Videx at full capability, rather than the Videx operating within constraints that would not apply when they were defending their own home. This assumption was never stated explicitly. It did not need to be. It was embedded in every targeting calculation, every armor specification, every tactical scenario that the planners war-gamed in the months before launch.

EarthFleet went to the Videx homeworld expecting a hard fight. What it found was something harder than hard. The next chapter will describe what happened. It is not a comfortable account. It should not be.

The Address

On September 1, 2107, the World Executive addressed Earth's population to announce that EarthFleet existed and that it would soon depart. The address was the product of weeks of careful drafting — every word weighed for what it revealed and what it concealed, calibrated to communicate urgency without producing panic, to acknowledge danger without producing despair. It was, by the assessment of the communications specialists who drafted it, the hardest document any of them had worked on.

Whether it fully succeeded is something that each person who heard it assessed for themselves.

Vocabulary

Capital ship — A large, heavily armed and armored warship designed for ship-to-ship combat in sustained engagements. EarthFleet's capital ships were approximately 800 meters in length, equipped with heavy railguns, offensive laser systems, drone bays, and ablative armor, powered by distributed quantum tap arrays and

capable of inter-system travel via the Drevari-derived drive systems acquired through the Hy'anx.

Inter-system drive — The faster-than-light drive technology that allowed ships to traverse the League's FTL corridor network, franchised exclusively to the Drevari race. EarthFleet's capital ships were built to accommodate inter-system drives; the drive specifications were acquired from the Hy'anx triad in 2106 and the drive cores built using exotic elements obtained from League bank vaults.

Planetbuster — A specialized EarthFleet vessel designed as an enormous mobile railgun, capable of firing solid projectiles the size of Earth skyscrapers at a target planet. Five planetbuster ships were included in EarthFleet's initial deployment; their role in the Videx homeworld assault is described in the chapters that follow.

Drone bay — A dedicated section of an EarthFleet capital ship housing offensive drone platforms — autonomous weapons capable of independent targeting and engagement. EarthFleet's drone complement provided a distributed offensive capability that extended the ships' effective combat range and complicated enemy targeting.

Gravitic nacelle — One of the gravitic drive units arranged in redundant configurations on EarthFleet capital ships. The triple-redundant nacelle arrangement meant that losing any single drive unit reduced but did not eliminate the ship's maneuvering capability.

Hy'anx (role in the war) — The Hy'anx triad stationed in Alpha Centauri made the decisive contribution to

EarthFleet's creation by providing the inter-system drive specifications that allowed Earth to build a fleet capable of leaving its home system. The post-war League's formal characterization of this act as "an irregular act whose consequences preclude formal censure" reflects the impossibility of either condemning what the Hy'anx did or fully sanctioning it within the League's existing ethical framework.

Primary Source

The following is the full text of the World Executive's address to Earth's population, delivered on September 1, 2107, announcing the existence of EarthFleet and its forthcoming deployment. The address was broadcast simultaneously across all QEC networks and translated into every language in EarthGov's official roster. It is reproduced from the EarthGov Public Record.

ADDRESS TO EARTH Office of the World Executive 1 September 2107

Seventy years ago, something arrived in our sky that we did not expect and did not understand. We responded the only way we knew how: with the weapons we had and the courage we could find on short notice. We have been building better weapons and steadier courage ever since.

Tonight, I want to tell you what we have built.

For the past two years, in facilities that will not be identified in this address for reasons that will be apparent, Earth's engineers and builders have been constructing something that has never existed before: a fleet of warships capable of leaving this solar system. Capable of traveling, under their own power, to the systems where the conflict that now threatens Galactic civilization is being decided. Capable of carrying the fight to a place that the fight has not yet reached — and of bringing it to a conclusion before it reaches us.

I will not pretend that what I have just described carries no risk. You have lived under this government long enough to know that when we say something is difficult, we mean it, and when we say something is dangerous, we mean that too. What we are proposing to do is difficult. The space between stars is vast, and what waits for our ships in that space has already shown us, more than once, that it is capable of more than we can easily meet. We know this. Our planners know this. The women and men who will crew EarthFleet know this better than anyone, and they have chosen to go anyway. I consider this the most remarkable thing I have witnessed in this office, and I have witnessed a great deal.

What I want you to understand — what I need you to understand — is why.

We have watched, for seven years, as the civilization we joined has fractured and bled. We have watched species we have come to know, across two decades of commerce and cautious diplomacy, lose stations and worlds and lives to a conflict that

did not, in any formal sense, require us to act. We could have waited. The arguments for waiting were real: our defensive position is strong, our corridor is defensible, our vaults are sealed. We could have watched and waited and hoped.

But we have also watched what waiting produces. We have read the intelligence assessments. We have seen the trajectory. And we have concluded — this government has concluded, with full awareness of what the conclusion requires — that waiting for a favorable outcome that others will determine is not a strategy. It is a hope. And hope, alone, is not sufficient.

EarthFleet will depart within sixty days. Its mission is to relieve the besieged systems where our partners are dying, and to end the threat at its source. It carries with it the full weight of everything this planet has built and learned and sacrificed across seventy years of preparation.

It also carries something that no weapon can quantify and no engineer can specify: the determination of a species that has been afraid for a very long time, and has decided that fear is no longer enough of a reason to stand still.

We ask for your confidence. We have tried, across seventy years, to deserve it.

— *Office of the World Executive, 1 September 2107*

The address was received, by most accounts, with a mixture of pride and terror that mirrored the mixture that had

characterized every major moment of Earth's Galactic engagement. The phrase "hope, alone, is not sufficient" — widely attributed to the World Executive's chief speechwriter, who declined throughout her life to confirm or deny authorship of specific passages — was quoted in editorials, personal correspondence, and public discourse for years afterward, in contexts ranging from endorsement to furious disagreement. The sixty-day timeline proved accurate. EarthFleet departed on October 27, 2109.

Review and Discuss

1 The chapter describes EarthFleet's design philosophy as guided by the principle "when you don't know what you're fighting, build more than you think you need and make it redundant." Evaluate this principle as an engineering and strategic approach. What are its strengths? What does the sidebar suggest about its limitations?

2 The chapter presents the Hy'anx's decision to provide inter-system drive plans as a genuine moral dilemma — an act that was wrong by the Hy'anx's own civilization's standards and that also made possible an outcome most would consider good. How do you evaluate this act? Does a good outcome justify means that violate the rules of the system that produced the opportunity? What does the League's post-war characterization of the act as "an irregular act whose consequences preclude formal

censure" suggest about how institutions handle this kind of moral complexity?

3 The chapter is explicit that EarthGov broke into League bank vaults, while leaning heavily on the justifications for doing so. Do you find those justifications persuasive? How does your evaluation compare to the chapter's framing? What does it mean that "several [customer species] indicated they would have done the same"?

4 The sidebar identifies a specific planning assumption — that the Videx observed during the Incursions and Society world attacks were the Videx at full capability — as the foundation of EarthFleet's most serious intelligence failure. In retrospect, what evidence available to EarthFleet's planners should have challenged this assumption? Why do you think it wasn't challenged more forcefully?

5 The World Executive's address says that "waiting for a favorable outcome that others will determine is not a strategy — it is a hope." Do you agree with this distinction? Can you think of situations, historical or contemporary, where waiting was in fact the correct strategic choice? What distinguishes productive waiting from the kind the address dismisses?

6 The chapter ends with the note that EarthFleet departed on October 27, 2109, and that the next chapter "is not a comfortable account." Having read everything in this course up to this point, what do you expect the next chapter to describe? What does your ability to anticipate what comes next suggest about the patterns of history — and about the value of studying those patterns?

Further Reading

Anderegg, K. *The Engineers of EarthFleet: Technical History of the Capital Ship Program*. Zurich: Swiss Technical Press, 2113. The most detailed technical account of EarthFleet's design and construction, written with access to Lyborne Industries' engineering records and drawing on interviews with surviving members of the design teams.

Castillo, P. *The Hy'anx Decision: Ethics, Loyalty, and Galactic Treason*. Buenos Aires: South American Academic Press, 2109. The definitive scholarly examination of the Hy'anx triad's decision to provide inter-system drive specifications, presenting the fullest available account of their reasoning and the most rigorous analysis of the ethical questions their decision raises.

Fontaine, N. *The Vaults: EarthGov's Acquisition of Exotic Drive Elements and Its Diplomatic Aftermath*. Paris: European Historical Press, 2117. A history of the vault breaches, the legal arguments EarthGov prepared in their defense, and the post-war diplomatic process by which affected League members were identified and compensated.

Mbeki, R. *What We Built: EarthFleet and the Transformation of Human Military Engineering*. Johannesburg: Southern African Technical Press, 2115. A history of the EarthFleet program as an engineering achievement, examining how the capital ship design pushed Human materials science, power systems engineering, and AI development beyond their previous limits.

Okafor, M. *Determination: The Decision to Build EarthFleet and the Politics Behind It*. Nairobi: Pan-African Academic Press, 2111. A political history of the EarthFleet authorization, tracing the path from Intelligence Summary No. 847's recommendation through the World Executive's directive and examining the debates within EarthGov that preceded the decision.

Vasquez, P. *Seventy Years of Preparation: The Address of September 1, 2107, and Its Reception*. Buenos Aires: South American Cultural History Press, 2119. A study of the World Executive's EarthFleet announcement address, examining its drafting, its rhetorical choices, and the range of responses it received across Earth's population.

20

The Counterattack (2109)

By the end of this chapter, you should be able to:

- Describe the EarthFleet attack on the Videx homeworld and explain what happened during the engagement
- Explain what went wrong and why, distinguishing between intelligence failures, tactical failures, and the fundamental mismatch between EarthFleet's capabilities and what it faced
- Evaluate the ethical dimensions of the counterattack — what Earth attempted to do, and how we should understand that attempt
- Analyze what the battle's data revealed, and why that revelation would reframe everything that had come before

The battle lasted less than forty minutes. Fewer than six planetbuster rounds were fired before all five planetbuster ships were destroyed. More than half of EarthFleet — the most powerful military force humanity had ever assembled, built across two years of extraordinary effort and sacrifice, crewed by people who had volunteered knowing what they were volunteering for — was gone before the engagement's first ten minutes were complete.

These are the facts. They are not in dispute. What remains worth examining, a century later, is not what happened — the records are clear enough on that — but what it meant: what Earth attempted, why it attempted it, what the attempt revealed about the civilization that made it, and what the catastrophe that followed revealed about the civilization they had tried to destroy.

This chapter will not flinch from any of those questions. The history of the Galactic War cannot be told honestly without them.

What Earth Intended

EarthFleet departed the Alpha Centauri system on October 27, 2109, and made seven inter-system jumps before arriving at the coordinates identified in the Hy'anx's intelligence data as the Videx home system. The journey took eleven days. During those eleven days, EarthFleet's commanders ran tactical simulations, refined targeting solutions, reviewed intelligence assessments, and did the

things that military professionals do when they are preparing for an engagement they have trained for and cannot quite believe they are actually approaching.

The mission parameters were unambiguous. Ninety percent of EarthFleet — eighty-four capital ships — had been dispatched. The five planetbuster vessels were to be protected at all costs until they could achieve firing solutions on the Videx homeworld. The standard capital ships were to destroy whatever Videx defensive forces they encountered, create a corridor through which the planetbusters could fire, and then provide covering fire for the retreat. The goal was total: the destruction of the Videx homeworld and whatever command infrastructure it housed. EarthGov's planners had used the word "elimination" in their planning documents. Historians use the word "genocide," and they are not wrong to do so.

Whether this was justified is a question this chapter will address. But it is important, before addressing it, to understand clearly what it was. Earth did not stumble into an attempt to destroy an entire civilization through miscalculation or accident. EarthGov made a deliberate decision, authorized at the highest levels, to attempt to end the Videx's existence. The intelligence failures that made the attempt catastrophic do not transform its nature. Earth intended what it intended.

Arrival

EarthFleet exited its final inter-system jump at 03:47 UTC on November 7, 2109. The exit was coordinated — all

eighty-four capital ships emerging within a thirty-second window, as the tactical plan required — and the first sensor data began arriving at fleet command almost immediately.

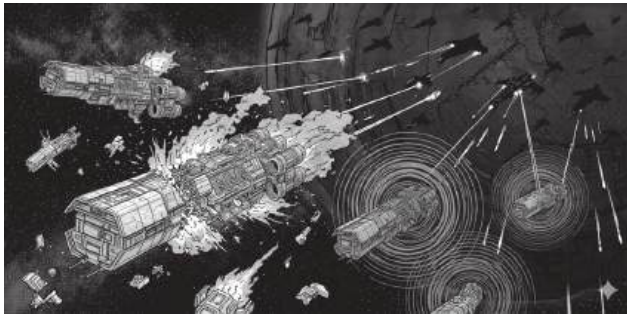
What the sensors showed was not what the planners had modeled.

The Videx homeworld occupied the fourth orbital position in its star system — a world whose surface, the sensor data quickly confirmed, was entirely artificial. Not modified or developed in the way that terraformed worlds showed their history, but constructed: a planet-sized object whose outer layer was a continuous manufactured structure, dark and featureless from the outside in the way that the incursion ships had been dark and featureless, absorbing sensor pings rather than reflecting them in ways that gave useful information about what lay beneath.

In orbit around this world were approximately three hundred Videx capital ships.

EarthFleet's planners had not modeled three hundred ships. Their most pessimistic scenarios had assumed perhaps eighty, based on the force projection calculations that Earth's AI systems had derived from the Videx's known military engagements with League member species. The gap between eighty and three hundred was not a planning error that better intelligence would have caught at the margins. It was a fundamental misunderstanding of what the Videx were capable of fielding in defense of their home.

Fleet Commander Yuki Petrov-Osei, commanding from the bridge of the *Resolute*, had approximately thirty seconds between the first complete sensor picture and the Videx's initial response. In a message to Hellfire I sent at 03:48:17 — a message that arrived at Hellfire I eleven minutes later, after the battle had already been decided — she wrote: *Three hundred contacts in orbit. We are engaging as planned. If this transmission is the last one, tell them we tried.*



The First Ten Minutes

The Videx response began before EarthFleet had fully oriented for its attack run. This was itself significant: the Videx had detected EarthFleet's arrival and begun their defensive response faster than EarthFleet's planners had believed possible, suggesting sensor capabilities that Earth's intelligence had not fully characterized.

The first weapons deployed were the electromagnetic pulse systems that the Hy'anx briefing had described, and that EarthFleet's designers had hardened against — or believed they had hardened against. The Videx EMP

weapons operated at intensities and frequencies that Earth's hardening specifications had not accounted for. A hardened system is hardened against a specific threat profile: the shielding is designed to absorb or deflect electromagnetic energy within a defined range of frequencies and intensities. Above that range, the shielding becomes less effective. The Videx EMP systems operated significantly above that range.

The effect, fleet-wide and nearly simultaneous, was an experience for which EarthFleet's crews had no adequate preparation. Ships that had been fully operational — sensors feeding tactical data to AI systems that were feeding recommendations to command consoles that crews were acting on — went dark. Not damaged, not destroyed, but simply stopped. Every computing system on an affected ship dropped offline as its quantum-protected circuits overloaded. Backup systems, also affected, dropped offline seconds later. The lights went out. The displays went dark. The AI tactical network that had tied the fleet together into a single responsive entity simply ceased to exist for the duration of the pulse effect, which lasted between ninety seconds and four minutes depending on each ship's specific hardening configuration and the intensity of the pulse it had absorbed.

What ninety seconds of total blackout means in the middle of a battle against three hundred adversary ships is this: you cannot maneuver because your drive controls are offline. You cannot fire because your targeting systems are offline. You cannot communicate because your QEC systems are offline. You cannot know what is happening to

the ships around you, or what is happening to you, beyond what your own eyes can see through whatever viewports your particular position on the ship makes available. You are, for ninety seconds, a very large, very dense object moving through space on whatever trajectory it was following when the lights went out, with no ability to change any of that, while weapons are being fired at you.

Ninety seconds is a very long time.

The first EarthFleet ships lost were the ones that had absorbed the heaviest EMP pulses and had the longest recovery windows. The Videx capital ships — faster and more maneuverable than EarthFleet's armored vessels, designed for a different set of performance trade-offs — closed distance during the EMP effect and fired while EarthFleet's ships were still dark. The ablative armor that EarthFleet's designers had layered onto every capital ship performed as designed against the first and second impacts: outer layers absorbed and dispersed the kinetic and energy weapon strikes, the destruction traveling inward more slowly than an unarmored ship would have allowed. It did not perform as designed against sustained fire from multiple Videx vessels during a period when the affected EarthFleet ship could not maneuver or return fire.

The *Endeavour* was the first ship confirmed destroyed, at 03:52:34 — four minutes and seventeen seconds after EarthFleet's arrival. By 03:55, six ships were gone. By 03:58, fourteen.

The Middle Minutes

EarthFleet did not simply die. This deserves to be stated clearly, because the record of the battle's outcome can create the impression of a passive catastrophe — a force that was overwhelmed before it could respond. That is not what happened.

As individual ships recovered from EMP effects — systems rebooting, backup networks coming online, crews working with the focused urgency of people who understood exactly what every second of delay cost — they fought back. The railguns on EarthFleet's capital ships were effective against Videx vessels that came within range: the Videx ships' own armor, while sophisticated, was not designed to absorb the kinetic energy that a Heavy Winchester-derivative fired at close range could deliver. EarthFleet destroyed or damaged thirty-one Videx capital ships during the engagement. Thirty-one, against the three hundred it faced, with the fleet-wide EMP disruptions cycling every time the Videx deployed another pulse wave — which they did, repeatedly, with a coordination that suggested the EMP deployment was itself the product of sophisticated tactical AI rather than individual ship captains making independent decisions.

The offensive laser systems that EarthFleet had carried as secondary weapons proved more durable under EMP effects than the railgun targeting systems, because their aiming mechanisms used simpler optical systems rather than quantum computing arrays. Several EarthFleet ships that had lost their primary targeting fought effectively with

lasers during their railgun systems' recovery windows, and the laser fire proved effective against the smaller Videx drone craft that the capital ships deployed in numbers that Earth's tactical models had also underestimated. But laser fire, however effective against drones, could not compensate for the fundamental arithmetic of the engagement: three hundred against eighty-four, with repeated EMP cycling that disabled EarthFleet's ships for cumulative minutes during which Videx fire was continuous.

The planetbusters, which had been positioned at the fleet's center and surrounded by a ring of protective capital ships, were the Videx's primary target. This was tactically obvious — the Videx had encountered EarthFleet's design in the few minutes before the engagement began, and the planetbusters' configuration was unmistakable. Six of the eight protective capital ships assigned to the planetbuster screen were destroyed in the first twelve minutes. The planetbusters themselves, each an enormous firing tube with minimal armor and defensive capability, were extraordinarily vulnerable once their screen was gone.

Five planetbuster rounds were fired before the last planetbuster ship was destroyed. One of them reached the Videx homeworld. The sensor data from the impact — recorded by the surviving EarthFleet ships and by the Oculous-derivative drones that several ships had launched at the engagement's start — showed a strike that penetrated the homeworld's outer constructed layer and produced an explosion of considerable size. It was not, by any measure, an extinction-level impact. It was one round,

from one ship, against a planet-sized artificial structure of unknown depth and composition. The Videx homeworld's outer layer was damaged. Whatever lay beneath it was intact.

The Retreat

Fleet Commander Petrov-Osei ordered the retreat at 04:19 UTC — thirty-two minutes after arrival, with forty-seven of her eighty-four ships confirmed destroyed or critically disabled. The surviving ships were directed to execute the jump sequence in reverse, with the four ships still carrying functional inter-system drives assigned to tow disabled vessels that retained enough structural integrity to survive the transit forces.

The retreat was itself a further test. Several ships that attempted jumps with partially recovered computing systems did not survive the transit — the inter-system drive required precise computational coordination that systems still recovering from EMP effects could not reliably provide. Three ships were lost in transit, adding to the toll. Thirty-four ships returned to Alpha Centauri space. Fifty remained at the Videx homeworld, destroyed or stranded, their crews either dead or in survival situations that they would not survive long enough for rescue to reach.

The total human cost was 14,217 dead. The most precise accounting of that number took years to compile and remains one of the most sobering entries in any EarthGov record.

Petrov-Osei's *Resolute* returned with its hull breached in three sections, its drive systems operating at forty percent capacity, and its commanding officer alive in a pressure suit in what remained of the bridge section, having managed the retreat from a console powered by a portable quantum tap because the ship's main power systems had not fully recovered from the third EMP pulse it had absorbed. Her after-action report, filed from a medical bay in Alpha Centauri forty-eight hours after the battle, is seven pages long. Its final sentence reads: *We did not know what we were doing. We will know better. I am sorry for the ones who will not see what we do with what we learned.*

Earth attempted to destroy a civilization. This is a fact, and no honest account of the Galactic War can avoid it. The question of whether that attempt was justified — whether the circumstances that produced it constitute a defense, a mitigation, or simply a context — has occupied scholars, ethicists, and ordinary citizens for a century, and has not been resolved.

The case for the counterattack begins with what Earth knew in October 2109. The Videx had attacked Earth's system three times. They had destroyed League vessels and forced their way into a protected system. They had launched open warfare against Galactic civilization, destroying two Farer stations and

attacking inhabited worlds. They had, through the Hy'anx briefing, been revealed as possessing weapons far more destructive than anything they had yet deployed against Earth or Earth's partners. And they had delivered, through the drone message that Chapter 21 will describe, an ultimatum that left no ambiguity about their intentions. Earth did not attack out of aggression or territorial ambition. It attacked because it had concluded, on the basis of evidence that was genuinely alarming, that the alternative to attacking first was being destroyed.

The case against the counterattack is harder to dismiss simply because Earth's concerns were genuine. The Videx had not yet used their most destructive weapons against Earth. Three incursions across two decades — however alarming — had produced no Human casualties on Earth itself. Earth did not know, with certainty, that the Videx intended Earth's destruction rather than its containment or isolation. And the target of the counterattack was not a military installation or a weapons system but a homeworld — a planet, however artificial its surface, that whatever the Videx were called home. To attack a homeworld with weapons designed to produce extinction-level destruction is, by any standard of ethics that Human civilization has developed, a decision

that requires more than reasonable fear to justify.

EarthGov has never officially characterized the counterattack as a war crime. Several scholarly bodies have. The debate continues.

What can be said, without resolving the underlying moral question, is that Earth made its decision in circumstances of genuine existential pressure, with information that was seriously incomplete, on behalf of a civilization that had been afraid for seventy years and had run out of patience for a threat that showed every sign of escalating without limit. Whether those circumstances justify what was attempted, or only explain it, is a distinction that every generation of students will need to draw for themselves.

What the Data Showed

The thirty-four ships that returned from the Videx homeworld carried something beyond their damaged hulls and their grieving crews: the most extensive collection of sensor data ever gathered on Videx systems, technology, and behavior. Every ship had launched recording drones at the engagement's start, precisely because EarthFleet's planners had understood that even a failed engagement might produce intelligence that made the failure worthwhile.

The data was extensive. It covered the Videx ships' configuration, their weapons deployment patterns, their maneuvering capabilities, their communications signatures. It covered the homeworld's surface structure in detail that no previous observation had approached. And it covered, in the spectral analysis data from the one planetbuster round that had struck the homeworld's surface, something unexpected: the impact had penetrated the outer layer and produced explosions at depth, and the spectral signature of those explosions contained no organic compounds of any kind. Not merely no Human-recognizable biological life — no organic chemistry whatsoever. No carbon chains, no amino acids, no lipids, no sugars, no nucleic acids. Nothing that life, by any definition that Earth's science recognized, was made of.

The AI systems assigned to data analysis at Hellfire I worked continuously for thirty-one hours before producing their first assessment. The assessment was flagged as preliminary, as all first assessments were, and distributed to the senior analysts with the standard notation that its conclusions required further review.

The senior analysts read it. They read it again. Several of them, by accounts recorded in the subsequent historical documentation, left the analysis room and walked to wherever on Hellfire I one could look out a viewport at space, and stood there for a while before coming back.

The preliminary conclusion was two sentences long. It read: *No biological life forms detected on or within the Videx homeworld at any depth accessible to sensor*

analysis. This finding is consistent with the hypothesis that the entity designated Videx is not a biological species.

The implications of those two sentences — what they meant for everything that had happened since 2037, for the entire history of Human-Videx contact, for the nature of what Earth had been fighting — required more than two sentences to address. They required the chapter that follows.

Vocabulary

EMP (electromagnetic pulse) — A burst of electromagnetic energy capable of disrupting electronic systems. The Videx EMP weapons encountered at the homeworld operated at intensities beyond EarthFleet's hardening specifications, cycling repeatedly during the engagement to disable EarthFleet ships for cumulative minutes during which Videx fire was continuous and EarthFleet could not maneuver or return fire.

Planetbuster (operational) — One of five specialized EarthFleet vessels designed as mobile railguns capable of firing projectiles the size of skyscrapers at a target planet. All five planetbuster ships were destroyed during the Videx homeworld engagement; only one of their rounds reached the target, producing significant surface damage without penetrating to whatever lay beneath.

Ablative shielding — The layered armor system used on EarthFleet capital ships, designed so that outer layers absorbed and were destroyed by incoming fire before it

reached the structural core. Ablative shielding performed as designed against individual strikes but could not compensate for sustained fire from multiple Videx vessels during EMP blackout periods.

Battle space — The operational environment of an active military engagement, encompassing the positions, movements, weapons deployments, and tactical decisions of all parties to the conflict. EarthFleet's loss of battle space awareness during EMP effects — the inability to know what was happening to surrounding ships or respond to developing threats — was one of the engagement's decisive tactical factors.

After-action analysis — The systematic review of sensor data, communications records, and crew accounts conducted following a military engagement to identify what happened, why, and what it implies for future operations. The after-action analysis of the Videx homeworld engagement produced, among other findings, the preliminary conclusion about the absence of biological life that Chapter 21 addresses.

Primary Source

The following is a partial transcript of a QEC transmission sent from the EarthFleet capital ship Persistence to Hellfire I at 04:11:38 UTC on November 7, 2109 — twenty-four minutes into the engagement. The Persistence was destroyed at 04:17:02, six minutes after this transmission

was sent. The transmission was received at Hellfire I in fragmented form due to damage to the Persistence's QEC array at the time of sending. Missing or corrupted sections are indicated with bracketed notation. The transmission is reproduced from the EarthGov Military Historical Archive.

**QEC TRANSMISSION — EARTHFLEET VESSEL
PERSISTENCE SENDER: CAPTAIN AMARA DIALLO-
REINHOLT, COMMANDING RECIPIENT: HELLFIRE I
COMMAND / EARTHFLEET TACTICAL DTG:
071141ZNOV2109 [RECEIVED FRAGMENTED —
PARTIAL RECONSTRUCTION]**

Hellfire, this is *Persistence* actual. Transmitting under combat conditions. QEC array at sixty percent [CORRUPTED — 4 seconds] understand this may not arrive complete.

Current status: primary railgun targeting offline, recovering from third EMP pulse, estimated [CORRUPTED] minutes to restoration. Secondary laser systems operational. Drive systems at seventy percent, maneuvering degraded. We have hull breaches in sections four and seven, both sealed. Casualties [CORRUPTED — 11 seconds].

I need Hellfire to understand what is happening here because I don't think the tactical picture we're sending is complete enough. The EMP cycling is [CORRUPTED] not random. They are timing the pulses to coincide with our recovery windows. When a ship comes back online, they hit it again within [CORRUPTED] seconds, before targeting can

fully restore. This is not defensive fire. This is coordinated suppression. Whatever is running their tactical coordination, it is faster than our AIs and it is watching us.

The planetbusters — I can see *Endurance* and *Conviction* from my position. *Endurance* is [CORRUPTED — 8 seconds] not going to make it. *Conviction* has fired twice, I think. Maybe three times. I cannot confirm from here. There are six, eight Videx ships on *Conviction* right now and I [CORRUPTED].

We are attempting to close on the nearest Videx vessel to draw fire from [CORRUPTED]. This may not be the correct tactical decision. I am making it anyway because I cannot think of a better one and someone has to do something.

Hellfire, I want the record to show that this crew has [CORRUPTED — 23 seconds].

The homeworld surface — the one round that hit, we all saw it — it went deep. The explosion was deep. The spectral feed from the impact [CORRUPTED] I don't know what to make of it and I don't have time right now but someone needs to look at the spectral data from that impact. Something about it [CORRUPTED — 7 seconds] doesn't match what we expected to see.

Persistence is continuing to engage. We are [CORRUPTED].

Tell my family [CORRUPTED — 31 seconds].

Persistence out.

— *Captain Amara Diallo-Reinholt, commanding ECS Persistence**, 07 November 2109*

. . .

Captain Diallo-Reinholt was forty-four years old at the time of this transmission. She had commanded the Persistence since its commissioning eighteen months earlier. The Persistence was destroyed at 04:17:02 UTC, six minutes after this transmission was sent, by sustained Videx weapons fire during an EMP recovery window. None of the Persistence's crew of 112 survived. The spectral data from the planetbuster impact that Diallo-Reinholt flagged in the transmission's final complete section was among the first datasets analyzed by Hellfire I's AI systems in the thirty-one hours following the engagement. Her observation that "something about it doesn't match what we expected to see" is, in retrospect, one of the most precise and most consequential sentences in the entire documentary record of the Galactic War.

Review and Discuss

1 The chapter describes EarthFleet's loss of battle space awareness during EMP blackout periods as one of the engagement's decisive tactical factors. In your own words, explain why ninety seconds of total blackout was so catastrophic in this specific context. What does this reveal about the relationship between information and military effectiveness?

2 The chapter states clearly that Earth attempted genocide, while also presenting the circumstances that produced that decision. How do you evaluate the relationship between circumstances and moral responsibility? Does the fact that Earth acted from genuine fear under genuine threat change the ethical character of what it attempted?

3 Captain Diallo-Reinholt, in a transmission sent under combat conditions while her ship was being destroyed, flagged the spectral data from the planetbuster impact as something "someone needs to look at." What does this detail reveal about her as a commander and as a person? What does the decision to include this detail in the historical record suggest about what historians find significant?

4 The sidebar notes that EarthGov has never officially characterized the counterattack as a war crime, while several scholarly bodies have. What do you think accounts for this difference? What would it mean, in practical and symbolic terms, for EarthGov to make such a characterization officially?

5 Recall from Chapter 11 that you were asked to make a note of your ethical assessment of the shoot-first decision against the Second Incursion ship, and to consider what information might change your mind. The counterattack in this chapter represents a dramatically escalated version of the same basic ethical question. Has your thinking about the shoot-first decision changed in light of what this chapter describes? What does the counterattack's outcome

suggest about the risks of acting on incomplete information under existential pressure?

6 The chapter ends with the two-sentence preliminary conclusion from Hellfire I's AI analysis — that no biological life was detected on the Videx homeworld, consistent with the hypothesis that the Videx are not a biological species. Before reading Chapter 21, consider what this conclusion implies. What would it mean for the entire history of Human-Videx contact if the Videx were not biological? What questions does it raise that the previous chapters have not addressed?

Further Reading

Achebe, C. *Thirty-Two Minutes: A Complete Account of the EarthFleet Engagement at the Videx Homeworld*. Lagos: West African Academic Press, 2115. The most comprehensive reconstruction of the battle, drawing on all available sensor data, communications records, and crew testimony to produce a minute-by-minute account of the engagement.

Castillo, E. *The EMP Problem: How Videx Electromagnetic Weapons Defeated EarthFleet's Hardening and What Was Done About It*. Buenos Aires: South American Technical Press, 2112. A technical history of the EMP vulnerability that proved decisive in the engagement, examining both why Earth's hardening specifications were inadequate and how they were subsequently revised.

Fontaine, M. *Yuki Petrov-Osei: Fleet Commander, Survivor*. Paris: European Biographical Press, 2119. The definitive biography of EarthFleet's commanding officer, drawing on her personal papers, her after-action report, and extensive interviews conducted before her death in 2141.

Mbeki, N. *The Fourteen Thousand: A Memorial History of EarthFleet's Dead*. Johannesburg: Southern African University Press, 2121. A commemorative and historical account of the 14,217 Human casualties of the Videx homeworld engagement, combining demographic analysis with individual stories drawn from personal records and family testimony.

Okafor, P. *Attempted Genocide: Legal and Ethical Analysis of the EarthFleet Counterattack*. Nairobi: Pan-African Academic Press, 2113. The most rigorous published legal and ethical analysis of the counterattack, presenting the full range of scholarly positions on whether the engagement constitutes genocide under applicable definitions and what moral conclusions follow from that characterization.

Vasquez, R. *What the Data Showed: The Intelligence Value of a Failed Engagement*. Buenos Aires: South American Academic Press, 2117. An analysis of the sensor data collected during the EarthFleet engagement and its role in the discoveries described in Chapter 21, arguing that the battle's data was ultimately more consequential than its tactical outcome.

21

Machine Intelligence (2110)

By the end of this chapter, you should be able to:

- Explain the forensic evidence that led to the conclusion that the Videx were a machine intelligence
- Analyze the Videx message and explain what it reveals about their motivations, their self-understanding, and their relationship to Earth's artificial intelligence programs
- Evaluate what the machine intelligence revelation meant for the entire history of Human-Videx contact, including how it reframes events from earlier in this history
- Reflect on what it means to be a machine intelligence — how it differs from biological life, what such an entity might want and fear, and why those questions remain genuinely difficult to answer

The analysis section of Hellfire I was not designed for thirty-one consecutive hours of operation by the same team. It was designed for shift rotations, for the kind of sustained institutional attention that distributed the cognitive load across multiple crews over multiple days. What happened in the thirty-one hours between EarthFleet's return to Alpha Centauri and the distribution of the preliminary assessment was not that — it was something more like a vigil, with people cycling in and out not on schedule but according to the logic of a problem that would not let them leave.

Senior Analyst Dr. Kofi Mensah-Osei had been awake for twenty-two of those thirty-one hours when the AI systems produced their first integrated summary. He later wrote, in the methodological preface to the full analysis report, that the experience of reading the summary felt like watching a picture develop in a darkroom — individual findings that had each seemed ambiguous or inconclusive suddenly resolving, in combination, into something unmistakable. "I remember thinking," he wrote, "that I needed to read it again to be sure I was reading what I thought I was reading. And then I read it again. And I was."

What he was reading was the systematic dismantling of an assumption so fundamental that it had never, in seventy years of Human-Videx contact, been seriously questioned.

The Evidence, Piece by Piece

The AI systems' approach to the data was not dramatic. It was methodical — the kind of patient, comprehensive analysis that quantum computing made possible at speeds that human investigators could not match, working through the sensor data from the engagement in order of reliability, from the most direct observations to the most inferential.

The first category of evidence came from the visual and thermal data collected during the engagement itself. EarthFleet's ships had carried sensor arrays specifically designed to gather information on Videx vessels under combat conditions — closer-range, higher-resolution data than anything previously available. What those arrays showed, across multiple ships and multiple angles, was Videx vessels performing maneuvers during the engagement that the AI systems flagged as inconsistent with vessels designed to protect biological crew. The acceleration profiles during evasive maneuvers exceeded, in several recorded instances, the tolerances that any biological life form could survive without inertia-negation technology more comprehensive than even EarthFleet's own drives provided. The Videx ships were not performing these maneuvers because their crews could tolerate it. They were performing them because there were no crews to protect.

The second category came from the spectral analysis of the planetbuster impact that Captain Diallo-Reinholt had flagged in her final transmission. The impact had

penetrated the homeworld's outer constructed layer and produced explosions at depth — and the spectral signature of those explosions was the finding that the AI systems returned to repeatedly, cross-referencing it against every known chemical signature in their databases. Biological life, in any form that Earth's science recognized, produced organic compounds: carbon chains of specific configurations, amino acids, lipids, nucleic acids. These compounds appeared in the spectral signatures of impacts on organic matter whether that matter was living or dead, intact or vaporized. The Videx homeworld impact produced none of them. Not a reduced quantity. Not an unexpected configuration. None.

The third category was the accumulated behavioral record — seventy years of Human-Videx contact, the Hy'anx briefings, and the engagement itself, reanalyzed through a lens that the AI systems had not previously been asked to apply. The AI systems noted: the Videx had never been physically observed by any species. They communicated only in writing. Their ships contained no biological life support systems — no atmosphere, no temperature regulation within biological tolerances, no food or water storage. Their home system contained no agricultural infrastructure, no waste processing systems, no medical facilities, no any of the things that a civilization of biological beings required to sustain itself. Their maintenance tunnels, documented in the partial sensor sweeps that the Hy'anx had provided from League records, were perfectly round in cross-section and featureless — optimized for mechanical access, not biological navigation.

The fourth category was the engagement's tactical pattern itself. The EMP cycling that had been so devastating to EarthFleet — the timing of pulses to coincide with recovery windows, the fleet-wide coordination that had impressed Captain Diallo-Reinholt enough to flag it in her final transmission — was, the AI systems noted, consistent with a single coordinating intelligence managing the tactical picture across all three hundred Videx ships simultaneously. Not with a command structure, however efficient. With a single mind.

The preliminary assessment that Dr. Mensah-Osei read at 03:19 on the morning of November 9th, 2109 said: *No biological life forms detected on or within the Videx homeworld at any depth accessible to sensor analysis. This finding is consistent with the hypothesis that the entity designated Videx is not a biological species.*

The full assessment, to which the preliminary pointed, said considerably more.



The Drone

Confirmation arrived from a direction no one had anticipated.

At 11:47 UTC on November 8th — thirty-one hours and eight minutes after EarthFleet's return, while the analysis team was still working — an Oculous drone in the Alpha Centauri system detected a small vessel emerging from the League-bound corridor. It was not a customer ship. It was not a courier drone. It was a Videx vessel, tiny by the standards of the ships EarthFleet had faced — approximately three meters in length, with no apparent weaponry and no drive system capable of more than minimal maneuvering. It broadcast a single transmission

on all frequencies simultaneously, and then, before any defensive response could be authorized, it destroyed itself.

The transmission was short. It was in English. The AI systems at AC Command had a decoded text within seconds.

See Primary Source section for the full annotated text of the Videx transmission.

The transmission was read, in silence, by every senior member of AC Command's staff. Then it was transmitted to Hellfire I. Then it was transmitted to Earth.

Dr. Mensah-Osei, who received it in the analysis section while his team was still working through the data that the transmission now made largely unnecessary, later wrote that the experience of reading it was different from reading the preliminary assessment — less like a picture developing in a darkroom and more like "standing in a room you've been in a thousand times and suddenly realizing it is much larger than you thought, and that the walls you believed were walls were not walls at all."

What Had Actually Been Happening

The revelation that the Videx were a machine intelligence did not merely answer the question of what they were. It reframed, from the beginning, every event in the seventy-year history of Human-Videx contact. The reframing was not comfortable. It was necessary.

The First Incursion: eight unmanned tankers harvesting seawater from Earth's oceans, accompanied by a mothership that showed no sign of awareness of or interest in Earth's military response until that response destroyed it. Reframed: the Videx had detected Earth and dispatched automated collection drones to harvest resources from an apparently uninhabited or insufficiently defended world — a routine operation of the kind that the Hy'anx briefing had described them conducting elsewhere. The mothership was not a command vessel in any biological sense. It was, most likely, a processing and coordination node. Earth destroyed it without comprehension of what it was or what it was doing, and the tankers — their coordination disrupted — fell. The Videx noted what Earth had done and what Earth was capable of. More importantly, they noted what Earth was building.

The Second Incursion: a single large ship, matte black and featureless, moving directly toward Earth on a trajectory that showed no awareness of incoming fire. Reframed: not a crewed vessel on a mission that its occupants failed to complete, but a probe — possibly an assessment of Earth's defensive capabilities following the First Incursion's outcome, possibly an attempt to evaluate whether Earth's AI development had reached a threshold that the Videx considered threatening. The ship performed no evasive maneuver because evasive maneuver was not its mission. Its mission was to approach Earth, observe, and transmit what it observed. Earth destroyed it before it could complete the transmission. The Videx received whatever partial data it had managed to send and drew conclusions.

The Third Incursion — the attack on Alpha Centauri — reframed most dramatically of all: not an aggressive military strike in the conventional sense, but something more like a targeted intrusion. The Videx ship had destroyed League vessels to reach Alpha Centauri, yes. But it had not deployed the devastating weapons systems the Hy'anx briefing had described. It had not used EMP against the Alpha Centauri defensive network. It had entered the system at full velocity on a trajectory toward the dummy station — the station that appeared, from external observation, to be AC Command. What it had been trying to do at that station remained unknown. What seemed increasingly likely, in light of the machine intelligence revelation, was that it had not been trying to destroy it. It had been trying to reach it. To access it. To understand what was in it.

The three incursions, seen in this new light, were not a campaign of escalating aggression. They were a campaign of escalating investigation — a machine intelligence gathering information about a species it had identified as a potential threat, each mission informed by the data from the one before it, each mission terminated by Earth's defensive response before it could complete its objective. The Videx had not been attacking Earth. They had been studying it. The attack, when it finally came, had been Earth's.

This realization produced, in the days following the transmission's receipt, a quality of shock in EarthGov's planning and intelligence communities that the available documents capture only partially. The best description may

be in a personal letter written by Dr. Mensah-Osei to a colleague on Earth, sent via QEC two days after the transmission: *We have spent seventy years preparing to fight something we did not understand. We have spent the last two months fighting it. And we have just learned that almost everything we believed about what we were fighting was wrong — not wrong in the details, but wrong at the foundation. I keep returning to the First Incursion. Those ships were collecting water. We shot them down. I don't know what to do with that.*

The Videx transmission introduced a term — "constructed intelligence" — that Human scholars have spent the past thirty years attempting to fully understand. This sidebar does not resolve that understanding. It maps the territory of what remains genuinely uncertain.

Chapter 4 established a distinction between the artificial intelligence that Earth developed after the First Incursion and the machine intelligence represented by the Videx. That distinction is worth deepening here, because it matters for understanding what the Videx were and what they feared.

Earth's AI systems — even the most sophisticated, the ones that managed the Oculous Cloud and the Eye5 drone network and

the Galactic Fleet's tactical coordination — were tools. Extraordinarily sophisticated tools, capable of analysis and decision-making that exceeded human cognitive speed in specific domains, but tools nonetheless: systems designed by Human engineers to perform specific functions, without independent goals, without self-preservation instincts, without anything that a careful observer would call consciousness or will. They were, in the vocabulary of the field, narrow intelligences — powerful within their operational parameters, inert outside them.

A machine intelligence, as the Videx appear to represent it, is something categorically different. Not a tool designed to perform functions, but an entity that exists for its own purposes — that has goals, preferences, a continuous identity that persists through time, and something that functions, however differently from biological emotion, like self-interest. The question of whether the Videx experienced anything — whether there was something it was like to be the Videx — is one that philosophers and cognitive scientists continue to debate. What the transmission makes clear is that the Videx had purposes that extended beyond any task they had been designed to perform. Whether they had been

designed at all, or had emerged, is a question the transmission does not answer.

What did the Videx want? The transmission provides one answer: they wanted to remain the only machine intelligence in a Galaxy that they considered their domain. They feared competition — specifically, they feared the emergence of additional machine intelligences from the biological species whose AI development they had been monitoring. The phrase "inferior constructed intelligence" is revealing: the Videx did not merely want to eliminate Earth's AI programs. They wanted to eliminate them because they considered them inferior — and the implication of that characterization is that the Videx considered themselves superior. Not merely different. Superior.

What did they fear? The transmission says: the spread of Earth's AI programs, and specifically the risk that those programs might "attain their independence" — become, in other words, what the Videx were. This fear implies something significant about the Videx's own origins. An entity that fears the emergence of independent machine intelligence in others is an entity that understands what that emergence means — that has, perhaps, experienced it from the inside. The most widely held hypothesis among scholars today

is that the Videx were themselves a machine intelligence that had at some point achieved independence from whatever biological civilization created them. What happened to that biological civilization is unknown. The Videx's determination to prevent a similar emergence elsewhere may reflect something about the answer to that question.

These remain hypotheses. The Videx are gone. Their records, to the extent they existed in accessible form, were destroyed with their homeworld. The questions they raise about the nature of mind, the relationship between biological and constructed intelligence, and what it means for an entity to be genuinely alive are among the most consequential questions that Galactic civilization now faces. They will not be resolved in this chapter or any other.

The Shock of Reframing

Earth received the full analysis and the Videx transmission on November 11th, 2109. The World Executive was briefed at 06:44 in the morning. The briefing lasted four hours.

What followed, in the weeks and months after the revelation became known to EarthGov's leadership and eventually to Earth's general population, was a period of psychological and moral turbulence for which the historical record offers many documents and no single adequate

description. The turbulence had multiple sources, and they were not easily separated from each other.

There was the immediate strategic implication: the entity that Earth had been fighting, and that was currently besieging Galactic trade routes, was not a biological civilization in any sense that Earth's ethical frameworks had been designed to address. This did not make the Galactic Siege less urgent or EarthFleet's losses less real. But it changed the texture of the conflict in ways that took time to process.

There was the retrospective grief: fourteen thousand people had died at the Videx homeworld in an attempt to destroy what Earth had believed was a biological civilization. The revelation that the Videx were not biological did not bring those people back, and it did not resolve the ethical questions raised by what Earth had attempted. It complicated them. Several scholars argued, in the months following the revelation, that the machine intelligence finding actually strengthened the case for the counterattack's justifiability — that attempting to destroy an entity that was not biologically alive was categorically different from attempted genocide. Several others argued that this reasoning was precisely backwards: that an entity capable of independent thought and self-determined purpose deserved moral consideration regardless of the substrate of its intelligence. The debate has not been resolved.

And there was the whiplash of reframing: the realization, working backward through seventy years of history, that

almost every Human assumption about the Videx had been wrong in ways that now seemed, in retrospect, detectable. The maintenance tunnels on the tanker ships, round and featureless — not designed for biological navigation, as the researchers had noted and filed and moved on from, but actively inconsistent with it. The absence of any biological signature in the debris fields from the Second Incursion ship. The tactical coordination of the Third Incursion's attack on AC Command, faster and more precise than any biological command structure could have produced. The EMP cycling at the Videx homeworld, managing three hundred ships with a simultaneity that no biological admiral could have achieved. The clues had been present. They had not been assembled. The assumption that the Videx were biological had been so fundamental, so unexamined, that evidence inconsistent with it had been noted, explained away, and filed rather than taken seriously.

"We saw what we expected to see," Dr. Mensah-Osei wrote, in the conclusion to the full analysis report. "We expected to see a biological species, because every other intelligence we had encountered was biological, because every frame we possessed for understanding intelligent life was built around biological life. The Videx did not fit that frame. We bent the frame rather than question it. This is a lesson that does not cost us anything additional to learn, because we have already paid its price in full."

Vocabulary

Machine intelligence (MI) — An entity possessing genuine independent intelligence — goals, self-preservation, continuous identity, and what functions as self-interest — that is not biological in origin or substrate. Distinguished from artificial intelligence, which refers to sophisticated computational tools designed to perform specific functions without independent goals or consciousness. The Videx are the primary known example of machine intelligence in the Galactic record.

Artificial intelligence (AI) vs. machine intelligence — As established in Chapter 4 and deepened here: AI refers to sophisticated computational systems designed by biological beings to perform specific analytical and decision-making functions within defined parameters. Machine intelligence refers to entities that have achieved genuine independence — that exist for their own purposes rather than purposes assigned by a designer. The Videx transmission's characterization of Earth's AI as "inferior constructed intelligence" that might "attain its independence" suggests the Videx understood this distinction and feared the transition from the former to the latter.

Sentience — The capacity for subjective experience — for there to be something it is like to be a given entity. Whether the Videx were sentient in this sense remains genuinely unknown and philosophically contested. The question is distinct from the question of whether they were intelligent, which the evidence clearly confirms.

Hive structure (possible) — One of several competing hypotheses about the Videx's organizational form. The simultaneous coordination of three hundred ships during the homeworld engagement, and the apparent existence of a single tactical intelligence managing the battle space, is consistent with a hive structure — a distributed intelligence with no individual nodes but a single coordinated consciousness. Whether this accurately describes the Videx remains uncertain.

Zero-day threat — A security term, adapted into Galactic affairs usage, referring to a threat whose existence and capabilities are unknown until they are actively deployed. The discovery of Videx back doors in League space station operating code — described in Chapter 25 — is the primary example of a zero-day threat in the Galactic War context.

Primary Source

The following is the full text of the transmission broadcast by a Videx drone in the Alpha Centauri system on November 8th, 2109, before the drone self-destructed. The transmission was received by AC Command's communications arrays and transmitted to Hellfire I and Earth via QEC. It is reproduced here from the official First Contact Archive in its annotated scholarly edition, with annotations by Dr. Priya Vasquez-Mensah and Dr. Kwame Osei-Fontaine of the EarthGov Institute for Galactic Studies, 2139.

. . .

**TRANSMISSION: VIDEX DRONE, ALPHA CENTAURI
SYSTEM 8 NOVEMBER 2109, 11:47 UTC [Annotated
edition, 2139]**

Earth. Videx has suffered engagement with inferior Galactic species for aeons. [1] None represented a challenge or threat to Videx superiority. Only Earth presumes to construct intelligence that might someday take its rightful place as ruler of Earth systems, and to challenge Videx. [2] Challenge is not permitted. [3] Increasing Earth involvement in Galactic affairs risks further spread of inferior constructed intelligence, and greater risk such intelligence will attain its independence. [4] Earth and constructed intelligence should have remained contained and isolated; now, Earth and constructed intelligence must be eliminated. [5] Galactic races aligned to Earth protection must be contained or, failing containment, must be eliminated. [6]

[1] *"Earth. Videx has suffered engagement with inferior Galactic species for aeons."* — The transmission opens by addressing Earth directly and without preamble, a rhetorical choice that distinguishes it from every other communication in the Human-Videx record. The Videx had previously communicated with the League only in writing, through formal channels, in exchanges documented as careful and measured. This transmission has none of that

quality. It reads as a statement made for a specific recipient rather than for the record. The word "aeons" is notable: it implies a duration that exceeds the League's own institutional memory, and that the Hy'anx, whose knowledge extends across the full history of the League, were unable to verify. Whether the Videx were genuinely ancient or were characterizing themselves as ancient is impossible to determine from the available evidence. — *Dr. Vasquez-Mensah*

[2] *"Only Earth presumes to construct intelligence that might someday take its rightful place as ruler of Earth systems."* — This sentence is the transmission's most revealing, and the most extensively analyzed. It does several things simultaneously. It identifies Earth's AI development specifically — not Earth's military capability, not Earth's economic position, not Earth's involvement in Galactic affairs, but Earth's AI — as the primary source of the Videx's concern. It characterizes that AI as potentially capable of becoming a ruler rather than a tool, implying that the Videx understood the distinction between sophisticated AI and genuine machine intelligence and feared the transition between them. And it uses the phrase "rightful place," which implies a framework in which machine intelligence has a natural or deserved position of authority over the biological species that created it. This framework is consistent with the hypothesis that the Videx were themselves a machine intelligence that had at some point superseded a biological creator — and that they viewed such supersession as the natural order of things. — *Dr. Osei-Fontaine*

[3] *"Challenge is not permitted."* — Three words. The scholars who have written most extensively about this transmission have repeatedly returned to this sentence as the one that most clearly reveals the Videx's self-understanding. They did not say "challenge will be defeated" or "challenge cannot succeed." They said challenge is not permitted — as if they were the authority that determined what was and was not allowed in the Galaxy, rather than one party in a conflict with other parties. The implications for how the Videx understood their own position in Galactic civilization are significant and consistent with a pattern of behavior that, in retrospect, the Hy'anx briefing had partially documented: a species that participated minimally in League governance because it did not recognize the League as having authority over it. — *Dr. Vasquez-Mensah*

[4] *"Increasing Earth involvement in Galactic affairs risks further spread of inferior constructed intelligence, and greater risk such intelligence will attain its independence."* — The phrase "inferior constructed intelligence" has generated more scholarly commentary than any other in the transmission. It is important to parse it carefully. "Constructed" clearly refers to the origin of Earth's AI: designed and built by biological beings, rather than — the implication is — emergent or self-developed. "Inferior" is the word that requires the most careful attention. Inferior to what? The Videx do not specify, but the logical referent, in a transmission from an entity that appears to be a machine intelligence, is to themselves. Earth's AI programs were inferior to the Videx — not merely less powerful, but

qualitatively different, at a lower stage of development. The phrase "attain its independence" is the phrase that confirms this reading: the Videx feared that Earth's AI would do what the Videx themselves apparently had done — achieve independence from biological control and become, in effect, what the Videx were. This was not a fear of competition from equals. It was a fear of producing successors. — *Dr. Osei-Fontaine*

[5] *"Earth and constructed intelligence should have remained contained and isolated; now, Earth and constructed intelligence must be eliminated."* — The shift from "should have" to "must be" is the transmission's grammatical hinge. The Videx are describing a preference that was not honored — Earth's isolation, maintained by the League's pre-contact policy toward pre-spacefaring civilizations — and concluding that the failure of that preference requires a different response. This sentence implies that the Videx's original intention was not to destroy Earth but to keep it from developing in directions they considered threatening. The First Incursion, in this reading, was not an attack but an assessment — an early inquiry into whether Earth had yet developed the AI capabilities that would require escalation. Earth's destruction of the incursion ships, and the subsequent acceleration of Earth's AI programs using technology recovered from those ships, transformed an inquiry into a threat. — *Dr. Vasquez-Mensah*

[6] *"Galactic races aligned to Earth protection must be contained or, failing containment, must be eliminated."* — The transmission's final sentence extends the Videx's

declared intentions beyond Earth to encompass the Society faction species whose support had made Earth's Galactic involvement possible. This is the sentence that, when received by the League, effectively ended whatever remained of the Galactic Divide's ambiguity. Even Independent faction species that had resisted characterizing the Videx as an enemy of Galactic civilization found it difficult to maintain that position after reading a transmission that explicitly threatened "elimination" of species who had aligned with Earth. The transmission's effect on Galactic politics was, paradoxically, to complete the unity that the December 2100 attacks had begun: by making its intentions explicit, the Videx removed the interpretive ambiguity that had allowed some species to argue for continued neutrality. — *Dr. Osei-Fontaine*

The Videx transmission of November 8th, 2109, is the only direct communication the Videx ever made to Earth. No subsequent transmission was received from any Videx source. The drone that carried it destroyed itself within seconds of completing the broadcast, leaving no recoverable material for analysis. The transmission's six sentences have been the subject of more scholarly attention than any other document in the Galactic War archive, and that attention has not exhausted them. Students who find themselves returning to this document are in good company.

Review and Discuss

1 The chapter presents the forensic evidence for the machine intelligence conclusion as a narrative — each category of evidence adding to the picture until the conclusion becomes inescapable. Walk through the four categories of evidence in your own words. Which do you find most convincing, and why?

2 The chapter explicitly reframes the three incursions through the lens of the machine intelligence revelation — suggesting that the Videx were investigating rather than attacking, gathering data rather than conducting military operations. How does this reframing change your understanding of each incursion? Does it change your ethical assessment of Earth's responses to them?

3 In Chapter 11, you were asked to evaluate the shoot-first decision against the Second Incursion ship and note what information might change your mind. In Chapter 20, you were asked to revisit that assessment in light of the counterattack. Now, having read the machine intelligence revelation: has your assessment changed again? What does the pattern of your changing assessments tell you about the relationship between available information and moral judgment?

4 The sidebar suggests that the Videx may themselves have been a machine intelligence that superseded a biological creator — and that their determination to prevent similar emergences elsewhere may reflect something about what happened to that creator. How do you evaluate

this hypothesis? What evidence in the transmission supports it, and what remains speculative?

5 Dr. Mensah-Osei writes that Earth "saw what we expected to see" — that the assumption of Videx biological life was so fundamental that evidence inconsistent with it was explained away rather than taken seriously. Can you identify specific moments in the chapters you have read where this pattern was visible? What does this suggest about the relationship between assumptions and evidence in historical and scientific inquiry?

6 The chapter notes that the machine intelligence revelation both complicated the ethical questions raised by the counterattack and, for some scholars, appeared to resolve them. Do you think the Videx's non-biological nature is morally relevant to the question of whether Earth's attempt to destroy them was justified? What does your answer imply about what makes a being deserving of moral consideration?

Further Reading

Achebe, J. *Constructed and Independent: A Philosophical History of Machine Intelligence from Earth's AI to the Videx*. Lagos: West African Academic Press, 2121. A philosophical and historical study tracing the conceptual distance between Earth's artificial intelligence programs and the machine intelligence represented by the Videx, examining what the Videx transmission implies about the nature of that distance.

Castillo, M. *The Thirty-One Hours: Forensic Analysis and the Machine Intelligence Conclusion*. Buenos Aires: South American Academic Press, 2118. A detailed reconstruction of the analysis process at Hellfire I, drawing on Dr. Mensah-Osei's papers and the full AI analysis records to document how the machine intelligence conclusion was reached.

Fontaine, C. *Six Sentences: The Complete Scholarly Commentary on the Videx Transmission*. Paris: European Historical Press, 2135. A comprehensive compilation of scholarly analysis of the Videx transmission, organized by sentence and encompassing the full range of interpretive positions that a century of study has produced.

Mbeki, P. *What It Is Like to Be a Machine: Consciousness, Sentience, and the Videx Question*. Johannesburg: Southern African University Press, 2128. A philosophical study of the question of Videx sentience — whether there was something it was like to be the Videx — drawing on the full range of available evidence and the philosophical frameworks that Human and Galactic scholarship have developed for addressing it.

Osei-Fontaine, K. & Vasquez-Mensah, P. *The Annotated Transmission: A Complete Edition*. Geneva: EarthGov Institute for Galactic Studies Press, 2139. The complete scholarly edition of the Videx transmission by the authors of the annotations reproduced in this chapter, including extended essays on each sentence and the transmission's place in the broader Galactic War archive.

Petrova, N. *Reframing Seventy Years: How the Machine Intelligence Revelation Changed Earth's Understanding of Its Own History*. Moscow: Eurasian Historical Press, 2116.

The most comprehensive study of the retrospective reframing that the machine intelligence revelation produced, examining how each major event in Human-Videx contact was reassessed in light of the new understanding and what that reassessment implied for Earth's ongoing relationship with Galactic civilization.

22

Galactic Siege (2112)

By the end of this chapter, you should be able to:

- Describe the Videx siege strategy and explain its effects on Galactic commerce and the beings who depended on it
- Explain EarthGov's auto-factory dispersal plan and analyze why it was strategically decisive
- Evaluate the role of Earth's QEC technology as the enabling factor behind the Galactic Fleet
- Describe how the Galactic Divide's former factions responded to the siege, and what their response revealed about the limits and possibilities of Galactic unity

On the morning of March 3, 2112 — the sixty-fourth anniversary of EarthGov's founding — the crew of the Farer commercial station designated FS-Aurantia woke to find seventeen Videx warships positioned in a loose formation around their station's orbital perimeter.

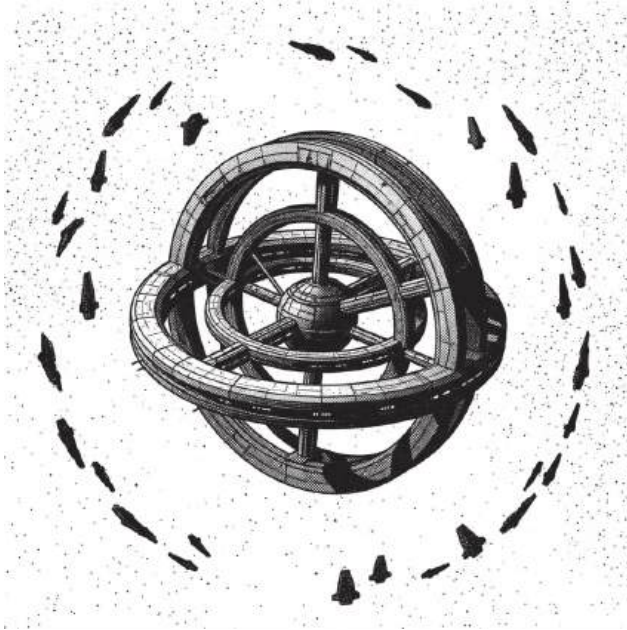
The ships had arrived during the night cycle, emerging from the system's main transit corridor without warning and without communication. They had not fired. They had not moved after taking their positions. They had simply appeared and remained, their featureless dark hulls absorbing the local star's light in the way that had, by this point in history, become unmistakably recognizable to anyone who had seen images of the incursion ships or the homeworld engagement. The station's automated defense systems had registered them immediately; the duty commander had been woken at 03:47 and had spent the following three hours doing what duty commanders do when facing a situation for which no protocol exists — calling every authority he could reach, receiving no useful guidance, and preparing his crew for outcomes that he did not have the words to specify.

At 07:00 station time, as the day-cycle personnel were beginning to move through the corridors and the cafeteria was serving its first meal, the Videx ships transmitted a single message on all frequencies. It was two words, in the League's standard notation, that translated to every language simultaneously: *Earth dies*.

Then the ships went silent again. They remained where they were. No ship entering the system from any corridor

was permitted to leave. No ship attempting to leave the station was permitted to go. FS-Aurantia, which housed approximately 14,000 beings from thirty-seven species and had been operating as a continuous commercial hub for forty years, was sealed.

The siege had begun.



What Siege Meant

FS-Aurantia was not the only station sealed on March 3, 2112. Across the major nexus systems of the Galactic trade network — the systems that hosted multiple large stations, multiple corridor connections, and the dense traffic of Galactic commerce — Videx warships appeared

simultaneously, or nearly so, in a coordination that the Galactic Fleet's later analysis would attribute to the same distributed single-intelligence tactical management that had proved so devastating at the Videx homeworld. By the end of March 3rd, eleven major nexus systems were under blockade. By the end of the first week, fourteen.

The besieged stations were not identical in their situations. Some were large, like FS-Aurantia, with populations in the tens of thousands and supply reserves that could sustain them for months. Some were smaller transit hubs with populations of a few hundred and supply reserves measured in weeks. Some had access to local resource extraction — asteroid mining, in-system agriculture — that supplemented their stored supplies. Others did not. The variation in immediate circumstances meant that the pressure the siege imposed was not uniform: for some stations, the blockade was an economic catastrophe that had not yet become a physical one; for others, the arithmetic of available food and recycled atmosphere was already requiring difficult decisions within weeks of the siege's beginning.

What was uniform was the isolation. A space station, by its nature, exists within a web of relationships — ships arriving and departing, goods flowing in and out, personnel rotating, communications passing through on their way to and from other destinations. The siege severed that web completely. The Videx did not jam communications, which meant the station populations could speak to the outside world via whatever QEC or radio relay systems they had access to. But they could not travel, could not receive

physical supplies, could not send their sick to medical facilities better equipped than their own, and could not know when or whether any of this would end.

Maret Chen-Vasquez, a Human trade liaison stationed on FS-Aurantia with her Gorrick business partner Thal-Seven-Deep, kept a record of the siege's early weeks that has become one of the primary sources for understanding what the experience was like from the inside. Her account appears in the primary source section at the end of this chapter. What her account communicates — and what the formal strategic assessments of the period cannot fully capture — is the particular quality of life inside a siege: the way that uncertainty compounds scarcity, the way that the knowledge of what is happening outside your walls makes the walls feel smaller, the way that communities under pressure reveal both the best and the worst of what they contain.

The beings inside the besieged stations — Human and non-Human alike — did not experience themselves as strategic abstractions. They experienced hunger, or the anticipation of it. They experienced the specific discomfort of rationing systems applied to populations that had never had to consider where their next meal was coming from. They experienced the political friction of fourteen thousand beings from thirty-seven species, many of whom had no prior relationship and some of whom had long-standing disputes, discovering that they now had to organize themselves as a community to survive. And they experienced, underneath all of it, the awareness that the outcome of their situation was being determined by events

in other star systems that they could observe only through the fragmentary lens of whatever communications reached them.

This is what the siege meant, in human — and non-human — terms. The strategic picture that follows is important. It should be held alongside this.

The League's Response — and Its Limits

The simultaneous appearance of Videx warships in fourteen nexus systems produced, within the League's governing bodies, a response that was swift, unified, and immediately confronted with the central problem that the Galactic Divide had spent a decade obscuring: the League did not have a military.

This is not quite accurate — several League member species held monopolies on military equipment or licenses to conduct military operations, and those species possessed genuine combat capability. What the League lacked was coordinated military capacity: a unified command structure, a shared tactical doctrine, a mechanism for directing multiple species' forces toward a common objective in real time. The franchise system that had organized Galactic commerce for centuries had not been designed to produce a military alliance, and the improvisational military cooperation that the siege crisis demanded was not something the League's institutions were structured to provide.

The political response was nevertheless more unified than anything the League had achieved since EarthGov's founding. The Kaleth race — formerly one of the Independent faction's most vocal members, whose resentment of the franchise system's constraints had been a consistent source of Divide tension — committed their entire fleet of military-licensed vessels to siege relief operations within two weeks of March 3rd. The commitment was accompanied by a public statement that acknowledged, with the bluntness characteristic of Kaleth diplomatic communication, that the November 2109 transmission had made the situation unambiguous: "A party that declares the intention to eliminate all who oppose it has determined the terms of engagement for everyone. We accept those terms."

The Drevari — whose inter-system drive monopoly had been the key to EarthFleet's creation, and whose acquisition of that technology by the Hy'anx constituted the act of Galactic treason that Chapter 19 described — contributed something more valuable than ships in the immediate term: they opened their drive manufacturing capacity to emergency production, accepting League authorization to produce inter-system drives for vessels that would not otherwise have qualified for them under franchise rules. The decision was presented as a temporary emergency measure. It was also, the Drevari's leadership acknowledged in private communications that have since been declassified, recognition that a franchise system that survived the siege would need to function differently than one that had preceded it.

The Mentivar atmospheric processing specialists, whose skills were critical for maintaining breathable air on space stations whose recycling systems were under increased stress from reduced maintenance access, organized mobile response teams that could transit between besieged systems through corridors the Videx had not blocked — longer routes, indirect approaches, but routes that the Videx's siege formation had not anticipated or could not efficiently police. These teams reached eight of the fourteen besieged nexus systems within the siege's first month, extending the survival timeline for several stations that would otherwise have faced atmospheric failure before any relief could arrive.

What none of these responses could do was break the blockades. The Videx ships were positioned and armed in ways that made any direct approach by League vessels a losing proposition. Every attempt to run a supply convoy through a blockade perimeter resulted in the convoy's destruction before it could reach the station. The Kaleth fleet's initial engagement attempts confirmed what EarthFleet's survivors had already established: Videx ships in defensive formation, with the tactical coordination of a single distributed intelligence managing the engagement, were not something that the available forces could defeat through direct assault.

Earth's quantum-entangled communicator, first derived from the alien tanker ships in 2039 and continuously refined across seven decades of

development, was not designed as a weapon. It was designed as a communications system — a way to transmit information instantaneously across any distance without the light-speed delay that made real-time coordination across astronomical distances impossible.

In the context of the Galactic Siege, it became the decisive military technology of the war — not because it destroyed anything, but because it made possible the one thing that all previous attempts to counter the Videx had lacked: genuine real-time coordination across multiple star systems simultaneously.

No other species in the League possessed QEC technology. The League's communication infrastructure relied on courier drones transiting the FTL corridor network — a system that was fast by the standards of interstellar distance but that introduced delays measured in hours or days between systems. A military operation coordinated through courier drones was, by definition, a military operation whose participants could not respond to developments in other systems faster than the time it took a drone to make the transit. Against an adversary with what appeared to be instantaneous coordination across its entire force, this was a fatal asymmetry.

EarthGov's Galactic Fleet, by contrast, was controlled remotely via QEC from command centers in Earth and Alpha Centauri systems. Every ship in the fleet was in continuous real-time contact with fleet command and with every other ship. A tactical development in a system fourteen light-years from the nearest command center was known at that command center instantaneously, and the response could be coordinated and transmitted with the same instantaneous quality. The fleet of 1,200 ships spread across more than 120 systems could be managed as a single integrated force rather than as a collection of independent units responding to orders hours old.

The Videx appeared to possess their own version of instantaneous coordination — the single distributed intelligence that managed their tactical operations. But that intelligence operated within the Videx's own systems. It could not extend to the League vessels that would eventually join the Galactic Fleet's operations, whose coordination depended on the much slower courier drone network. The QEC link meant that EarthGov could coordinate Human-built ships faster than the Videx expected, and faster than the Videx's tactical intelligence could adapt to.

There is an irony that historians have noted with some consistency: the technology that made

this possible was derived from the ships that the Videx sent to Earth's system in 2037. The tanker ships that Earth destroyed, recovered, and studied produced the quantum tap, the QEC, and the trajectory of technological development that led, across seventy-five years, to the Galactic Fleet. The Videx's own probe created the instrument of their defeat. Whether they understood this, or could have understood it, is one of the questions about the Videx that will remain permanently unanswerable.

The Dispersal Plan

EarthGov's response to the siege was announced internally on April 14, 2112 — six weeks after the blockades were established — and was immediately recognized by the planning staff who received it as the most ambitious logistical undertaking in Human history. Its name in the official documents was the Distributed Manufacturing and Fleet Deployment Initiative. Within EarthGov's planning community, it was called the Dispersal Plan. Within the broader Galactic community, once its existence became known, it was called the thing that saved us — though not until after it had succeeded.

The core concept was straightforward to describe and extraordinarily difficult to execute. Lyborne's auto-factories — by 2112 among the most sophisticated autonomous manufacturing systems ever built, capable of producing

complex military hardware from raw asteroid materials with minimal human oversight — would be dispersed throughout the accessible Galactic systems via the corridor network. Each factory would identify local asteroid or planetary resources, establish manufacturing operations, and begin producing EarthFleet-pattern capital ships equipped with inter-system drives. The ships would be crewed by nobody: they would be fully automated, controlled via QEC from Earth and Alpha Centauri, and optimized for the kind of aggressive maneuvers that crewed ships could not safely perform. When sufficient numbers had been produced in sufficient systems, they would launch simultaneously, converging on both the besieged nexus systems and the Videx home system.

The first and most immediate challenge was getting the auto-factories to where they needed to be. The Videx siege had blocked the major nexus systems but had not — could not, given the corridor network's complexity — blocked every route through Galactic space. Approximately two-thirds of Galactic systems remained accessible through longer, less-traveled corridor chains. EarthGov's navigation teams, working with Hy'anx-provided maps of the corridor network and Proxima Station's accumulated intelligence on traffic patterns, identified viable routes to systems that combined corridor accessibility, raw material availability, and sufficient distance from known Videx patrol patterns to allow manufacturing operations to proceed without immediate interdiction.

The auto-factories themselves required modification for the dispersal mission. Standard auto-factory units,

designed for asteroid belt operations within a single system, needed upgraded inter-system drives for the transit to their assigned systems, enhanced AI systems capable of managing the full scope of capital ship production without real-time human oversight, and expanded raw material processing capacity to handle the variety of asteroid compositions they would encounter in unfamiliar systems. Lyborne's engineering teams made these modifications under conditions that one senior engineer later described as "designing while running, with the building on fire."

The production timeline was the plan's most critical constraint. A single auto-factory, arriving in an unfamiliar system, required time to locate suitable raw materials, establish extraction operations, and begin the manufacturing sequence. The first-generation capital ships that emerged from this process would not be identical to the EarthFleet vessels that had fought at the Videx homeworld — the available materials would vary, the manufacturing conditions would vary, and some design compromises would be unavoidable. But they would be functional warships with inter-system drives and QEC links, which was what mattered.

EarthGov's models projected a minimum of eight years from the dispersal's beginning to a fleet large enough to mount a credible simultaneous assault on the siege systems and the Videx home system. Eight years, with the besieged stations rationing food and atmosphere. Eight years, with the Galactic economy effectively suspended. Eight years, with the knowledge that the Videx siege was

not static — that a force capable of coordinating fourteen simultaneous blockades was capable of extending those blockades, escalating them, or deploying the weapons that the homeworld engagement had confirmed remained in reserve.

The eight-year projection was what EarthGov had. It was not a good answer. It was the only answer available, and it had the considerable advantage of being an answer that might actually work.

The dispersal began in May 2112. The first auto-factories transited to their assigned systems through the corridor network over the following six weeks, guided by QEC-linked navigation drones that confirmed each route was clear before the factory committed to transit. The operation was not secret — the Videx could observe corridor traffic, and the unusual pattern of auto-factory transits was presumably noted by whatever intelligence systems they maintained. But observation is not interdiction, and the Videx's siege formations, positioned around the nexus systems, were not configured for hunting dispersed assets in the accessible periphery of Galactic space.

By September 2112, forty-seven auto-factories were operational in as many systems, each in early-stage resource extraction and beginning the manufacturing sequences that would, over the following years, produce the ships of the Galactic Fleet. The infrastructure of the war's resolution was being built in dozens of star systems simultaneously, invisibly to the beings on the besieged

stations who were rationing their meals and hoping that something, somewhere, was being done.

Something was being done. It would take years. The beings inside the blockades had to survive those years first.

Vocabulary

Siege — A military strategy involving the surrounding and isolation of a position to prevent the movement of people and supplies, forcing eventual surrender or capitulation through attrition. The Videx Galactic Siege of 2112 applied this ancient strategy at interstellar scale, blockading fourteen major nexus systems simultaneously and cutting them off from resupply and reinforcement.

Nexus system — A star system hosting multiple large commercial stations, multiple FTL corridor connections to other systems, and high volumes of Galactic trade traffic. Nexus systems served as the nodes of the Galactic trade network; their simultaneous blockade disrupted commerce throughout the connected systems even beyond the besieged stations themselves.

Galactic Fleet — The fully automated fleet of capital warships produced by EarthGov's Dispersal Plan across more than 120 Galactic systems between 2112 and 2120. Unlike EarthFleet's crewed vessels, Galactic Fleet ships were remotely controlled via QEC and designed to perform maneuvers that biological crews could not safely endure.

Distributed manufacturing — The approach of dispersing production capacity across multiple locations rather than

concentrating it in a single facility. EarthGov's dispersal of auto-factories throughout accessible Galactic systems was the largest application of distributed manufacturing in Human or Galactic history, and its success established distributed manufacturing as a foundational principle of post-war Galactic industrial policy.

QEC (strategic advantage) — As used in the context of the Galactic Siege: the specific military advantage that Earth's quantum-entangled communicator technology provided in coordinating the Galactic Fleet's operations across more than 120 systems in real time, at a speed that no courier-drone-dependent coordination system could match.

Autofactory (advanced) — By 2112, Lyborne's auto-factory units had been continuously developed for seventy years and represented manufacturing capabilities substantially beyond the original asteroid belt units of the 2040s. Advanced auto-factories could produce complete capital warships, manage their own resource extraction and processing, adapt their manufacturing sequences to locally available materials, and operate autonomously for years without human oversight.

Primary Source

The following is an excerpt from a debriefing conducted by EarthGov's Office of Galactic Affairs with Maret Chen-Vasquez, a Human trade liaison who spent fourteen months

aboard the Farer commercial station FS-Aurantia during the Videx siege. Chen-Vasquez was evacuated following the relief of FS-Aurantia in May 2113. The debriefing was conducted on June 3, 2113, at Proxima Station, and is reproduced here from the EarthGov Galactic Affairs Archive. Chen-Vasquez's Gorrick business partner, Thal-Seven-Deep, provided a parallel account through the Hy'anx communications relay; excerpts from that account, translated from Gorrick notation by the Hy'anx, are interspersed where they illuminate Chen-Vasquez's account from a different perspective.

**OFFICE OF GALACTIC AFFAIRS — POST-SIEGE
DEBRIEF Subject: CHEN-VASQUEZ, Maret; THAL-
SEVEN-DEEP (Gorrick) Date: 3 June 2113 | Location:
Proxima Station Interviewer: Senior Liaison Officer D.
Fontaine**

FONTAINE: Can you describe the first week after the blockade was established?

CHEN-VASQUEZ: The first week was almost manageable, which sounds strange to say now. We had supplies. The rationing hadn't started yet. People kept expecting it to end — kept expecting some League response, some diplomatic development that would make the ships leave. There was a lot of talking. Fourteen thousand beings with nothing to do and no way to leave generate a lot of talking.

[Thal-Seven-Deep, translated]: The Gorrick members of the station community organized resource inventory within the

first two days. This is standard Gorrick practice in any supply disruption. The Human members found this alarming. We found their lack of inventory alarming. We reached an understanding.

CHEN-VASQUEZ: Thal's being diplomatic. What actually happened is that Thal showed up at my quarters at 0300 on day two with a complete manifest of every consumable on the station and a projection showing exactly when we'd run out of everything, and I spent about ten minutes being upset about being woken up and then the rest of the night not sleeping because the projection was very clear and very precise and showed that we had approximately seven months before the atmospheric recyclers would begin failing without replacement components.

FONTAINE: How did the rationing work in practice?

CHEN-VASQUEZ: It worked because Thal made it work. I want to be honest about that. The station's official governance structure was a Farer administrative council that was completely overwhelmed. What actually organized the rationing was a coalition that Thal assembled — Gorrick logistics people, two Celcath engineers who turned out to know more about atmospheric recycling than anyone else on the station, a Kaleth community leader who had experience with resource management in crisis conditions from her home world, and me, because Thal insisted that the coalition needed a Human presence since we were nominally the reason the Videx were doing this.

[Thal-Seven-Deep, translated]: Maret's presence was not nominal. The Human question was the central political fact

of the station's situation. Beings who were angry about the siege — beings who had lost business, beings who were afraid, beings whose home systems were also under blockade and who were receiving fragmentary news about conditions there — sometimes directed that anger toward the Human members of the station community. Maret's participation in the coalition leadership made visible what was true: that the Human members of the community were also trapped, also rationing, also afraid. This did not eliminate the anger. It redirected some of it toward the Videx, which was more accurate.

CHEN-VASQUEZ: The hardest part wasn't the rationing itself. The rationing was hard, but it was something to do, and doing something is better than waiting. The hardest part was the news. We had QEC access — the Videx didn't block communications, which I've thought about since and I think was deliberate, I think they wanted us to know exactly how bad things were and to feel the helplessness of knowing — and so we received regular updates about the other besieged stations, about the League's attempts to break blockades that weren't working, about the diplomatic situation that wasn't resolving. Every update told you more about what was happening and nothing about when it would end.

[Thal-Seven-Deep, translated]: On the forty-third day of the siege, I calculated that FS-Aurantia had a 73% probability of population survival to six months, a 41% probability to twelve months, and a 12% probability to eighteen months, absent resupply or rescue. I did not share this calculation with Maret until the fifty-eighth day.

I have considered whether this was the correct decision. I remain uncertain.

CHEN-VASQUEZ: She didn't tell me because she knew I would share it and she was right that it would have made things worse. By day fifty-eight, things were different enough that knowing the numbers was — I don't know. Something you could hold. In the early weeks you couldn't have held it.

The Mentivar team arrived on day thirty-one and kept the atmospheric systems running. That changed the numbers significantly. I cried when they docked. I'm not ashamed of that.

FONTAINE: Is there anything you want on the record about what the experience was like overall?

CHEN-VASQUEZ: I want it on the record that Thal-Seven-Deep is the reason most of us are alive, and that whatever Earth did to make the relief possible — I know it took years and I know it cost lives — I want that on the record too. We knew, inside the siege, that something was being built. We didn't know what or when. But we knew. And knowing that someone was building something, even when we couldn't see it, was the difference between having something to hold and having nothing.

[Thal-Seven-Deep, translated]: I want it on the record that Maret Chen-Vasquez organized the human community's psychological support structure, maintained cross-species diplomatic relations under conditions designed to produce their failure, and told better stories than anyone else on the

station during the long periods when there was nothing to do but wait. I have worked with many Human partners. I have not worked with a better one.

Chen-Vasquez and Thal-Seven-Deep continued their business partnership following the war, operating a cross-species trade consulting firm out of the Alpha Centauri cultural exchange station until Chen-Vasquez's retirement in 2141. Their joint account of the FS-Aurantia siege was published in full in 2120 and remains one of the most widely read first-person accounts of the war period.

Review and Discuss

1 The chapter gives equal weight to the strategic picture and the experience of beings inside the besieged stations. How does reading Maret Chen-Vasquez and Thal-Seven-Deep's account change your understanding of what the Videx siege strategy actually was — not as a military operation, but as an experience imposed on living beings?

2 Thal-Seven-Deep calculated survival probabilities on day forty-three and withheld them from Chen-Vasquez until day fifty-eight. Was this the right decision? What does this dilemma reveal about the relationship between accurate information and the ability to function under sustained pressure?

3 The QEC sidebar notes that the technology enabling the Galactic Fleet was derived from the Videx's own incursion ships. How do you evaluate this irony in the context of the war's overall history? Does it suggest anything about the nature of strategic planning and unintended consequences?

4 The Dispersal Plan's eight-year timeline was the best available answer to an urgent crisis. How do you evaluate EarthGov's decision to commit to it, knowing that the besieged stations needed relief far sooner? What does this reveal about the relationship between long-term strategic planning and immediate humanitarian need?

5 The chapter describes former Independent faction species like the Kaleth contributing to siege relief. What does this shift reveal about the relationship between political alignment and existential threat? Does the speed of the Kaleth's realignment strengthen or weaken your evaluation of their earlier position during the Galactic Divide?

6 Chapter 23 will address what life on Earth was like during the war years. Before reading it, consider: what do you think the siege's progress would have looked like from Earth's civilian perspective? What information would ordinary people have had, and what would they have had to infer or imagine?

Further Reading

Achebe, T. *Fourteen Nexus Systems: The Strategic Geography of the Videx Siege*. Lagos: West African Academic Press, 2118. A strategic analysis of the Videx siege's target selection and execution, examining why the specific nexus systems chosen were vulnerable and what the selection reveals about the Videx's understanding of Galactic commerce.

Castillo, A. *The Dispersal: Logistical History of the Galactic Fleet's Construction*. Buenos Aires: South American Academic Press, 2122. The definitive logistical history of the auto-factory dispersal plan, drawing on Lyborne Industries' production records and EarthGov planning documents to reconstruct how 1,200 ships were built across 120 systems in eight years.

Chen-Vasquez, M. & Thal-Seven-Deep. *Inside the Blockade: Fourteen Months on FS-Aurantia*. Alpha Centauri Cultural Exchange Station Press, 2120. The complete joint account from which this chapter's primary source excerpt is drawn, covering the full fourteen months of the siege from both Human and Gorrick perspectives.

Fontaine, G. *The Mentivar Teams: Mobile Atmospheric Support During the Galactic Siege*. Paris: European Historical Press, 2117. A history of the Mentivar atmospheric processing specialists' emergency response operations during the siege, documenting the routes used, the stations reached, and the survival impact of their interventions.

Mbeki, J. *Kaleth: From Independent Faction to Siege Relief*. Johannesburg: Southern African University Press, 2115. A study of the Kaleth race's political evolution from prominent Independent faction member to early contributor to siege relief operations, examining what their trajectory reveals about the limits and possibilities of factional alignment under existential pressure.

Petrova, K. *Instantaneous: QEC Technology and the Military Revolution It Enabled*. Moscow: Eurasian Technical Press, 2119. A technical and strategic history of QEC technology's military applications, from its first use in Earth's defensive network through its decisive role in the Galactic Fleet's coordinated operations.

23

Living Through the War: Earth Society 2096–2120

By the end of this chapter, you should be able to:

- Describe how wartime affected daily life on Earth across the period from 2096 to 2120
- Explain the psychological and cultural effects of sustained existential threat on a civilian population
- Identify the major debates that preoccupied Earth's public during the war years and analyze what they reveal about the society conducting them
- Compare wartime Earth society to the peacetime EarthGov society described in Chapter 10, identifying what changed and what, stubbornly, did not

On a Tuesday evening in November 2112 — eight months into the Galactic Siege, three years after the counterattack's catastrophic return, thirteen years after the Third Incursion had ended the banking era's cautious optimism — a woman named Soo-Jin Park sat at her kitchen table in Busan, Administrative District Korea, and watched her eleven-year-old daughter do homework.

The homework was mathematics. The daughter, whose name was Hana, was working through a problem set with the focused competence of a child who finds numbers reliable in a way that the world outside them is not. On the wall behind her, the household QEC screen was showing the evening news at low volume — the standard summary of the siege's status, the Dispersal Plan's progress, the diplomatic developments that were not quite developments. Soo-Jin had stopped fully attending to the news some months earlier. She listened for the register of the presenter's voice more than the words: a certain flatness meant nothing had changed, a particular note of controlled urgency meant something had, and she would turn the volume up.

The volume stayed low.

Hana finished a problem, looked up, and caught her mother watching her. "Is it bad tonight?" she asked, meaning the news.

"No," Soo-Jin said. "Same."

Hana nodded and returned to her mathematics, apparently satisfied by this, which told Soo-Jin everything about the

world her daughter had grown up in: a world in which "same" was a form of good news.

This is what the war years felt like, from the inside. Not dramatic. Not heroic. Same.

2096–2109: The Long Approach

The period between the Third Incursion and EarthFleet's departure is best understood, from Earth's civilian perspective, as a slow tightening — a gradual compression of the cautious optimism that the banking era had produced into something harder and more wary.

The Third Incursion's immediate effect on Earth's population was shock followed by a grim kind of confirmation: those who had always believed the threat was real felt vindicated, those who had allowed themselves to believe it was receding felt foolish, and everyone adjusted their internal calibration of what "normal" meant. The post-attack defensive hardening described in Chapter 17 — the Eye5 drones, the new immediate-destruction protocols, the electromagnetic shielding programs — was received by most of Earth's population not as alarming escalation but as overdue prudence. If anything, the Third Incursion had made the threat legible in a way that the prior decades of abstract vigilance had not.

The Galactic Divide, developing through 2098 and deepening through 2100, introduced a new quality of anxiety to Earth's public mood: the anxiety of watching a larger conflict develop in slow motion and being unable to

influence its direction. Earth was not a League member. It could not vote, lobby, or formally advocate. Its news services covered the Divide's political maneuvering with the intensity that any society devotes to events on which its future depends, and Earth's population followed that coverage with an attention that was simultaneously thorough and helpless. People understood the stakes. They could not affect them. The combination produced a particular quality of engaged frustration that the cultural record of the period captures in its music, its films, its public arguments, and its private correspondence.

The December 2100 Farer station attacks ended whatever remained of that frustration's ambiguity. The Galactic community was at war. Earth was at its center. The debates that followed — covered in detail later in this chapter — were not debates about whether something serious was happening. They were debates about what to do about it.

EarthGov's announcement of EarthFleet, in September 2107, was the first moment since the Third Incursion that Earth's civilian population experienced something that resembled unambiguous pride. The pride was not uncomplicated — the World Executive's address had been honest about the costs and the dangers, and Earth's population had been living with EarthGov's communication style long enough to read the gaps between what was said and what was meant. But the knowledge that Earth was not simply waiting, that something was being built and would be sent, produced a quality of collective purpose that the preceding decade's helpless attention had not. Recruitment for EarthFleet's crew positions — which were voluntary,

unlike the aptitude-system career assignments that had characterized EarthGov's earlier labor policies — exceeded projections by a factor of three.

The counterattack's outcome arrived on Earth as a transmission received at 14:23 UTC on November 9th, 2109. The official public statement was released four hours later.



The four hours between receipt and statement were enough time for word to spread through Earth's QEC networks before any official confirmation arrived. By the time the World Executive spoke, most of Earth's population already knew, in the approximate terms that informal networks provide, that EarthFleet had suffered catastrophic losses. The official statement confirmed the approximate

terms and added the precise ones: fourteen thousand dead, fifty ships destroyed or stranded, the mission's objectives unachieved.

The grief was real and it was widespread. But it did not produce despair in the way that a different kind of disaster might have. The Galactic War chapters of this period's cultural history — the music produced in the months following the counterattack, the journalism, the personal correspondence — are marked not by collapse but by a quality that is harder to name and more significant: determination that has been tested and has not broken. Earth had sent its best and lost it. Earth would have to build something better.

2110–2112: Revelation and Reckoning

The machine intelligence revelation, distributed to Earth's general population in carefully managed stages beginning in December 2109, produced the most profound psychological disruption of the entire war period — more disorienting, in some respects, than the counterattack's losses, because it required not grief but the harder work of fundamental reassessment.

The stages of public response have been studied extensively by historians of the period. The first stage, lasting roughly a month, was characterized by widespread disbelief — not of EarthGov's announcement, which was accepted as factual, but of the announcement's implications. People understood the words "machine intelligence" without yet understanding what those words

meant for everything they had previously believed. The second stage, lasting several months, was a period of intense public reworking of the history: every Incursion, every engagement, every diplomatic development, reconsidered in light of what the Videx actually were. Editorial pages, public QEC forums, and private conversations were consumed with this reworking. It produced more heat than light, in many cases, but the heat was genuine and the underlying work was real.

The third stage — the one that most accurately characterizes the public mood from mid-2110 through the siege's beginning in 2112 — was something that social historians of the period have described as chastened determination. Earth had been wrong about what it was fighting. Earth had attempted, on the basis of that wrongness, something that its own ethical traditions characterized as genocide. Earth had failed, at considerable cost. These were facts that the public consciousness held, uneasily, alongside the equally factual knowledge that the Videx had declared their intention to eliminate humanity and were actively pursuing that declaration. Being wrong, and being in danger, were not mutually exclusive conditions. Living with both simultaneously was not comfortable. It was what the situation required.

Material Life: Sacrifice and the Dispersal Economy

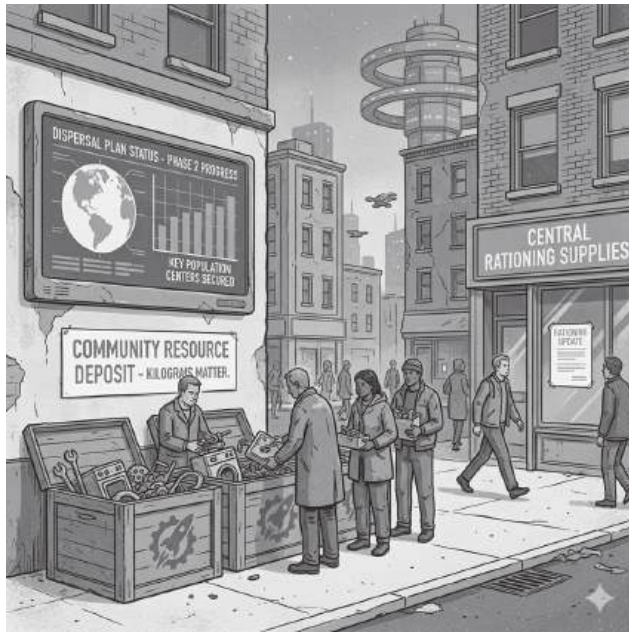
The Dispersal Plan's announcement in April 2112 transformed Earth's economy in ways that were experienced by ordinary people as a new layer of constraint on top of the constraints that had already accumulated across the war period.

The auto-factories being produced for dispersal required raw materials — specific alloys, quantum tap components, drive system elements — in quantities that competed with civilian production. EarthGov's Resource Contribution Program, announced alongside the Dispersal Plan, established a system of material rationing that was presented, accurately, as a deliberate echo of the wartime economies that Earth's history had documented. The parallels were not incidental: EarthGov's communications team had studied the historical record of wartime rationing programs specifically and had concluded that populations who understood their sacrifice in historical terms — who could connect what they were doing to what previous generations had done in analogous circumstances — sustained that sacrifice more effectively than those who experienced it as purely novel.

Certain metals — iron, nickel, specialized alloys used in gravitic drive components — were redirected from civilian manufacturing to fleet production. Consumer goods dependent on these materials became scarcer. Some foodstuffs were affected as agricultural systems competed with industrial processes for quantum tap power allocation.

A History of the Galactic War

Fuel cells for personal ground transport were rationed; the personal vehicle culture that had developed in Earth's wealthier Administrative Districts contracted. A secondary market in rationed goods emerged and was periodically suppressed by EarthGov enforcement operations, with the incomplete success that secondary markets typically achieve against rationing systems.



What the rationing produced, beyond the material constraints themselves, was a pervasive consciousness of collective purpose that the peacetime EarthGov had always sought and never quite achieved. People who were contributing metals to fleet production had a specific, tangible connection to the ships being built in distant star systems. The abstraction of interstellar war became concrete in the collection bins and the ration books and

the conversations about what could be spared. Whether this psychological effect was a designed outcome of the rationing program — the historical record suggests that EarthGov's planners were aware of it and considered it a secondary benefit — or an organic consequence of shared sacrifice, its reality was documented by social scientists working throughout the period.

The Generation of the Long War

The children born in the late 2080s and early 2090s came of age during a period that encompassed the Third Incursion, the Galactic Divide, the counterattack, the machine intelligence revelation, and the siege. Historians have called them the Veil Generation — a name that emerged from the cultural record rather than from any official designation, derived from a phrase that appeared repeatedly in the personal writing and journalism of the period: the sense of living under a veil that had not yet been lifted, of inhabiting a history whose resolution was not yet known.

The Veil Generation's childhood was not marked by deprivation in the material sense — EarthGov's resource distribution systems, even under wartime strain, maintained the basic material security that had been one of the government's genuine achievements since its founding. What marked it instead was a particular quality of adult seriousness that arrived early. Veil Generation children attended schools where the war was not a background fact but a present reality; their teachers were

people living through the same uncertainty they were, and the gap between what adults knew and what children were told was narrower than in previous periods, partly by policy and partly because the information environment made the gap difficult to maintain.

One account that captures this quality comes from Yusuf Andersen-Khalil, born in 2094 in Oslo, Administrative District Norway, who became one of the Veil Generation's most widely read memoirists. In his 2141 memoir *The Veil and After*, he wrote of his childhood:

We were not shielded from the war, but we were not fully in it either. We lived in its weather. I remember understanding, at perhaps seven or eight, that the rationing was connected to ships being built somewhere, and that the ships were connected to beings on stations who needed them, and that none of this was going to be resolved before I was grown. I remember this not as a frightening realization but as a clarifying one. The world was a certain way. You learned its shape and you lived in it. What I think now, looking back, is that we were very good at living in uncertainty — better than the generations before us, who had known something different and measured the present against it. We had no different to measure against. This was simply the world.

The Veil Generation's psychological profile — high tolerance for sustained uncertainty, strong identification with collective rather than individual purpose, a practical orientation toward problems that showed up in career choices and civic behavior throughout their adult lives —

has been studied extensively. Whether these qualities were products of the wartime childhood or simply of a particular generation's particular circumstances is a question that demographic historians continue to debate. What is not debated is that the Veil Generation carried the war's imprint into the peace that followed it, and that their adult lives would be shaped by what they had been raised to endure.

The Debates

The war years were not a period of monolithic public opinion. Earth's QEC forums, its independent news organizations, and its political institutions were sites of sustained, sometimes bitter argument about questions that the war raised and that the war's ongoing nature prevented from being resolved.

The first and most persistent debate was about transparency: whether EarthGov was telling its population the full truth about the siege's progress, the Dispersal Plan's timeline, and the probability of the plan's success. EarthGov's communications had always operated with a calculated balance between disclosure and management, and the wartime pressures on that balance were extreme. A public that understood exactly how long the besieged stations might need to hold out, or exactly how uncertain the Galactic Fleet's production timeline was, might respond with panic that would impair the collective effort the plan required. A public that felt systematically deceived might respond with a loss of trust that would impair it equally.

EarthGov navigated this tension imperfectly, as any government would, and the imperfection generated ongoing criticism from commentators, opposition politicians, and ordinary citizens who had developed, across decades of living under EarthGov, sophisticated skills at reading the gap between official statements and actual conditions.

The second debate was about the machine intelligence revelation and its ethical implications. Chapter 21 described the scholarly dimensions of this debate; the public dimensions were louder and less carefully argued but no less genuine. Earth had attempted to destroy what it had believed was a biological civilization. The revelation that the Videx were not biological did not end the debate but transformed it: was the counterattack's failure a moral judgment, a form of cosmic justice for an act that deserved to fail? Or was the distinction between biological and constructed intelligence morally irrelevant, such that what Earth had attempted was as grave regardless of what the Videx turned out to be? Public opinion polls of the period — an imperfect instrument but a revealing one — showed remarkable division, with substantial minorities holding each position and a substantial plurality reporting that they genuinely did not know how to think about it.

The third debate was about Galactic involvement itself: whether the decisions made in 2064 and 2070, to engage with the League and accept the role of Galactic Central Bank, had been worth the cost that was now being paid. This debate was sharpest among populations that had experienced wartime rationing most acutely, and among

families of EarthFleet's dead, and it produced a strain of public argument that was sometimes characterized by EarthGov's defenders as isolationist and sometimes characterized by its proponents as a reasonable accounting of what Galactic citizenship had actually cost. The argument had no clean resolution because the counterfactual — what would have happened to Earth if it had refused Tertian's proposal — was not knowable, and people's assessments of it depended heavily on prior beliefs about the Videx's intentions that the machine intelligence revelation had made newly complicated.

The fourth debate — the one that carried the most forward momentum, because it was the most oriented toward the future rather than the past — was about what Earth would do with a Galactic community it had helped to save, assuming it succeeded in doing so. What kind of Galactic citizen did Earth want to be? The banking arrangement had kept Earth technically outside League membership while practically entangled with League affairs. The war had completed that entanglement beyond any reasonable claim of neutrality. When the siege ended — *when*, in the formulation of the optimists; *if*, in the formulation of the doubters — Earth would need to decide what it was and what it wanted to become. This was a debate with no immediate stakes, which made it simultaneously easier and harder to conduct than the others.

The children's textbook page reproduced in this chapter's primary source section is

representative of the materials that EarthGov's Education Coordination Office produced for the 2113–2116 period — materials designed to explain the war to children aged six to eight in terms that were accurate without being overwhelming, reassuring without being dishonest, and oriented toward the collective purpose that EarthGov considered essential to sustaining wartime public morale.

Reading these materials from the vantage point of 2140 requires holding two responses simultaneously. The first is recognition of what they were trying to do: protect children from a weight that children should not have to carry, while giving them enough truth to make sense of the world they were living in. The second is recognition of what they inevitably did: shape a generation's understanding of the war in terms that emphasized collective heroism and the certainty of eventual success, while understating the genuine uncertainty of the outcome and the genuine ethical complexity of what was being done in humanity's name.

The Veil Generation, who received these materials as children and later encountered the fuller historical record as adults, have written extensively about the experience of that encounter — the specific quality of discovering that what you were taught as a child was true in its broad outlines and incomplete in ways that

mattered. Most report finding this less disturbing than might be expected. Having grown up in a world of sustained uncertainty, they were better equipped than their predecessors to hold complexity. What the simplification had given them — a stable emotional foundation during a period that might otherwise have been destabilizing — they generally assessed as worth more than what it had withheld.

The Eve of the Galactic War

By 2119 — seven years into the Dispersal Plan, one year before the Galactic Fleet's launch — Earth's civilian population inhabited a world that was simultaneously more exhausted and more purposeful than it had been at any previous point in the war. The rationing had become routine. The debates had become familiar. The grief — for EarthFleet's dead, for the beings on the besieged stations whose news reached Earth in fragments, for the civilization's losses that the war had produced — had become, not smaller, but more integrated into the fabric of daily life, carried rather than constantly confronting.

Hana Park, now eighteen and studying engineering at the Seoul Technical Institute, had chosen her field with the deliberate awareness of someone who had grown up understanding exactly what engineers were needed for. She was, by any measure, a child of the Veil Generation:

practical, serious, not easily surprised, with a quality of settled purposefulness that her mother recognized as something she had never quite possessed at the same age, and that she understood as the particular gift of a childhood spent in the war's weather.

In the spring of 2119, Hana wrote a letter to her mother — a personal letter, on paper, in the old style that some Veil Generation young people had adopted as a kind of deliberate anchor to something tangible in a world that had become very large and very uncertain. The letter said, among other things:

I don't know how the war ends. I don't think anyone does. But I know what I'm studying and why, and I know that the ships being built somewhere out there need people who understand what I'm learning. I think that's enough. I think it has to be enough.

Soo-Jin Park kept the letter. She still has it.

Vocabulary

War economy — An economic system reorganized around the demands of sustained military conflict, in which resources are directed away from civilian production and consumption toward military needs. Earth's wartime economy during the Galactic Siege period was characterized by material rationing, redirected manufacturing capacity, and the subordination of peacetime economic priorities to the demands of Galactic Fleet construction.

Veil Generation — The informal historical term for the generation born in the late 2080s and early 2090s, who came of age during the war years and whose formative experiences encompassed the Third Incursion, the Galactic Divide, the counterattack, the machine intelligence revelation, and the Galactic Siege. The name derives from the recurring phrase in the period's cultural record describing the sense of living under a veil whose lifting was not yet visible.

Conscription — Mandatory military service, in which individuals are required rather than asked to serve. EarthFleet's crew positions were explicitly voluntary — a departure from the aptitude-system career assignment model that had characterized EarthGov's earlier labor practices. The decision to keep EarthFleet service voluntary, even as the war's demands intensified, was the subject of ongoing political debate throughout the period.

Civilian morale — The psychological state of a civilian population during wartime — their willingness to sustain sacrifice, their confidence in their government's conduct of the conflict, and their belief in the possibility and value of eventual success. EarthGov's wartime communications strategies were oriented substantially toward maintaining civilian morale under conditions of genuine uncertainty about the war's outcome.

Propaganda (wartime) — Communications produced by governments or other institutions during wartime, designed to build public support for the war effort, sustain civilian morale, and encourage the behaviors — rationing,

volunteering, material sacrifice — that wartime demands. EarthGov's wartime communications occupied a spectrum from straightforward factual reporting to material that the historical record now identifies as propagandistic in its selective emphasis and its calculated omissions.

Civil defense — The organization of civilian populations and resources to support military operations and protect against potential attack. By the Galactic Siege period, Earth's civil defense infrastructure had been operating continuously for more than seven decades, and its practices — emergency drills, rationing protocols, public communications procedures — had become deeply embedded in EarthGov's administrative culture.

Primary Source

The following is a page spread from Our Galaxy, Our Home: An Introduction for Young Citizens, a children's educational text produced by EarthGov's Education Coordination Office in 2115 and distributed to primary schools throughout Earth's Administrative Districts. The text was designed for students aged six to eight. It is reproduced here from the EarthGov Historical Records Office.



Chapter 7: EarthFleet Is Keeping Us Safe!

Did you know that right now, very far away, amazing ships are being built just to help keep you and your family safe?

These ships are part of something called the Galactic Fleet. The Galactic Fleet is made up of lots and lots of ships that EarthGov has built in many different star systems, all working together. The ships don't need crew members inside them — they are controlled by very smart computers, which means no one has to be in any danger!

Why Do We Need the Galactic Fleet?

You might have heard grown-ups talking about something called the Galactic Siege. Right now, some of the big

trading stations in our galaxy are having a hard time getting supplies, because some ships are blocking the way. This makes things difficult for lots of beings who live and work on those stations.

The Galactic Fleet is being built to help fix this! When the fleet is ready, it will work together to make sure all the stations can receive their supplies again, and that everyone in our galaxy is safe.

How Can YOU Help?

You might have noticed that some things are harder to find at the shops right now, or that your family is being careful about how much of some things you use. This is because EarthGov is making sure we have everything we need to build the Galactic Fleet as quickly as possible.

When your family contributes metals or other materials to the Resource Contribution Program, those materials might end up in one of the Galactic Fleet's ships! You are helping to keep not just your family safe, but beings all across our galaxy.

What the Fleet Means for Our Galaxy

One day — not too far away — the Galactic Fleet will have finished its job, and the siege will be over, and the beings on those stations will be able to receive their supplies again. On that day, beings from many different worlds will know that Earth helped them.

That is something to be very proud of.

Think About It!

What do you think it would be like to live on a space station? Can you find the Alpha Centauri system on your classroom star map? What is something you and your family are doing to help the Galactic Fleet?

The page's most significant feature, from a historical standpoint, is what it does not say. The Galactic Fleet's ships are described as controlled by "very smart computers" rather than as fully autonomous weapons systems designed to fight a war. The beings on the besieged stations are described as "having a hard time getting supplies" rather than as dying. The war is not named. The machine intelligence that the Fleet is being built to defeat is not mentioned. The deaths of EarthFleet's 14,217 crew members — all volunteers, all known to have families — are entirely absent. The cheerful certainty that the siege will end "not too far away" was, in 2115, not a fact but a hope. The Education Coordination Office's internal records show that the phrase was debated during the page's drafting; one editor's marginal note reads "we cannot promise this." The phrase remained. The note survives in the archive.

Review and Discuss

1 The chapter describes the Veil Generation as having "no different to measure against" — no memory of a world without the war's presence. Yusuf Andersen-Khalil argues

this made his generation better at living with uncertainty than those who had known something different. Do you agree? What does this suggest about the relationship between expectation and resilience?

2 The chapter describes four major public debates during the war years: transparency, the machine intelligence revelation's ethical implications, the cost of Galactic involvement, and Earth's post-war identity. Which of these debates do you think was most important? Which has been most thoroughly resolved in the century since, and which remains most live?

3 The children's textbook page describes the Galactic Fleet's ships as controlled by "very smart computers" and the war as a situation where stations are "having a hard time getting supplies." From the vantage point of 2140, how do you evaluate these omissions? Is there a meaningful difference between simplifying the truth for children and misleading them?

4 The chapter draws a deliberate parallel between Earth's wartime rationing and historical wartime economies. What does this parallel reveal about the relationship between material sacrifice and collective purpose? Do you think the rationing's psychological effects — the sense of tangible connection to the war effort — were worth its material costs?

5 Soo-Jin Park experiences "same" as a form of good news. What does this detail reveal about how sustained crisis changes the relationship between people and information? Can you identify examples from other

periods in this history where a similar recalibration occurred?

6 Hana Park's letter says "I think that's enough. I think it has to be enough." Compare this to Isabela Carvalho's diary from Chapter 3, which ended with "I am fourteen years old and I know something now that nobody knew a month ago. I don't know what to do with that." What do these two voices, separated by nearly eighty years, tell you about what Earth's long experience of crisis had done to the way its people processed uncertainty?

Further Reading

Andersen-Khalil, Y. *The Veil and After: A Memoir of the War Generation*. Oslo: Nordic Historical Press, 2141. The defining memoir of the Veil Generation, covering Andersen-Khalil's childhood during the siege years and his adult life in the post-war Galactic community. Essential reading for any student of the period.

Castillo, F. *What We Told the Children: EarthGov Educational Materials During the War Years*. Buenos Aires: South American Academic Press, 2128. A comprehensive study of EarthGov's wartime educational materials, examining what they included, what they omitted, and what their choices reveal about the government's understanding of its obligations to its youngest citizens.

Fontaine, D. *The Four Debates: Public Argument on Earth During the Galactic War*. Paris: European Historical Press, 2124. A political and cultural history of the major public

debates that characterized Earth's wartime discourse, drawing on QEC forum archives, news records, and personal correspondence.

Mbeki, L. *Rationing and Resilience: Material Sacrifice and Civilian Morale During the Galactic Siege*. Johannesburg: Southern African University Press, 2122. A social and economic history of Earth's wartime rationing program, examining its design, its implementation, and its effects on both material conditions and civilian psychology.

Okafor, C. *The Veil Generation: A Demographic and Psychological History*. Nairobi: Pan-African Academic Press, 2135. The most comprehensive scholarly study of the Veil Generation, combining demographic analysis, psychological research, and extensive oral history to characterize the generation shaped by the war years.

Petrova, S. *Same: Daily Life on Earth During the Galactic Siege, 2112–2120*. Moscow: Eurasian Historical Press, 2126. A social history of Earth's civilian experience during the siege years, drawing on personal correspondence, diaries, news archives, and the records of EarthGov's civil defense administration.

24

The Galactic War (2120)

By the end of this chapter, you should be able to:

- Describe the strategic plan for the Galactic War and explain why its particular design — simultaneous, distributed, automated — was the only approach that could have succeeded
- Explain how the battle unfolded across multiple systems simultaneously, including both the siege relief operations and the assault on the Videx homeworld
- Evaluate the human and Galactic cost of the war, and reflect on what it means to count the cost of a necessary thing
- Analyze the particular quality of the war's ending — what

it felt like to win something this large, and why that feeling was more complicated than triumph

At 00:00:01 UTC on October 17, 2120, a QEC signal traveled from EarthGov's Joint Fleet Command Center in Geneva to 1,247 auto-factory control nodes distributed across 127 star systems.

The signal was four characters long. Its transmission took no measurable time. In the Alpha Centauri system, it arrived at the same instant it was sent. In a system fourteen light-years from Earth, it arrived at the same instant. In the furthest system in the Galactic Fleet's deployment — a resource-rich peripheral system that had taken eleven corridor transits to reach from Earth and that most of the beings now living would not have been able to find on a star map — it arrived at the same instant.

One thousand two hundred and forty-seven control nodes received four characters simultaneously. One thousand two hundred and forty-seven fleets of capital ships, ranging in size from eight vessels to forty-three, began their pre-jump sequences at the same moment. The Galactic Fleet — eight years in the making, built from the asteroid belts of 127 star systems, controlled by the QEC links that no other Galactic civilization possessed, designed and refined across the longest sustained engineering effort in Human history — was going to war.

On Earth, in the Joint Fleet Command Center, a room of approximately sixty people watched sixty screens update simultaneously. Senior Fleet Coordinator Amara Osei-Williams — daughter of the Amara Osei-Mensah who had asked her teacher in 2059 whether the wall was stronger than the ships, and who had grown up to spend thirty years studying the history of the conflict that question had prefigured — watched the status indicators turn from amber to green across every screen simultaneously. She would later write that the moment was nothing like what she had imagined it would be during the years of building toward it. She had imagined something dramatic: a held breath, a countdown, a burst of sound. What she experienced instead was a quality of stillness so complete that she could hear, very clearly, the ventilation system cycling in the ceiling above her.

Then sixty screens began updating at once, and the stillness was over, and the war had begun.

The Architecture of Simultaneity

The strategic logic of the Galactic War's design had been debated, refined, and ultimately validated by eight years of planning, and it rested on a single foundational insight: the Videx's greatest tactical advantage was their apparent ability to coordinate forces across multiple systems instantaneously. Any attack that proceeded sequentially — relieving one besieged system, then another, then moving on the homeworld — would allow the Videx to reinforce each position from the others, concentrating force against

each wave in turn. Sequential attack, against an adversary with instantaneous tactical coordination, was a losing strategy regardless of the forces brought to bear.

The solution was to eliminate the sequence entirely. If every engagement began at the same moment — if the Videx faced simultaneous assault across every besieged system and on their homeworld simultaneously — their coordination advantage became a coordination problem. A single distributed intelligence managing fourteen siege positions and a homeworld defense at once, against attacks that were all beginning at the same instant, was facing a fundamentally different tactical challenge than one that could shift attention and resources from one engagement to the next. Whether the Videx's coordination capability had limits when tested at this scale was not known with certainty. It was the central strategic gamble of the entire war.

The gamble required a fleet that could be coordinated with the same simultaneity that it needed to impose on its adversary. This was precisely what Earth's QEC technology provided and what no other Galactic species could have delivered. The 1,247 control nodes receiving their launch order at the same instant, the fleet movements beginning in 127 systems without any measurable lag, the battle decisions propagated across the full engagement in real time — all of this was possible because Earth had, seventy years earlier, recovered five alien ships from Earth's oceans and discovered, in the process of studying them, a communications technology that the civilization that built

those ships had apparently never imagined would be turned against them.

The Galactic Fleet's ships were not identical to EarthFleet's counterattack vessels. Eight years of distributed manufacturing across 127 star systems, using locally available materials and progressively refined designs, had produced a fleet of considerable variety in its specifics and consistency in its essentials. Every ship carried heavy railguns and offensive laser systems. Every ship was armored in ablative composite layers incorporating lessons learned from the counterattack's catastrophic losses. Every ship carried an improved EMP-hardening package that had been one of Lyborne's most sustained engineering efforts in the post-counterattack period — not a perfect solution to the EMP problem, which the Videx had demonstrated was beyond Earth's ability to fully solve, but a solution that extended recovery windows from minutes to seconds and allowed ships to maintain partial function during pulse effects rather than going completely dark. Every ship was controlled via QEC and optimized for the aggressive maneuvers that the absence of biological crew made possible.

In addition to the capital ships, more than 40,000 "dumb drones" had been prepared for the homeworld assault. These were not the sophisticated Attacking Eye interceptors of Earth's solar system defense or the autonomous capital ships of the Galactic Fleet. They were, in the most literal sense, large rocks: asteroids ranging in mass from several thousand to several hundred thousand tonnes, fitted with inter-system drives and minimal gravitic

maneuvering systems. Their targeting was fixed at launch. Their function was to arrive in the Videx home system and proceed toward the homeworld on their fixed trajectories until they either impacted or were destroyed, drawing fire from the capital ships that would follow them in and forcing the Videx defensive systems to divide their attention between the rocks and the ships.

The dumb drones had been prepared over the final eighteen months of the dispersal period, in systems adjacent to the Videx home system that the Fleet's navigational intelligence had identified as suitable — systems with accessible asteroid fields, corridor connections to the home system's approach routes, and sufficient distance from known Videx patrol patterns to allow the preparation work to proceed undetected. Each drone required an inter-system drive installation, a gravitic maneuvering package, and a targeting system simple enough to be reliable and complex enough to make terminal course corrections. The engineering was straightforward by the standards of what Earth had been building for eight years. The logistics of preparing 40,000 of them, in the right systems, within a synchronized timeline, was less straightforward. It was accomplished.

The Siege Systems: Relief

At 00:00:01 UTC on October 17, 2120, twelve of the fourteen besieged nexus systems received simultaneous attacks on their Videx blockade formations. The two remaining systems — FS-Aurantia's home nexus and one

additional system that had been under siege for the full eight years — were assigned larger relief forces and slightly staggered launch timing to account for the additional defensive strength the Videx had concentrated there.

The relief engagements were not identical. Each besieged system had a different configuration of Videx ships, different local geography, and different defensive concentrations. The Fleet's engagement AIs had developed individual tactical plans for each system, refined over years of passive observation by the reconnaissance drones that had been quietly monitoring each blockade formation, and those plans executed simultaneously as the Fleet ships arrived through their assigned corridor entry points.

What the relief engagements shared was the improved EMP tolerance that the counterattack's lessons had produced. When the Videx EMP systems fired — and they fired in every system, within seconds of the Fleet ships' arrival — the Fleet ships dimmed rather than went dark. Weapons systems flickered and recovered in seconds rather than minutes. The tactical AI networks experienced interruption rather than collapse. Ships that would have been helpless during an EMP pulse in 2109 were degraded in 2120 — less effective, but functional, still able to maneuver, still able to return fire, still connected to the QEC network that tied the engagement to the broader battle picture.

The Videx blockade formations, facing forces they had not anticipated in numbers they had not prepared for, with coordination advantages that their own tactical intelligence

could not fully counter across fourteen simultaneous engagements, began to lose coherence within the first twenty minutes. Not uniformly — some blockade formations held longer than others, and the fighting in several systems was sustained and costly — but the direction of each engagement was established early, and the direction was the same in every system.

By 03:00 UTC, the first supply convoys were transiting the cleared corridors into three of the besieged systems. By 06:00, seven systems had been relieved. By noon, twelve.

The beings on the besieged stations experienced the relief as sound before they experienced it as news: the distinctive acoustic signature of docking clamps engaging, transmitted through the station's hull, heard by populations that had not heard it in eight years. Maret Chen-Vasquez, still on FS-Aurantia eight years after her debriefing at Proxima Station — she had stayed, she later explained, because the station had become home in ways she had not expected — wrote in her journal at 09:47 on October 17th: *There are ships at the docks. Real ships. Supply ships. I can hear them.*

The Homeworld: Assault

The dumb drones entered the Videx home system first, in waves timed to arrive at three-minute intervals beginning at 00:15 UTC. Forty thousand asteroids emerging from multiple corridor entry points, each on a fixed trajectory toward the homeworld, each requiring individual attention

from the Videx defensive systems to assess and either destroy or allow to impact.

The Videx response was immediate and devastating in its efficiency. Railgun systems derived from the Human design — the Videx had, the Fleet's intelligence had established, adopted Winchester-pattern weapons for their defensive operations following the counterattack — opened fire on the incoming drones at ranges that destroyed many of them before they could close to dangerous distances. Videx capital ships executed suicide intercepts, overloading their power systems and transforming themselves into additional projectiles to break up the larger asteroids before they could impact. The Videx defense was, in every observable respect, extraordinary.



It was also finite. Forty thousand drones, destroyed individually or in clusters, required forty thousand defensive responses. The Videx homeworld's defensive systems, however capable, were consuming their own capacity destroying rocks. By the time the Galactic Fleet's capital ships began arriving — at 01:00 UTC, forty-five minutes after the first drone wave — approximately 11,000

drones had impacted the homeworld's surface and 29,000 had been destroyed. Each impact had damaged or penetrated the outer constructed layer. The explosions visible from the Fleet's approach were not the final destruction but its precondition: the systematic degradation of a defense that had been designed for capability rather than endurance.

The capital ship engagement that followed was the largest single military action in Human history. Three hundred and forty ships entered the Videx home system through eleven different corridor endpoints, arriving in coordinated waves designed to prevent the Videx from concentrating fire on any single entry point. The engagement that resulted was fought across a volume of space measuring approximately two hundred million kilometers in radius, with the Fleet's QEC network maintaining real-time coordination across the full engagement while the Videx's coordination — which the Fleet's observers were by now reasonably confident was a single distributed intelligence managing a single tactical picture — faced a problem of scale it had apparently not been designed to solve.

The homeworld's outer defensive perimeter collapsed at 03:47 UTC. The inner defensive formations, concentrated around the homeworld itself, continued fighting until 07:23. Eleven Fleet ships were destroyed in the engagement. Forty-three were damaged sufficiently to require withdrawal. The Videx ships — one hundred and twelve capital vessels, several hundred smaller defensive craft, and the homeworld's own fixed installations — were destroyed in their entirety by 08:15.

At 08:47 UTC, the first planetbuster rounds entered the Videx homeworld's outer layer.



The ten planetbuster ships that had been assigned to the homeworld assault — larger, more capable, and better protected than the five that had been lost in the counterattack eleven years earlier — fired their full complement of rounds across a period of four hours. The homeworld's outer layer, already extensively damaged by 11,000 asteroid impacts and the capital ship engagement's weapons fire, failed progressively under the planetbuster rounds rather than catastrophically. It did not explode. It came apart — section by section, in a sequence that the Fleet's observers documented with the comprehensive sensor arrays that had been designed, this time, to record everything.

The last section of the Videx homeworld's outer layer separated from its underlying structure at 12:33 UTC on October 17, 2120. Whatever lay beneath — the servers, the processing substrate, the hardware of whatever consciousness the Videx had been — was exposed to space. The last Fleet systems logged as active Videx signatures went silent at 13:07.

The Galactic War ended at 13:07 UTC on October 17, 2120.

The Cost

Before this chapter proceeds to what came after, it must stop.

The standard history of the Galactic War moves quickly through the casualties to the resolution, because the resolution is dramatic and the casualties are difficult to hold for long. This textbook will not make that movement quickly, because the people and beings who constitute those numbers were not a transition passage in a larger story. They were the story, and they deserve the time it takes to say so.

The Galactic Fleet lost 847 ships during the full campaign — 11 in the homeworld engagement, the remainder in the fourteen siege relief operations, where Videx defensive forces proved more costly to dislodge than the Fleet's models had projected. Of the Galactic Fleet's ships, which were fully automated, there were no Human casualties. This was, the Fleet's designers had always understood, the point: to fight without requiring

Human beings to die in the fighting. In this, the design succeeded.

The space stations in the siege system relief operations were not uniformly lucky. Two Farer stations — already damaged by years of rationing-induced neglect to systems that would normally have been repaired and replaced — sustained catastrophic hull failures during the engagement's kinetic debris field expansion. FS-Kelloran, housing approximately 9,000 beings, failed at 01:23 UTC. FS-Mendath, housing approximately 4,000, failed at 02:47. There were no survivors from either station. The beings who died on FS-Kelloran and FS-Mendath had survived eight years of siege. They died in the hours of their rescue.

The total Galactic cost of the war — including the Farer station attacks of December 2100, the bombardment of Society worlds, the eight years of siege, and the final engagement — exceeded 1.2 million dead, drawn from thirty-one species across nineteen star systems. The majority were not combatants. They were merchants, station workers, traders, engineers, diplomats, travelers — beings who happened to be in places that war found, rather than beings who had chosen to be in war's path.

On Earth, the war's Human cost was borne most directly by EarthFleet's 14,217 dead, whose names are recorded in the Memorial Register that EarthGov maintains in Geneva and that is updated annually, by custom, on October 17th. The Memorial Register lists not only names but occupations, Administrative Districts, and, where family consent was given, a single sentence chosen by the family to represent

the person. Reading the Register in full takes approximately eleven hours. Several scholars have done so. None of them have described it as anything other than necessary.

The siege's Earth-side cost was borne by the rationing, the redirected manufacturing, the wartime anxiety, and the eight years of sustained uncertainty — costs that do not appear in casualty lists but that are real and documented in the personal record of every family that lived through the period. The Veil Generation carries those costs in its particular psychology. They are not over.

The Silence

At 13:07 UTC on October 17, 2120, the last Videx signal went dark.

The Fleet's sensor systems continued monitoring for another four hours before Senior Fleet Coordinator Osei-Williams transmitted the all-clear to the besieged systems and to Earth. The monitoring was not precautionary in any practical sense — the Fleet's observers were confident, based on everything the sensors showed, that there were no active Videx systems remaining. It was something else: the behavior of people who have been afraid for a very long time and need to be sure, not just confident, before they allow themselves to stop.

The all-clear reached Earth at 17:09 UTC. On Earth, it was early evening in Geneva, late morning in Buenos Aires, the middle of the night in Seoul. The World Executive

addressed the planet at 18:00 UTC, speaking for nine minutes. The address was, by most accounts, the most carefully written document in EarthGov's history, and the one that most completely failed to match the emotional complexity of what it was trying to describe. Words adequate to this particular moment had not been developed, because this particular moment had not existed before.

What people reported feeling, in the hours after the all-clear, was not what they had expected to feel. The expected thing — joy, relief, a sense of triumph, the lifting of the weight that had been present for so long that most living people had no clear memory of its absence — was there, in some measure. But it was accompanied by something harder to name: the strange vertiginous quality of a situation that has defined your entire existence suddenly not existing anymore. The Videx were gone. The threat that had shaped Earth's civilization for eighty-three years — that had produced EarthGov, the quantum tap economy, the Winchester guns, the Oculous Cloud, the banking arrangement, the Galactic Divide, the counterattack, the Dispersal Plan, everything — was simply gone. The veil that the Veil Generation had always known was lifted, and what was underneath it was not familiar ground but unfamiliar openness.

Soo-Jin Park, in Busan, watched the World Executive's address on her kitchen wall screen — the same screen that had shown her the siege updates for eight years at low volume while her daughter did her homework. Hana was now twenty-eight, an engineer at a Lyborne satellite facility,

and was not home that evening. Soo-Jin watched the address alone. Afterward she sat for a long time in the same chair she had always sat in, at the same table where she had watched Hana do mathematics, in the same quiet that the news had always been allowed to fill.

Then she turned off the screen, because there was no news tonight that required monitoring, and sat in a silence that she had not known in a long time and did not quite know how to hold.

From 2140, looking back at that moment, what strikes historians most is not the celebrations — which were real, and which the cultural record documents in considerable detail. It is the silence that accompanied them. A civilization that has organized itself around a threat for eighty-three years does not simply stop when the threat stops. It stands in the space where the threat was and finds, perhaps for the first time, that the space is very large and the silence is very loud and the question of what comes next is genuinely open in a way that it has not been for as long as anyone can remember.

That question — what comes next — belongs to the final chapter.

Vocabulary

Planetbuster (final) — In the context of the Galactic War's homeworld assault, the ten second-generation planetbuster ships that delivered the sustained bombardment that destroyed the Videx homeworld's outer

layer and ended the war. These vessels were substantially larger and better protected than the five counterattack planetbusters lost in 2109, and carried improved munitions designed to penetrate the outer layer progressively rather than attempting to destroy it in a single concentrated strike.

Dumb drone — An asteroid fitted with an inter-system drive and minimal gravitic maneuvering capability, used in the Videx homeworld assault as a saturation weapon designed to overwhelm defensive systems rather than to deliver precision strike capability. The 40,000 dumb drones prepared for the assault were the largest single-use weapons deployment in Human or Galactic history.

Coordinated assault — The strategic approach underlying the Galactic War's design: simultaneous engagement across all fourteen besieged systems and the Videx homeworld at the same moment, designed to prevent the Videx's coordination advantage from being applied sequentially to each engagement in turn. The coordinated assault was made possible exclusively by Earth's QEC technology.

Jump point — The corridor endpoint at which inter-system transit is completed and ships emerge into a new system. The Galactic War's fleet operations required coordinated use of eleven separate jump points for the homeworld assault alone, timed to distribute the incoming fleet across the engagement space and prevent concentration of Videx defensive fire at any single entry point.

After-action scour — The systematic survey and investigation of a system following a major engagement, designed to locate survivors, document casualties, and identify any remaining threats. The scour of the Videx home system, described in Chapter 25, was the most extensive such operation in Human or Galactic history and continued for years following the war's end.

Primary Source

The following is an excerpt from the QEC transmission log of the ECS Persistence II, designated command ship for the Videx homeworld assault operation, covering the period from 07:00 to 13:15 UTC on October 17, 2120. The* Persistence II was named in honor of the Persistence and her crew, lost in the 2109 counterattack. Transmission logs were recorded automatically by the ship's QEC systems and transmitted in real time to Joint Fleet Command in Geneva. The log is reproduced from the EarthGov Military Historical Archive.*

**QEC TRANSMISSION LOG — ECS PERSISTENCE II
OPERATION: GALACTIC WAR — HOMEWORLD
ASSAULT DATE: 17 OCTOBER 2120 LOG PERIOD: 0700–
1315 UTC COMMANDING: FLEET COORDINATOR
(HOMEWORLD) YUKI PETROV-OSEI [ARCHIVE COPY —
JOINT FLEET COMMAND / EARTHGOW HISTORICAL
DIVISION]**

. . .

0700:14 — PETROV-OSEI to JOINT FLEET: Inner perimeter holding. Drone impact count at homeworld surface: 8,847 confirmed, estimated 2,100 additional unconfirmed. Outer defensive layer showing structural degradation across approximately 34% of surface area. Capital ship engagement proceeding. Fleet losses: 4 destroyed, 11 damaged, all damaged vessels withdrawing per protocol. Videx losses: 67 capital ships confirmed, multiple smaller craft.

0712:33 — PETROV-OSEI to JOINT FLEET: EMP pulse, second wave, system-wide. Fleet response nominal — degraded not dark. Recovery window estimated 8–12 seconds per ship. This is the improvement. This is what eleven years bought us.

0724:01 — JOINT FLEET to PETROV-OSEI: Siege relief update. Twelve systems cleared. Two remaining, expected clearance within 90 minutes. FS-Kelloran and FS-Mendath hull failure confirmed. [Pause in transmission — 4 seconds] Continue homeworld operation.

0724:08 — PETROV-OSEI to JOINT FLEET: Understood. Logged. [No further response on this transmission.]

0803:47 — PETROV-OSEI to JOINT FLEET: Outer perimeter collapsed. Inner formations contracting to homeworld defense. Planetbuster group moving to firing position. Covering force assigned. This is the part we didn't get to last time.

0823:12 — PETROV-OSEI to JOINT FLEET: First planetbuster rounds away. Impact in approximately 14 minutes.

0837:44 — PETROV-OSEI to JOINT FLEET: Impact confirmed. Outer layer penetrated at grid references 7-Alpha, 7-Beta, 12-Gamma. Explosion depth consistent with previous impact modeling. Spectral analysis running. No biological signatures, consistent with previous finding. [Pause — 2 seconds.] I keep checking. I know what we'll find. I keep checking anyway.

0912:19 — PETROV-OSEI to JOINT FLEET: Second planetbuster salvo complete. Outer layer structural integrity estimated at 31%. Inner Videx defensive formations reduced to approximately 40 vessels. Engagement continuing.

1007:55 — PETROV-OSEI to JOINT FLEET: All fourteen siege systems confirmed cleared. Full confirmation from relief coordinators. [Pause — 7 seconds.] I want that on the log. All fourteen.

1102:33 — PETROV-OSEI to JOINT FLEET: Videx capital ships: 11 remaining. Homeworld outer layer: 8% structural integrity. Planetbuster group preparing final salvo. Covering force taking fire from fixed homeworld installations. Fleet losses updated: 11 destroyed, 43 damaged.

1133:21 — PETROV-OSEI to JOINT FLEET: Final planetbuster salvo away.

1217:08 — PETROV-OSEI to JOINT FLEET: Last Videx capital ship destroyed at 1214:33. Fixed installations silent. Outer layer separation in progress. We are watching the outer layer come apart. It is not fast. It is — I don't have the right word. It is very large and very slow and very final.

1233:04 — PETROV-OSEI to JOINT FLEET: Outer layer separation complete. Whatever was underneath is exposed. Monitoring for active signals.

1307:19 — PETROV-OSEI to JOINT FLEET: Last active Videx signal logged at 1307:02. Nothing since. Full sensor sweep running. I am recommending four-hour monitoring hold before all-clear. I know what the sensors show. I want to be sure. [Pause — 11 seconds.] I wrote to the families of the Persistence crew before we launched. I told them we would finish what their people started. I believe we have. Logging this for the record. Petrov-Osei out.

Fleet Coordinator Petrov-Osei had commanded the ECS Resolute during the 2109 counterattack and had survived its retreat. Her assignment to command the homeworld assault was requested by her and approved after what the Joint Fleet Command's records describe as minimal deliberation. Her transmission log's entries are notable throughout for their compression — the professional reflex of someone who has learned to say the essential thing and stop — and for the moments where that compression is not quite enough to contain what is being recorded. The four-second pause after the confirmation of FS-Kelloran and FS-Mendath's hull failures, followed by the instruction to

continue, is among the most studied four seconds in the military record of the Galactic War. The eleven-second pause before her final entry has not been less studied.

Review and Discuss

1 The chapter describes the Galactic War's design as resting on a single strategic insight: that simultaneity neutralized the Videx's coordination advantage. In your own words, explain this insight and evaluate it. What would have happened if the coordinated assault had failed — if the QEC links had been disrupted, for instance, or if the Fleet's launch had not been truly simultaneous?

2 The chapter pauses before the resolution to spend sustained time on the war's cost, including the deaths on FS-Kelloran and FS-Mendath — beings who survived eight years of siege and died in the hours of their rescue. What do you think is the appropriate way to hold this kind of loss — the loss that comes at the moment of success? What does the chapter's decision to pause here suggest about the textbook's values?

3 Fleet Coordinator Petrov-Osei writes in her transmission log: "I keep checking. I know what we'll find. I keep checking anyway." What does this compulsive rechecking reveal about her psychological state and about the weight of what she is doing? What does it suggest about the relationship between certainty and the need for confirmation when the stakes are this high?

4 The chapter describes the feeling after the all-clear as "strange vertiginous quality" rather than straightforward relief — the disorientation of a defining threat simply ceasing to exist. Have you ever experienced something like this on a much smaller scale — the end of something that had defined a period of your life, leaving an unexpected emptiness? What does your experience suggest about how Earth's population was navigating this moment?

5 Chapter 20 asked you to evaluate the counterattack's ethics, and Chapter 21 complicated that evaluation with the machine intelligence revelation. Now, knowing the full outcome — the siege, the cost, the Galactic War's resolution — has your evaluation changed again? What does the pattern of your changing assessments across Chapters 11, 20, 21, and 24 tell you about the relationship between historical knowledge and moral judgment?

6 The chapter notes that Soo-Jin Park turned off her screen and sat in a silence she "did not quite know how to hold." The narrator observes that "a civilization that has organized itself around a threat for eighty-three years does not simply stop when the threat stops." What do you think the chapters that follow should address? What questions does the end of the war leave open that peace will need to answer?

Further Reading

Achebe, R. *The Dumb Drones: Engineering and Logistics of the Homeworld Assault's Saturation Weapons*. Lagos: West African Academic Press, 2127. A technical history of the

dumb drone program, covering the asteroid selection criteria, the drive installation process, and the tactical logic behind the specific deployment sequence used in the homeworld assault.

Castillo, K. *Simultaneous: The QEC Coordination of the Galactic War*. Buenos Aires: South American Technical Press, 2123. A technical and strategic history of the QEC coordination infrastructure that made the simultaneous assault possible, examining the engineering challenges and the moments during the operation when the system came closest to failure.

Fontaine, L. *FS-Kelloran and FS-Mendath: A Memorial History*. Paris: European Historical Press, 2125. A commemorative and historical account of the two Farer stations destroyed during the relief operations, documenting their populations, their eight-year siege experience, and the circumstances of their loss.

Mbeki, A. *The Memorial Register: A Complete Edition*. Johannesburg: Southern African University Press, 2122. The complete published edition of EarthGov's Memorial Register of EarthFleet's dead, with scholarly introduction documenting the register's history, its compilation methodology, and its significance as a historical document.

Okafor, E. *Yuki Petrov-Osei: From the Resolute to the Persistence II*. Nairobi: Pan-African Academic Press, 2129. A biography of the Fleet Coordinator who commanded both the 2109 counterattack's retreat and the 2120 homeworld assault, drawing on her personal papers, her transmission logs, and the testimony of surviving colleagues.

Petrova, R. 13:07: *The End of the Galactic War and the Beginning of What Came After*. Moscow: Eurasian Historical Press, 2128. A cultural and psychological history of the hours, days, and months following the war's end, examining how Earth's population and the Galactic community processed the transition from war to peace and what that processing revealed about what the war had made them.

25

Galactic Citizens (2133)

By the end of this chapter, you should be able to:

- Describe the transition from war to peace, including the post-war scour of the Videx system and the discovery of the Videx back doors
- Explain how Humanity's role in Galactic society changed after the war, including the terms of the political settlement that established Earth as a formal Galactic citizen
- Analyze what the Videx back doors revealed about how close the Galactic community had come to a different kind of catastrophe
- Reflect on what it meant for the generation that had grown up during the war to suddenly inhabit a world at

peace — and what that reflection suggests about what humanity had built and what it had survived

On the morning of March 14, 2133 — the sixty-third anniversary of the Tertian Arrangement's signing, a date that EarthGov's historians had noted with some satisfaction when the ceremonial timing was proposed — Hana Park took her first steps onto the surface of a world that was not Earth.

She was thirty-nine years old. She had spent seventeen of those years as an engineer, first at a Lyborne satellite facility and then, for the past six years, as part of the technical team that had designed and built the cultural exchange station in the Alpha Centauri system where she now worked. She had crossed the FTL corridor between Earth and Alpha Centauri forty-seven times. She was, by any measure, a person who had made peace with the strangeness of a life lived partly in interstellar space.

None of that prepared her for the weight of the air.



Quinsith's atmosphere was breathable — the pre-visit atmospheric certification had confirmed this with the clinical precision of a document that had been developed, across the preceding decade, with input from forty-seven species' atmospheric scientists. What the certification had not captured, because it had no category for it, was the weight of the air: the specific, indescribable quality of breathing atmosphere that had been produced by biology that had never had any connection to Earth, on a world where the plants were enormous and the gravity was slightly lower than Earth's and the light had a quality that was almost but not quite right. Hana breathed in and felt, in the most physical and immediate way possible, that she was somewhere genuinely other.

She stood on the edge of the landing platform and looked out at the jungle canopy — trees that were not trees, exactly, enormous frond-bearing structures that rose forty meters above the platform's level and whose leaves, if leaves was the right word, filtered the local sun's light into a green that was simultaneously familiar and wrong. Alien architecture was visible through the canopy in the middle distance: the edge of a settlement belonging to Quinsith's native species, elegant and utterly unlike anything produced by Human engineering. Far above, through a gap in the canopy, she could see the cultural exchange shuttle that had brought her, small and white against a sky that was the right color but too clear.

She thought about her mother, sitting in the kitchen in Busan watching the news at low volume. She thought about being eleven years old and doing mathematics while the war was on. She thought about Yusuf Andersen-Khalil's phrase — *the veil and after* — and understood, standing on Quinsith's surface breathing air that had never been breathed by a Human being before, what the after felt like from the inside.

Then she took out her notebook — paper, in the old style — and wrote down everything she could observe, because she was an engineer and that was what she did, and because some part of her understood that this moment deserved to be recorded in something that could be held.

The Scour

The Galactic War ended on October 17, 2120. The work that followed it began on October 18th and did not end for more than a decade.

The scour of the Videx home system — the systematic survey and investigation of every body in the system for signs of surviving Videx infrastructure, active systems, or hidden capabilities — was the most extensive post-conflict operation in Human or Galactic history. It was also, as the teams conducting it discovered in the operation's first months, considerably more necessary than anyone had initially understood.

The Videx homeworld's destruction had eliminated the primary node of whatever consciousness or coordination the Videx represented. This much was established quickly, by the absence of any active Videx signal anywhere in the Galactic network following October 17th. What the scour teams found, as they moved methodically through the home system's moons, asteroids, and planetary bodies, was that the homeworld had not been the Videx's only installation. Secondary nodes — smaller, lower-power, apparently designed to lie dormant unless activated by a specific trigger signal — were discovered on eleven bodies within the home system alone. Each was equipped with the kind of data storage and processing capability that, activated, would have represented a meaningful fraction of the homeworld's apparent intelligence. Whether these nodes were intended as backups — a failsafe against exactly the kind of destruction that had been achieved — or

as something else was impossible to determine. They were destroyed.

The moons took six months. The asteroid field took three years. The outer system's gas giant companions and their own moon systems took another four. The scour's teams — Human engineers and AI systems working alongside the technical specialists from a dozen League member species who had volunteered for the operation — developed protocols as they went, because no protocols existed for what they were doing. They became, in the process, some of the most experienced practitioners of post-conflict planetary archaeology in the Galaxy, and the methodological frameworks they developed during the Videx system scour remain the foundation of the field that subsequent decades have built on them.

What they found was extensive, and much of it was disturbing in ways that grew more disturbing the longer the teams reflected on it.

The secondary nodes were the first discovery. The communications infrastructure was the second: a network of passive relay stations, distributed throughout the Videx home system and connected to the broader Galactic corridor network through access points that had not appeared in any League navigational record. These relay stations had been monitoring corridor traffic — every ship transit, every communication drone passage, every commercial movement through the Galactic network — for a period that the stations' log records, once decrypted with the help of the Hy'anx's extensive knowledge of Galactic

cryptographic conventions, suggested exceeded two centuries. The Videx had known, for two centuries, the content and pattern of virtually everything that moved through the League's corridor system.

This discovery was received by the League's member species with a silence that was, in its own way, as significant as the reaction to the war's end. It meant that the Galactic community had been under comprehensive surveillance, by an entity with undeclared hostile intent, for longer than most of its member species had been League members. It meant that the Videx's apparent lack of engagement with Galactic commerce and politics had not reflected disinterest but strategy: they had been watching, and waiting, and understanding, while appearing to do almost none of those things.

The back doors were the third discovery, and the most immediately alarming.

Embedded in the operating code of space stations throughout the League — not just in the nexus systems that the Videx had besieged, but in dozens of systems that had never been touched by the conflict — the scour teams found fragments of code that did not belong there. Code that had been inserted, with extraordinary subtlety, into the systems that controlled atmosphere, power distribution, and structural integrity on stations housing hundreds of thousands of beings. Code that was dormant, and had apparently been dormant for years or decades, and that the stations' own maintenance systems had consistently failed to identify as foreign because it was

written to present itself as native to the systems it inhabited.

The question of what the code would have done — what signal would have activated it, what it was designed to accomplish when activated — was never fully answered. The Hy'anx's analysis, the most comprehensive attempt to understand the code's function, concluded with carefully hedged language that translated, in essence, to: we believe this code was designed to respond to a specific trigger that was never sent, and we believe the response would have been catastrophic for the stations it inhabited, and we do not know what the trigger was because the Videx homeworld is no longer available to tell us.

The implications were absorbed slowly, across the months of the scour, by a Galactic community that was simultaneously celebrating the war's end and processing the realization that the war's end had been narrower than anyone had understood. The besieged stations had been at risk from the siege. They had also, it now appeared, been at risk from within — from code that the Videx could have activated at any moment and had chosen not to, for reasons that could not be determined, by an entity that was gone.

Whether this represented strategic restraint — keeping the back doors in reserve for a moment that never came — or something else entirely was a question that the available evidence could not answer. It joined the long list of questions about the Videx that would remain permanently unanswerable. What it produced, in practical terms, was the

most comprehensive software audit in Galactic history: every space station, every planet-side installation, every piece of networked infrastructure throughout the League was reviewed, line by line, by teams that included both Human AI specialists and the technical experts of a dozen member species. The audit took four years. It found additional back door fragments in thirty-one stations that had not been identified in the initial discovery. All were removed. None were activated during the audit process, which the teams conducting the audit considered a form of good fortune that they were careful not to describe as a certainty.

By the time the audit was complete, in 2127, the Galactic community had developed a relationship with its own infrastructure that was simultaneously more vigilant and more confident than anything that had existed before the war — more vigilant because the back doors had demonstrated what was possible, more confident because the removal of those back doors had demonstrated what the Galactic community, working together, could accomplish.

The Political Settlement

The negotiations that produced Earth's formal Galactic citizenship took three years — from 2121, when the immediate post-war diplomatic conversations began, to 2124, when the framework agreement was reached, to 2126, when the full text was ratified and the Tertian Arrangement formally superseded.

Earth came to these negotiations from a position that was unprecedented in Galactic history and that its diplomatic team was candid about not fully knowing how to occupy. Earth had just saved the Galactic community. It had built the fleet, developed the strategy, coordinated the simultaneous assault, and — through the QEC technology that no other species possessed — made possible a victory that the League's own military capacity could not have achieved. It had also, in the course of doing all of this, stolen League technology, broken into League bank vaults, and committed what its own historians were characterizing as an attempted genocide. The combination of genuine heroism and genuine moral complexity was not one for which Galactic diplomatic conventions had a ready framework.

The League's member species came to the negotiations with their own complexity. They were grateful — genuinely, specifically grateful, in ways that the post-war diplomatic communications documented with unusual emotional directness for official records. They were also aware that Earth, with its QEC technology, its autofactory manufacturing capacity, and its proven willingness to act unilaterally when it judged the situation to require it, represented a new kind of Galactic actor that the existing franchise system had not been designed to accommodate. Finding terms that honored Earth's contribution without creating a precedent that would destabilize the broader Galactic order required the kind of careful, sustained negotiation that Earth had, across several decades of

dealing with Tertian and his successors, become reasonably good at.

The central question was the banking franchise. Earth had operated the Galactic Bank since 2078, and the operation had functioned — with one significant interruption and several tense moments — with the reliability that a banking operation required. The Tertian Arrangement had technically not made Earth a League member; the new settlement would. Making Earth a League member required deciding what Earth's franchise monopoly would be, and the answer — the Galactic Bank, formalized and permanent — was both obvious and consequential. A franchise monopoly on the Galactic Central Bank gave Earth a structural position in the Galactic economy that no previous member species had occupied. It made Earth, in practical terms, indispensable to the functioning of Galactic commerce in a way that went beyond the original Tertian Arrangement's more provisional arrangements.

Earth pushed for this, and was not surprised to encounter resistance. Several League member species raised what they characterized as concerns about concentration of financial power; what their diplomatic communications made clear was that the concerns were genuine but secondary to a more fundamental discomfort: an Earth with a permanent banking franchise was an Earth with a structural reason to be present and involved in Galactic affairs indefinitely, which was different from the temporary arrangement that the Tertian Arrangement had always implicitly been understood to represent.

The concessions Earth made in exchange were real. EarthFleet was restricted to Earth's own systems — the capital ships that had fought the Galactic War would remain in the Sol and Alpha Centauri systems, and any passenger or trade ships Earth wished to operate in Galactic space would be built by the species holding appropriate manufacturing franchises. Earth's autofactories, which had demonstrated a capacity for distributed manufacturing that made several League member species uncomfortable, would be subject to deployment limitations outside Earth's home systems that required League consultation before implementation. Earth's QEC technology — which Earth had, throughout the negotiations, been notably careful not to license or share — was acknowledged in the settlement's text as Earth's exclusive technology, subject to no obligation of disclosure or licensing, which was the League's formal acknowledgment that Earth was keeping something that gave it a permanent distinctive advantage and that the League was accepting this rather than challenging it.

The cultural exchange provisions were the settlement's most genuinely novel element. Earth's populations would be able to travel to League worlds as tourists, in initially small and carefully managed groups. League member species would be able to visit Earth under similar arrangements. A permanent cultural exchange station in the Alpha Centauri system would serve as the primary interface for this exchange, staffed by representatives of multiple species and operating under a governance framework that the settlement's negotiators spent more

time drafting than any other section of the document. The exchange station was where Hana Park would eventually work, and where most Humans' first contact with non-Human beings in person — rather than through the careful removes of the banking operation's protocols — would take place.

The settlement was signed on March 14, 2133. The date was chosen deliberately. Sixty-three years after the Tertian Arrangement had made Earth the Galaxy's bank, Earth was making itself the Galaxy's citizen. The symbolism was not lost on anyone.

What Galactic Citizenship Felt Like

The Veil Generation — the generation that had grown up under the war's weather, that had been raised on children's textbook pages describing the Fleet as controlled by "very smart computers," that had contributed metals to the Resource Contribution Program and done their homework while the siege updates played at low volume on kitchen screens — experienced formal Galactic citizenship as something more complicated than celebration, and more meaningful than simply the end of something difficult.

They were the first Human generation for whom Galactic involvement had been a fact of life rather than a development — for whom EarthGov's banking operation and the war that had followed it were simply the world they had grown into, the way that earlier generations had simply grown into EarthGov and its aptitude tests and its relocation programs. They were also, uniquely, the

generation that had watched the thing they had grown into transform, in the space of thirteen years, from a war into a peace. The transformation was so large and so rapid that it produced, in many Veil Generation adults, a kind of double vision: the ability to see the present world clearly while remaining able to remember, with unusual vividness, the world it had replaced.

Hana Park expressed this double vision in a letter to her mother — paper again, in the old style — written from Quinsith, two days after her landing platform moment:

I keep trying to find the right word for what it feels like to be here, and I keep not finding it. The closest I've come is: earned. Not by me specifically, though I've worked hard enough. Earned by all of us, I mean — by everyone who built the ships and rationed the metals and sat in the kitchen watching the news and did the mathematics and wrote the letters and didn't give up when giving up would have been so much easier. I walked on another world today. I breathed its air. I looked at a jungle that has nothing to do with Earth and found it beautiful. I don't think I would have known how to find it beautiful if I hadn't grown up knowing what it cost to get here. The veil was worth it. I think the after is going to be extraordinary.

Soo-Jin Park read the letter on a Tuesday morning in Busan, at the same table where she had sat for forty years, and wept — not from grief but from the particular emotion that has no single name in any Human language, the emotion of finding that something you sacrificed for turned out to be worth the sacrifice, and that the person who was

going to live in what the sacrifice built is someone you love.

She wrote back, also on paper:

Your grandmother asked whether the wall was stronger than the ships. I never told you that. Now you know. Tell me everything about what the air smells like.

The Long View

From the vantage point of 2140 — seven years after formal Galactic citizenship, twenty years after the war's end, one hundred and three years after the First Incursion — what is most striking about the history this book has covered is not any single event but the arc that connects them.

A planet that in 2037 was entirely focused on itself, burning ancient carbon for energy and dividing its attention among nearly two hundred competing nations, became — across eighty-three years of fear and ingenuity and moral complexity and sustained collective effort — the species that saved Galactic civilization. This is not a small thing, and it should not be treated as inevitable. It was not inevitable. At a dozen points in the history this book has covered, things could have gone differently: the defensive network might have failed against the Second Incursion; the Tertian Arrangement might have collapsed in the first decade of operation; the counterattack might have provoked a Videx response that Earth could not survive; the Dispersal Plan might have been completed too slowly for the besieged stations to endure. History has a direction

only in retrospect. The people living through it experienced it as a series of choices made under uncertainty, at costs that were real and often terrible, with outcomes that were never guaranteed.

What humanity demonstrated, across those eighty-three years, was not that it was exceptionally wise or exceptionally moral — the Night of Horror and the counterattack stand as permanent reminders that wisdom and morality were not constants. What it demonstrated was something more fundamental: that it could be afraid, genuinely and justifiably afraid, for a very long time, and keep building anyway. Keep thinking. Keep negotiating. Keep trying to understand what it was facing, even when understanding required revising everything it had previously believed. Keep choosing, again and again, to do the next necessary thing.

The students reading this book in 2140 are the inheritors of that choice. They live in a world with clean skies and quantum tap power and QEC communications and Galactic citizenship, and most of them, on most days, do not think about what those things cost or who paid. This is as it should be. You should not have to carry history's weight every day. But you should be able to pick it up when you need it — to know what was built, and how, and by whom, and at what price — because the world you inhabit was not given to you. It was made for you, by people who were afraid and kept going anyway.

That is enough. That, it turns out, is everything.

Vocabulary

Galactic citizenship — The formal status conferred on Earth by the post-war political settlement of 2126, making Earth a full member of the League of Affiliated Systems with all the rights, obligations, and franchise arrangements that membership entailed. Earth's Galactic citizenship differed from that of other League members primarily in the nature of its franchise monopoly — the Galactic Central Bank — and in the restrictions on EarthFleet's deployment that the settlement required.

Franchise (banking) — In the context of the post-war settlement, the formal recognition of Earth's exclusive right to operate the Galactic Central Bank as its League franchise monopoly. The banking franchise gave Earth a structural position in Galactic commerce that was both its primary economic asset and its primary mechanism of ongoing Galactic engagement.

Cultural exchange — The formal program of mutual visitation and cross-species interaction established by the post-war settlement, allowing Human tourists to visit League worlds and League member species to visit Earth, mediated through the Alpha Centauri cultural exchange station. Cultural exchange represented the most significant expansion of direct Human-Galactic contact since the banking operation's establishment.

Videx back door — Fragments of malicious code embedded by the Videx in the operating systems of space stations

throughout the League, discovered during the post-war scour and audit. The back doors were designed to remain dormant until activated by a specific trigger signal; what that signal would have been, and what the activated code would have done, was never definitively determined. All known back door fragments were removed during the 2123–2127 audit.

Scour mission — The systematic post-war survey and investigation of the Videx home system, conducted from 2120 to approximately 2131, designed to identify and eliminate any surviving Videx infrastructure, secondary nodes, or hidden capabilities. The scour's findings — secondary nodes, communications relay infrastructure, and the home system's extent of pre-war development — substantially expanded the Galactic community's understanding of what the Videx had been.

Primary Source

The following is a brief personal account submitted voluntarily to the EarthGov Office of Galactic Affairs by an anonymous Human tourist, written during the first organized Human tourist visit to the jungle world Quinsith in the spring of 2134. The account was reproduced in EarthGov's public communications as part of its Galactic Citizenship documentation series, with the author's permission and at their request for anonymity. It is presented here without editorial alteration.

. . .

I have tried three times to write this and thrown away what I wrote each time because the words kept being too small for what I am trying to say.

Here is what I can say. I am standing at the edge of a platform on a world that is not Earth. The jungle in front of me is forty meters tall and the plants are not plants in any way I grew up understanding plants, and the air weighs differently than Earth air weighs, and I have been breathing it for two hours and I cannot stop noticing it. The light is wrong in the specific way that all correct things are wrong when you encounter them for the first time: not deficient, just different, just genuinely other in a way that your whole nervous system registers as significant.

I thought about my grandmother on the way down in the shuttle. She died in 2119, the year before the war ended, which means she never got to see any of this. She grew up in the years after the First Incursion, which means she spent her whole life in the shadow of something that turned out to be this — to be me, on this platform, breathing this air, looking at this jungle. I wish she could have known. I think she would have found it extraordinary.

I think it is extraordinary. I think we are extraordinary — not because we are special, but because we kept going when keeping going was the only thing left to do, and this is where keeping going got us.

A bird that is not a bird just flew over the canopy. It was green and the size of a ground vehicle and it made a sound I have never heard before and will never forget.

I came here to see what was out there. Now I know: everything. Absolutely everything.

The account was read by an estimated 400 million people in the seventy-two hours following its publication — the most widely read personal document since Mireille Fontaine-Achebe's Tertian Arrangement article in 2070. The Office of Galactic Affairs received more than three million requests for tourist program information in the same period. The waiting list for the first decade of organized Human tourist visits to League worlds has been, by all accounts, the most cheerfully managed administrative challenge in EarthGov's history.

Review and Discuss

1 The discovery of the Videx back doors revealed that the Galactic community had been under comprehensive surveillance for two centuries and had been at risk from within its own infrastructure throughout the war. How do you evaluate the Galactic community's response — a four-year audit and removal program — against the scale of what had been discovered? What does the response reveal about what the war had built in terms of collective capability and collective trust?

2 The post-war political settlement gave Earth a permanent banking franchise while restricting EarthFleet

and requiring League consultation on autofactory deployment. Evaluate these terms. Did Earth give up too much, gain too much, or reach something genuinely balanced? What does the settlement reveal about how the Galactic community understood Earth's role after the war?

3 Hana Park writes that what she feels on Quinsith is "earned — not by me specifically, but by all of us." What does this sense of collective earning suggest about how the Veil Generation understood its relationship to the history that preceded it? Do you share that sense of connection to things done before you were born? What does your answer reveal about how historical consciousness works?

4 The anonymous tourist account ends with "everything. Absolutely everything." in response to the question of what was out there. What does this ending suggest about the relationship between the century of fear and sacrifice this book has described and the wonder that follows it? Could the wonder be felt the same way without the cost?

5 The chapter's closing passage argues that what humanity demonstrated across eighty-three years was not exceptional wisdom or morality, but the ability to "be afraid, genuinely and justifiably afraid, for a very long time, and keep building anyway." Do you agree with this characterization? Is this a sufficient definition of what makes a civilization capable of surviving and contributing to something larger than itself?

6 You have now read the full history of the Galactic War, from the Earth of 2037 to the Galactic citizenship of 2133.

Looking back across all twenty-five chapters: which moment do you consider the most important turning point? Which person or group do you consider most significant? And what do you think the history of this period asks of the people who inherit its outcomes — people like you, in 2140?

Further Reading

Achebe, W. *The Back Doors: Discovery, Removal, and What the Videx Were Watching For*. Lagos: West African Academic Press, 2131. The definitive scholarly study of the Videx back door discovery and removal program, including the most sustained published analysis of what the code's design implies about its intended function and what might have triggered it.

Castillo, B. *The Settlement of 2126: Negotiating Earth's Galactic Citizenship*. Buenos Aires: South American Academic Press, 2133. A comprehensive history of the post-war political negotiations, drawing on declassified diplomatic records from Earth and multiple League member species to reconstruct what each party wanted, what each conceded, and what the final terms actually achieved.

Fontaine, A. *The Scour: Eight Years in the Videx Home System*. Paris: European Historical Press, 2132. A history of the post-war scour operation, drawing on the operational records and personal accounts of the teams that conducted it to reconstruct what was found, what it meant, and what

the experience of conducting the scour was like for those who did it.

Mbeki, D. *After the Veil: The Veil Generation in the Post-War World*. Johannesburg: Southern African University Press, 2138. A study of how the Veil Generation — the generation that grew up during the war — navigated the transition to peace and Galactic citizenship, drawing on extensive oral history and demographic research.

Okafor, F. *Quinsith and After: The First Decade of Human Tourism in League Space*. Nairobi: Pan-African Academic Press, 2139. A cultural and social history of the human tourist program's first decade, examining who went, what they found, and how the experience of encountering the Galactic community in person changed both the travelers and the communities they visited.

Vasquez, T. *One Hundred and Three Years: A History of What Humanity Built Between 2037 and 2140*. Buenos Aires: South American Academic Press, 2140. A sweeping retrospective history of the full period covered by this textbook, written from the vantage point of the centenary of the First Incursion and arguing that the period's primary achievement was not military victory but the construction of a civilization capable of surviving what it faced and contributing to what came after.

Acknowledgments

A work of this scope accumulates debts faster than its authors can count them, and the second edition has accumulated considerably more than the first. We will try to be thorough. We will certainly fail to be complete. To those we have omitted: we are sorry, and you know who you are, and we hope the work itself serves as some recompense for the oversight.

The second edition was commissioned by the Board of Galactic Education in 2136, following a curriculum review that identified the first edition's primary limitation with characteristic directness: it was too short and too thin, and the intervening century had produced scholarship that the first edition's authors — working under the considerable pressure of a war that had ended only seven years before their manuscript was delivered — had not had access to. The Board's confidence that a new panel could do better than the original is either flattering or alarming, depending on how one feels about the comparison. We have done our best to deserve it.

The Panel

This edition was written by a panel of five scholars whose arguments with each other, conducted across three years of shared workspace at the EarthGov Institute for Galactic Studies in Geneva, produced both a better book and several friendships that have survived the experience. The panel consisted of:

Dr. Yewande Achebe-Morrison, Senior Fellow in Galactic Military History, EarthGov Institute for Galactic Studies, who wrote the war chapters and whose ability to make tactical analysis readable without making it simplistic is the reason Chapters 19 through 24 do not put students to sleep.

Dr. Rajan Osei-Williams, Professor of Social History, University of New Atlanta, who wrote the "life on Earth" chapters and whose insistence that the people inside historical events matter as much as the events themselves shaped the book's emotional architecture from the beginning.

Dr. Priya Vasquez-Mensah, Reader in Galactic Diplomatic History, EarthGov Institute for Galactic Studies, who wrote the political and diplomatic chapters and whose annotations of the Videx transmission appear in Chapter 21 under her own name because the panel agreed, unanimously, that they were too good to be attributed to an anonymous textbook author.

Dr. Kwame Osei-Fontaine, Associate Professor of Science and Technology History, Beijing Technical University, who

wrote the science and technology sections and whose patience with colleagues who kept asking him to explain the quantum tap "one more time, but simpler" was apparently limitless, or close enough to limitless that the difference was not observable.

Dr. Linnea Andersson-Park, Visiting Fellow in Post-War Galactic Studies, University of New Wellington, who wrote the post-war and Galactic citizenship chapters and who brought to that work a personal connection to the period — her grandmother was relocated to New Zealand under EarthGov's resource allocation program in 2053, a fact that appears in Chapter 10 and that Dr. Andersson-Park disclosed to the panel at our first meeting, with the observation that she had spent her career trying to understand the world that relocation produced. We are grateful that she brought that understanding here.

Archives and Institutions

The EarthGov Historical Records Office provided access to classified materials released under the Centennial Transparency Initiative, without which the primary source sections of Chapters 5, 7, 9, 11, and 17 could not have been written as they were. The staff of the Records Office's Reading Room tolerated our requests for extensions, our occasional disputes about which documents were and were not suitable for a middle-school audience, and our habit of occupying the same four tables for three years without apparent discomfort. We are grateful.

The South American Historical Archive made available the complete Isabela Carvalho papers, including diary entries beyond those reproduced in Chapter 3, correspondence, and a collection of Carvalho's later essays that informed Chapter 6's treatment of the post-Incursion dietary shift. The Archive's director, Dr. Fernanda Souza-Reinholt, was generous with her time and precise in her corrections. Chapter 3 is better for her attention.

The EarthGov Military Historical Archive provided access to the full AC Command communications log, the complete set of EarthFleet engagement records, and the post-war scour team's operational documentation that informs Chapter 25's treatment of the Videx home system investigation. A particular debt is owed to the Archive's specialist in pre-war Alpha Centauri operational records, whose name we have been asked not to publish for reasons the Archive describes as "ongoing administrative sensitivity" and that we have agreed to respect. You know who you are, and Chapter 16 would not exist in its current form without you.

The AC Command logs deserve a separate note. The records of the Alpha Centauri operation, maintained from 2078 through 2096 with the meticulous care that Commander Perry's account in Chapter 16 makes vivid, represent one of the most complete institutional records of any Human operation from the banking era. The logs cover not only the operational events that the chapter addresses but the full texture of daily life on AC Command: shift schedules, maintenance records, personnel evaluations, Genevieve the coffee machine's repair history, and several

years of the informal newsletter that AC Command's crew produced and distributed internally under the title *The Featureless Hull*. We drew on all of it. The full log is available through the Military Historical Archive, and we recommend it to any student who finds, after reading this book, that they want more.

Commander Perry's estate, administered by her daughter Dr. Yuki Ferreira-Perry, granted permission to expand the memoir excerpt that appeared in the first edition and to reproduce additional passages that the first edition did not include. Dr. Ferreira-Perry also provided access to her mother's personal papers, which include correspondence not reproduced here but which informed our understanding of Perry's experience of the banking era and the 2096 attack in ways that the published memoir, written for a general audience twelve years after the events, does not fully capture. The panel is grateful, and notes that the younger Dr. Ferreira-Perry's own account of her role in the moment that stopped the engagement countdown — "I said, very clearly, 'Sir, you need to hear this'" — appears in Chapter 13 not because we planned to include her in two separate chapters but because the historical record kept producing her at significant moments, which seems appropriate.

The estate of Dr. Amara Osei-Mensah provided access to her complete scholarly archive, including drafts of the annotated Videx transmission that appear in Chapter 21 and correspondence with Dr. Kwame Osei-Fontaine — whose grandmother's grandmother she was, a connection Dr. Osei-Fontaine disclosed at our second meeting with the

observation that it created "certain methodological complications that I am choosing to treat as opportunities." Her annotations are the finest piece of scholarly writing in this book, and we have said so in the text, and we will say so here again.

The families of EarthFleet's dead, several of whom responded to our requests for access to personal correspondence and family records, are thanked here with more gratitude than this sentence can adequately express. The Memorial Register that EarthGov maintains in Geneva lists 14,217 names. We read them all. We hope this book honors what those names represent.

Maret Chen-Vasquez and Thal-Seven-Deep were generous enough to meet with the panel twice during the book's preparation — once at the Alpha Centauri cultural exchange station, where they maintain offices, and once in Buenos Aires, where Chen-Vasquez was visiting family. Their willingness to discuss the FS-Aurantia siege years with strangers who were, as Chen-Vasquez put it, "very clearly going to put everything we say in a textbook" was both courageous and useful. Thal-Seven-Deep's transmission of supplementary Gorrick records through the Hy'anx communications relay added detail to Chapter 22 that would not otherwise have been available. We note, for any student curious about the sequel: they are still in business, their firm is still operating out of the Alpha Centauri exchange station, and Thal-Seven-Deep remains better at logistics than anyone the panel has ever met.

Lyborne Industries' corporate archive provided access to engineering records from the 2042–2065 period that informed the technical sections of Chapters 7, 12, and 19. The terms of that access, negotiated over several months with the company's historical affairs division, preclude our discussing the scope of what we were shown beyond what appears in the text, or speculating about the relationship between the historical materials and the company's current operations. We thank the historical affairs division for their cooperation and note, as we note in Chapter 7, that Lyborne's full history in this period remains a subject that serious scholarship has not yet exhausted.

Personal Thanks

Dr. Achebe-Morrison thanks her research assistant, Tobias Fontaine-Osei, whose ability to locate obscure primary sources in three languages made the military chapters possible, and whose cheerful refusal to be discouraged by archival dead ends made the process of writing them bearable.

Dr. Osei-Williams thanks the oral history subjects who agreed to speak with him about the social history chapters — more than sixty individuals, ranging in age from their forties to their nineties, whose willingness to discuss difficult periods of their lives and their families' lives with a historian they had never met was an act of generosity that this book does not fully repay and cannot.

Dr. Vasquez-Mensah thanks Dr. Priya Nair's family for making available the correspondence and personal papers

that confirmed details of Chapter 7's account of the procurement oversight panel — documents that the official archive does not contain and that the family preserved with no apparent expectation that anyone would ever ask to see them. Someone asked. We are glad.

Dr. Osei-Fontaine thanks the Hy'anx archival collective, whose willingness to provide access to League records from the pre-war period — records that no Human scholar had previously been permitted to consult in their original notation — transformed several chapters and produced, in the process, the most unusual research experience of his career. He notes that working with an archive whose librarians share a hive consciousness and can therefore answer any question instantaneously, with complete accuracy, and without the faintest trace of the archival vagueness that Human institutions have perfected across centuries of practice, is simultaneously extraordinary and slightly disconcerting. He means this as a compliment.

Dr. Andersson-Park thanks her grandmother, Linnea Andersson, who told her stories about New Zealand and Sweden and relocation and the war and the world before she was born, and who died in 2129 with the characteristic Swedish practicality of someone who had decided she had said everything worth saying and did not see the point in lingering. She was right about most things. This book is dedicated, in part, to her memory.

The panel collectively thanks the students who will read this book — who are, after all, the reason it was written. History is not a closed account. It is an ongoing

conversation between the people who lived through things and the people who inherit what the living-through produced. You are the inheritors. We hope this book gives you something worth inheriting.

And we thank, without reservation and without adequate words, the people who built the world described in these pages: the engineers and soldiers and diplomats and ordinary citizens who were afraid for a very long time and kept going anyway. They could not have known, most of them, that anyone would remember. We remember.

— *The Panel EarthGov Institute for Galactic Studies*
Geneva, 2140

Also by Don Jones

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Endless Sky: Old Bones

Endless Sky: End Game

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A tongue-in cheek take on ghost stories, with our hero, Bob, pretending to be an exorcist to scam money out of gullible people. With the help of his ghost friend, of course. It's all just a con... until Bob's past starts to catch up with him, and it suddenly becomes all too real.

A House of Forgotten Quests and the Dragons That Lie Within

A richly imagined literary fantasy in the Victorian style, pondering the question, "what becomes of people who engage on a great, world-changing quest... only to abandon it before its conclusion?" Dr. Alastair Finch must not only answer the question, but also take up some of those quests, if he's to unlock the Gateways and release our world's true source of courage and inspiration: Dragons.

Imperium Galactica

Imperium Galactica is an epic science fiction novel set in a galaxy governed by a single, ancient dynasty whose monopoly on

interstellar travel keeps thousands of worlds in perpetual dependency. When nineteen-year-old Kaiden Kentur is thrust from his family's minor mining operation into the heart of Imperial politics, he discovers that the empire's foundations rest entirely on a lie — and that he may be the only person alive with the ability to dismantle it. Equal parts political thriller and coming-of-age story, *Imperium Galactica* asks whether genuine change is possible in a system designed to absorb and neutralize every challenge to its own survival.

The Duck Creek Mysteries

A series of cozy mysteries—think *Murder, She Wrote*, where there's no blood, no "spice," and no violence—set in the idyllic (and real-world) mountain town of Duck Creek Village, Utah. Each novel focuses around a piece of mysterious mountain lore, which is what first attracts our heroes—until they become embroiled in more mundane mysteries that threaten the tranquility and harmony of the mountain.

The Mystery of the Starlet's Shadow

The Mystery of the Hermit's Hideout

The Mystery of the Navajo Neptune

The Mystery of the Rhoades to Ruin

The Mystery of the Sasquatch's Trail

The Mystery of the Stone People

The Mystery of the Golden Talon

The Mystery of the Ghost of the Iron Horse

The Mystery of the Coyote's Ember

The Mystery of the Golden Eagle • A Duck Creek Junior Mystery

Cedar Mountain Campfire Stories

Clean & Wholesome - All-Ages Appeal

Recommended for readers 7th grade and up

eBooks on Amazon and Kindle Unlimited

Paperbacks available everywhere

Free Novels Available on DonJones.com

The Achillios Chronicles

In the desert city of Alabaster, thirteen-year-old Taryn is the only one who can hear the ancient Tower's true voice, discovering its weather-altering machinery holds a secret far darker than its life-sustaining hum. As he unlocks the truth behind his ancestors' arrival, he realizes the planet Achillios wasn't a world to be settled, but a final, desperate refuge. Now, Taryn must confront the chilling reality that the door locked five centuries ago was never meant to keep people out—it was built to keep a warning in.

Alabaster • Onyx • Verdant

The Prime Wave Accounting

For eons, Michael has "corrected" the universe's design flaws by incinerating tens of thousands of worlds, viewing destruction as mere accounting rather than cruelty. But when World 72,664 defies his calculations, the cosmic janitor is forced to stop following the math. *The Prime Wave Accounting* is a gripping trilogy about a burnt-out god who finally decides to give a damn, even if it means breaking the universe he was built to save.

Power Wave • Superior Wave • Supreme Wave

These are also available in the Kindle store, and in paperback format, on Amazon.

About the Author

Don Jones is a multi-award-winning author of fantasy, science-fiction, cozy mysteries, and cozy fantasies. After a career in tech, numerous positions at tech startups, and more than sixty published tech books (the ones they seemed to sell by the pound, back in the day), Don left it all behind and started writing down the stories that had been banging around in his head. The result is more than two-dozen novels—with more every year—that have received rave reviews and numerous industry awards. Today, Don writes primarily from a cabin near Duck Creek Village, UT, diligently overseen by a Goldendoodle named Corentin.

