



# Abstracts and Backgrounds for NavyCon 2020-A Talks

---

## Introduction

Welcome to NavyCon 2020-A! We are excited to bring you a whole host of talks from across the science fiction multiverse! Here you will find the abstracts typical of an academic conference. We have also included a brief collection of backgrounders drawn from our speakers to give you the science fiction context you need to enjoy each presentation to its fullest. Some of you may have a strong grasp of everything, and may find this primarily helpful in contextualizing our speakers' arguments. Others may rely on the information provided for the full context of the talk. However you use it, we hope you find it helpful!

---

---

<b>Introduction</b>	<b>1</b>
<b>Cyberpunk/Post Cyberpunk</b>	<b>4</b>
Understanding Offensive Cyber Operations through FICINT	4
Abstract	4
Backgrounder	4
<b>Enderverse</b>	<b>5</b>
Ender's Hope: Diplomacy, the Media, and the Role of Force in the Enderverse	5
Abstract	5
Backgrounder	5
Our Own Worst Enemies: Fighting the Formic Wars	6
Abstract	6
Backgrounder	7
<b>Multiversal</b>	<b>8</b>
All Aboard: Naval Power in Joint All Domain Operations	8
Backgrounder	8
NavyCon...How about MarinerCon!	10
Abstract	10
Backgrounder	10
Science Fiction: Ideations and Explorations for Modern Leaders	11
Abstract	11
Training the Future Fleet: Space Cadets	12
Abstract	12
Backgrounder	12
<b>Star Trek</b>	<b>14</b>
Move Along Home: Borrowed Space in a Naval War	14
Backgrounder	14
Resistance is Agile: AI Vulnerability as Illustrated by Starfleet Counter-Borg Tactics	15
Abstract	15
Backgrounder	16
The Tip of the Bat'leth: Adopting the Expeditionary Mindset of the Klingon Defense Force in 24th Century Joint Space Operations	16
Abstract	16
Backgrounder	17
<b>Star Wars</b>	<b>18</b>
Fighting the Galactic Anarchy: The Ships of the Imperial Navy	18

---

---

Abstract	18
Backgrounder	19
The Slap Heard Round the Galaxy: Poe Dameron & the Importance of Military Justice in Star Wars	20
Backgrounder	20
Vanguards of Hope: How Starfighter Command was the Key to the Success of the Rebel Alliance and New Republic in the Galactic Civil War	20
Abstract	20
Backgrounder	21
“War. It’s all you’ve ever known, isn’t it?”: A Leadership Comparison of Grand Admiral Thrawn and Hera Syndulla	22
Abstract	22
Backgrounder	23
<b>Warhammer 40K</b>	<b>24</b>
Reforging the Blade: Imperium Force Design After The Horus Heresy	24
Abstract	24
Backgrounder	24

## **Cyberpunk/Post Cyberpunk**

### **Understanding Offensive Cyber Operations through FICINT**

#### Abstract

The use of “fiction intelligence”, or FICINT, has seen growing acceptance as an analytic methodology within the Department of Defense, building on a tradition of speculative and science fiction going back well over a century seeking to envision future wars. It offers a mechanism for understanding problems that due to their novelty, classification, or other sensitivities prove challenging to discuss in more “serious” formats. Nowhere is this better illustrated than in the cyber domain. Since the inception of this operating environment, fiction has anticipated the dynamics of the warfighting domain – often more accurately than other formal analytic efforts. This talk will trace our evolving concepts of contested systems and networks, and explore how FICINT can assist in understanding competition and conflict interactions. We will examine the insights offered by core authors of the (post)cyberpunk canon including William Gibson, Bruce Sterling, Walter Jon Williams, Neal Stephenson, John Brunner, John Shirley, Pat Cadigan, Rudy Rucker, Richard K. Morgan, and others – as well as the extended community of imagination adapting this work in gaming publications. Against this backdrop, we will consider the parallels to real world missions – starting with key US Navy activities that have remained largely unknown until recent declassification. We will then look towards the further development of FICINT as a structured technique, to outline the horizon of offensive cyber operations that we may yet see come to pass - and the ways in which the literature may impact the warfighters that will follow us.

#### Backgrounder

The following summary abstracts are intended to help orient the NAVYCON audience across a body of works that will be referenced in the talk. These are by no means comprehensive treatments of the contributions and art of these authors and creators, nor

the entirety of the related corpus, but rather are short digestible grafts intended to introduce key concepts from selected works within the literature. Readers are warmly encouraged to seek out the original texts for their further immersion.

*Shockwave Rider* - John Brunner

This early proto-cyberpunk novel explores the changes to society, and governance, that come through aggregation and control of personal information within large platforms. While very much an artifact of its time, the author nonetheless glimpsed key changes coming as economies pivoted to compete across new dimensions where privileged access to nonpublic information is key. His protagonist is a fugitive that we would now recognize as a hacker, whose life was shaped by clandestine government programs and who ultimately will reveal the details of these activities, including genetic engineering, to the world through the use of self-propagating malware: coining the term “worm” to describe the capability. This hacker would also compromise nuclear command and control systems to countermand orders for a retaliatory strike.

*Neuromancer* - William Gibson

Perhaps the first major work in the cyberpunk canon, Gibson welded threads from his earlier work across several short stories to describe a world in which competing corporate interests engaged in espionage and covert action to advance their interests, leveraging the abandoned tools of prior military conflict (including a limited nuclear exchange) as well as nonstate innovation. While the primary story arc traces a complex tale across multiple operations ultimately driven by hard questions involved in dealing with the challenges posed by sufficiently sophisticated artificial intelligence (AI), the backstory of one of the key antagonists is our focus in this talk. The character Armitage is a survivor of a wartime mission to infiltrate Russian territory and execute offensive cyber operations against key command and control targets. As in many special operations activities, successful action on objective is only a small part of the challenge, and it is the exfiltration and its aftermath that comes to define him. Armitage in his madness is subsequently shaped by interactions with AI, mediated through an early kind of social media, in order to provide direction to the main characters’ efforts to conduct intrusions against multiple networks in pursuit of high value objectives. These networks are described as protected by defensive cyber operations

---

capabilities, including intrusion countermeasures developed and constantly updated through AI.

*Count Zero* – William Gibson

While there are multiple narrative arcs within this novel, it explores the dynamics of technology research and development and the uses for which such technologies are found in the market – including by the incalculably wealthy and those among the most marginal. A private military contractor is hired to extract a key biologic computer scientist under a restricted lifetime contract from a closed research facility. This operation is conducted using both physical and network intrusion, and faces unexpected difficulty both involving the target himself and consequences of detection. The fugitives subsequently must navigate relationships with criminal hackers, syncretic religions, art dealers, and emerging artificial intelligences in order to find their way through.

*Freeing the Angels* – Pat Cadigan

This short story lays out a simple heist plot, common in cyberpunk, in which characters at the fringes of society must steal something guarded by corporate owners. In this case, that something raises provocative questions about the nature of our understanding of reality. But it is the mechanism of infiltration that is of interest – both in the requirement for physical access, but also in addressing the challenges of intrusion countermeasures driven by machine learning.

*Hardwired* - Walter Jon Williams

This novel envisioned a number of the most iconic scenes that would become staples of the genre – a Balkanized United States with armed state borders, extraterritorial corporate zones, and complex smuggling challenges moving goods, money, and people in the face of law enforcement shaped heavily by private military companies. (Perhaps coincidentally, it also foresaw the importance of the “delta” for space operations). The work raised new insights involving man/machine interface with combat platforms, distributed networking between combatants, the transformative potential of high-speed financial transactions across competing regulatory regimes, and the unthinkable aftermath of kinetic orbital strike options. But beyond this, it also envisions the lengths to which some actors may go in

---

acquiring access to targeted networks, and what these operations may look like, from preparation to their often-messy ends when dealing with deniable and ultimately disposable assets.

*Cyberpunk 2013 / Cyberpunk 2020* – R. Talsorian Games

A tabletop role playing game (now gaining prominence in the popular consciousness thanks to its long-delayed console gaming release). Cyberpunk designer Mike Pondsmith created a compelling framework in which to integrate ideas from the genre's stories and media for players looking at alternatives to *Dungeons and Dragons*. One of the key innovations of the game was the representation of cyber operations, previously often conveyed only as a dream-like abstraction in text. While lacking much in terms of operational fidelity, and incorporating mechanics borrowed as much from magic systems as code, it was nonetheless an interesting early step.

*Shadowrun* – FASA / Catalyst, et al

The popularity of the cyberpunk genre for roleplaying gaming spawned its own unique property from the collision of those who wanted to explore these new worlds, but also missed their fantasy conventions and characters. Thus, *Shadowrun* attempted to craft a world in which the now-classic "high technology" and "low life" themes of cyberpunk could co-exist alongside elves, dragons, and wizards. The result was widely enjoyed, albeit often despite the scorn of genre purists. But we focus here on their vision of cyber operations – in which so-called "fluff" of worldbuilding to explain the proliferation of key technologies to competing corporate interests that would engage in deniable cyber espionage and intrusion operations accurately predicted the military origins, and subsequent critical early advantage, accruing to those engaged in formative missions for a kind of small-c "cyber command".

*Distraction* – Bruce Sterling

This late cyberpunk novel, while crafted in the 90's, remains stunningly relevant to the current political moment. Sterling proved he remains a master among the genre's creators, packing in radical ideas that the reader will encounter at a furious pace – from civil-military relations problems of abandoned bases and their tenant commands forced to fundraise in

the absence of federal appropriations, through highwayman-like extortion enabled by intrusion-driven data mining, to competitive sabotage between opposing biomedical research labs, to the challenges of dealing with fully mediated / lifelogs law enforcement interactions within an uncaring framework of procedural protocols. Yet we draw out from this work the implications of malicious attempts to shape political discourse through disinformation messaging, enabled by compromised systems and networks in ungoverned jurisdictions – problems that may indeed require military response.

## **Enderverse**

### **Ender's Hope: Diplomacy, the Media, and the Role of Force in the Enderverse**

#### Abstract

*Ender's Game* is often seen as a story about strategic brilliance and the willingness to do everything it takes to survive, including devoting yours and your children's lives to the study of warfare and the annihilation of another race/species. But at its core it is a story about compassion and finding a way to communicate, to live together, and to ensure that time is taken to totally understand a situation before taking action.

The Formics had absolutely no idea that humans were sentient, and did not realize it until after their second wave. It is clear from their dialogue at the end of the book that they would not have attacked in the first place had they understood. Diplomacy and communication would have had its place, had they had the ability to engage in diplomatic actions. The use of the fleet for their colonization efforts possibly hampered diplomatic efforts—while a navy is useful to help project power and protect friends, it is not a good way to communicate peaceful intentions to competitors or enemies.

After the first two waves of attack, humans were driven by fear, which drives out almost any other emotion or intention. Throughout *Ender's Game*, Ender seems to understand that something other than fear could and should be considered, but he is a product of his



---

society and was literally born for the purpose of warfare. Compassion, understanding, and intentional communication are the hallmarks of good diplomacy—total annihilation is the opposite.

### Backgrounder

The Formic Wars began when a hive-mind species known as the Formics attempted to terraform Earth for colonization, not realizing that Earth was inhabited by sentient beings. After a second wave of attack and the near-annihilation of the human race, the Formic queens realized that they were attacking a sentient race and, unbeknownst to the humans, determined to never return. By that point, the human perspective was that, in order to ensure the continuation of the human race, an offensive was required—an offensive led by children.

The humans focused on annihilating the Formics, colloquially known as “buggers.” The brightest children were trained from toddlerhood as the humans searched for the strategist who would defeat the buggers and save the human race. Ender Wiggin, a brilliant strategist with uncanny compassion and a strong survival instinct, participated in the training games to become the strategist the human race required. He used both compassion and intelligence to learn his enemy and defeat them, as well as to develop and lead his team.

As a part of a final “simulation”, thanks to Ender’s brilliance and ability to win against the odds and to gain the trust and devotion of his peers, Ender defeats the buggers, destroying their world. Ender finds out that the “simulation” was not a simulation at all, and that the final battle sequence was being fought in real time, in real life, 50 light years away. Ender, compassionate and not a killer by nature, is overcome with guilt and travels to an abandoned bugged base to learn more about his enemy. There, he finds that the Formics were not eliminated entirely, and he takes the opportunity to learn their truth and take steps to preserve their future.

## **Our Own Worst Enemies: Fighting the Formic Wars**

### Abstract

As we follow Mazer Rackham and a host of other individuals through the Formic Wars, we find that flaws in human leaders and the systems they create are as large of a challenge to our protagonists as the strengths of the Formics. Many characters' attempts to point out dangers, flaws, or holes in human strategies are ignored or even covered up by governments and leaders who are unwilling to admit weakness or risk their own standing. Rackham fights an uphill battle against stubborn elements of bureaucracy, and the frustration he often experiences is an accurate reflection of concerns and challenges for today's Navy. Sailors routinely express dissatisfaction with how the evaluation systems at both personal and operational levels favor assets which check all the right boxes over those that are truly proficient and efficient. In-depth reviews of U.S. Surface Fleet operations identified how a "can-do" attitude masked weaknesses in the force and became a factor in recent collisions and groundings. There are many internal personal and cultural elements Navy leadership could improve to increase fleet-wide effectiveness; watching a character like Mazer Rackham have his attempts to save the human race stifled by very human flaws should help leaders commit to introspection, identify these flaws, and find the courage to make changes to benefit their Fleet and their Sailors.

### Backgrounder

The First and Second *Formic War* trilogies are the prequels to *Ender's Game*, a book which has become a staple of military reading lists for its insight into tactics, strategy, and leadership. The *Formic Wars* trilogies take us back to the initial alien invasion of Earth and the surrounding Solar Systems. In the first trilogy, a race that humans dub the "Formics" successfully plant a scout ship in orbit, land their spacecraft in mainland China, and proceed to cause enormous devastation and loss of life in their attempt to terraform Earth. Through the heroic actions of a few civilians and military personnel, including the original series' famous Mazer Rackham, mankind is able to destroy the land-based ships as well as the ship left in orbit. The first trilogy ends with the devastating realization that Earth has only beaten back the very first Formic wave.

The second trilogy features Earth's attempt to create a large space-going military to defend humanity. After realizing the Formics are in nearby space organizing for another battle,

Earth authorizes creation of a Hegemony to direct the war effort. Rackham and his allies struggle to adapt to the new military/political system as they prepare to fight an enemy unlike anything they've ever encountered. They become convinced that the formics are led by a single entity--a Queen--but must fight to convince the world to accept their theory and adapt strategy accordingly. Although we are still waiting for book #3 in this series to be published, we know from "Ender's Game" that the invasion will be ended almost single-handedly by Mazer Rackham with the destruction of the Hive Queen.

## **Multiversal**

### **All Aboard: Naval Power in Joint All Domain Operations**

#### Abstract

Naval power must be more centrally integrated into Joint All-Domain Operations (JADO). JADO is the operating concept for the next evolution of American military operations across the continuum of competition. Gen Milley, Chairman of the Joint Chiefs of Staff has designated the U.S. Navy responsibility for developing a JADO concept for globally integrated joint fires, pairing every sensor to every shooter across the Joint Force. While highly effective at coordinating fires internal to Naval operations, Naval capabilities are not effectively integrated into Joint All Domain Operating Concepts despite the ability of Naval assets to pass sensor and targeting data across tactical datalinks (TADLs). Joint Fires and Naval Power are critical to the effectiveness and credibility of Joint Force operations across the continuum of competition, to include providing credible deterrence. The Navy must get truly "All Aboard".

## Backgrounder

*Battlestar Galactica* is a space opera that was originally a 1970s television show which was remade as a 2003 mini-series, then picked up as an episodic TV series. It centers around the human struggle of a small group of survivors after an apocalyptic battle between humanity and their artificially created enemy, the Cylons. The characters are relatable and the struggles are intense, but there's so much more to the universe than just the story. While the combat in this universe is centered around absolute war as the two sides struggle for existence, the political structure of the 12 Colonies is reflective of the way we should be viewing naval power in the modern era. This includes not just the relative expense of a warship (each colony world can only afford to create a single Battlestar-class vessel) as well as their employment in combat (carriers for large numbers of small craft), but that naval power is the central hinge in the military machine. *Battlestar Galactica* is an example of the vital importance of naval power in a society that has moved past the point where the cost of projecting power is higher than the return payoff. Through humanity's mastery of faster-than-light travel, this society provides an example that is close to a modern political and economic structures. It thus shows us the central importance of increasing both the interoperability of naval forces as well as the central role they must play in future operational campaign planning. The Earth is shrinking in the 21st century, and naval power is the future.

*The Expanse* is a space opera book series written in a near-future scenario, where a bipolar system has developed between the Earth and Mars. Both nations are focused on assuring access to the material wealth of resources harvested from the asteroid belt, and as a byproduct they exploit the people who live in the Belt for that access. Both Earth and Mars are independent, but they do not recognize a sovereign nation in the group known as the Belters that have made their homes in the asteroid belt. Earth has developed into a post-scarcity society where the basic needs of all are met regardless of activity; however, to gain access to more resources and a better quality of life than basic welfare, citizens must work to create value for the society in some way. Mars, on the other hand, still relies heavily on importing necessary volatiles and requirements for life, and is focused on terraforming the planet to allow human life on the surface. This political structure is very similar to the mid-to-late 20th century on Earth. The common thread between reality and the fictional

---

*Expanse* universe is the presence of naval forces. In *The Expanse*, they take the form of space fleets, including heavy attack craft, as well as faster and lighter support vessels. Earth has far more resources, but Mars has the upper hand in technology. The major warships and fleets are still fantastically expensive and operate largely out of direct communication with higher headquarters. Full-scale naval engagements are avoided due to the cost and nature of these fleets, and thus they tend to fill modern, yet traditional, naval roles: strategic deterrence, presence, and anti-piracy. The political, economic, and technological systems in *The Expanse* parallel the mid-20th century on Earth, and thus push naval power to fall in line with Corbett's theory of limited naval warfare: secure the ports, control the lines of communication, and preserve the fleet-in-being.

### **NavyCon...How about MarinerCon!**

#### Abstract

What has been missing from the last two NavyCons? The answer is simple, the other half of ~~Sea Power~~ Space Power, the merchant marine! One only needs to examine science fiction to understand that the underpinning of Space Power is the commercial application and the role played by spacefaring merchant mariners.

Han Solo, the captain of the *Millennium Falcon*, is described as a bounty hunter, mercenary, and privateer, but he is the owner and master of a vessel and therefore the very definition of a space mariner. Captain Malcolm Reynolds of the *Firefly*-class freighter *Serenity* is perhaps one of the best iterations of merchant mariners in space. He and his crew are continually trying to "keep flying" by finding jobs and hauling cargo, from a frozen girl to cows. First Mate James Holden of the ice hauler *Canterbury* and its survivors become the focal point of *The Expanse* onboard their repurposed Martian gunship, *Rocinante*.

Whether it is fighting Orion pirates in *Star Trek*, the inner workings of the Trade Federation in *Star Wars*, or trade routes in the Honorverse, the commercial control of space proves a key component to much of science fiction. Yet, while we see spacefaring races go to war over such commodities as Spice, why is it today that the leading naval power in the world –

---

the United States - relies for its trade on foreign-flagged ships? Would the Federation, the Empire, the Alliance or the United Nations allow their enemy or other entities control their trade?

### Backgrounder

The usual trope about space is that it is large and devoid of any matter, which is exactly true. Most science fiction is filled with space navies vying for control of key areas and pitched battles. Yet most of the craft flying in space, as on the world's oceans, are not military craft, but civilian. Of those ships, a large percentage of them are engaged in commerce, delivering raw material and finished commodities to different nations and civilizations. When one peels back the layers of many works of science fiction, the merchant spacer (vice mariner) can be found at the heart of the stories. Many of these space mariners are irreverent and defy the rules and regulations of the authorities. In other cases, they provide the necessary background and training to aid or even create the space navies in the execution of their missions. The depiction of space cargo ships range from the comical garbage scow from the series *Quark* to the lifeboats for the Twelve Colonies in *Battlestar Galactica*. As in the real world, these mariners – whether on the ocean or in space – provide the needed services to ensure that civilians and the military receive their necessary supplies and logistics. Their depiction is usually overshadowed by the confrontation between fleets, but it nonetheless essential to the preservation of societies. It is time for Space Mariners to emerge from behind the scenes of NavyCon!

## **Science Fiction: Ideations and Explorations for Modern Leaders**

### Abstract

My goal was to create a course for Naval War College military, interagency, and international students that examined the relationship between science fiction and the formation of ideas in human affairs. Students could evaluate what science fiction tells us about technological change, war, politics, ethics, disease, and, crucially, what it means to be human. They could also explore how science fiction and reality influence each other to better discern how techno-scientific changes—real or imagined—may shape the modern world.

The course focused mainly on books and short stories from the sci-fi pantheon plus occasional television episodes from *Battlestar Galactica* (2003) and *Star Trek* (1967). Readings also included scholarly articles that dissect various aspects of the genre and its relevance to modern leaders.

The lessons were organized thematically to address ethical issues and techno-scientific realities of the modern era. These themes included: perspectives on science fiction's value from contemporary authors and scholars; unprincipled creation and the legacy of Frankenstein; ways to think about AI and cyborgs; "useful fiction" as a lens on the near future; sci-fi's insights concerning politics, strategy, and statecraft; fictional scenarios of pandemics; military perspectives in science fiction; pathways to utopian and dystopian futures; and Chinese perspectives in modern science fiction.

Overall, this presentation examines how a course on classic and contemporary science fiction informed leadership and security challenges imposed by AI, biotechnology, surveillance regimes, and other emerging capabilities. Did rising leaders gain new insights on how to think about the present and shape the future?

### **Training the Future Fleet: Space Cadets**

#### Abstract

A discussion of the role of training academies for forces in science fiction. Writers such as "Doc" Smith, Heinlein, Roddenberry, Lucas, Weber, and many others have training academies play a major role in the development of their characters. They foresee that every action, whether earthbound, on some other planet, or in space, will require trained personnel to engage with alien races or even (perhaps especially) with our own species as humans develop the "out there." This interaction may range from maintaining peace to engaging in total war. It may involve fighting space pirates, or other criminals. Or it may involve resisting elements from colonies who seek to disrupt the lines of communication from other colonies. These authors recognize that certain training is invaluable in officers, with sound historical backing. A description of naval officers from *The Long Road to Annapolis* expresses it thus:

"The naval officers of the early republic were "armed ambassadors" who represented and defended the United States and its citizens on the high seas and in foreign lands. The professional and personal improvement of naval officers, as America's most visible citizens, became an important national issue since other nations would judge the United States and its republican character based on the merits of the naval officer corps."

Replace the earthbound terms with space terms, and the "armed ambassador" paradigm fits very well in describing the importance of having training to smooth interactions with other space races. That training is the purpose of the academies.

### Backgrounder

Science fiction works often create schools akin to naval academies or other military academies for training future fleet officers, e. g. "Starfleet Academy" (*Star Trek*), "Imperial Academy" (*Star Wars*), "Space Patrol Academy" (*Space Cadet*), the unnamed "Galactic Patrol academy" (*Lensman* series), Saganami Island (*Honor Harrington* series), and others.

The *Lensman* series by E.E. "Doc" Smith establishes the idea of a "Galactic Patrol" whose members are identified by a "lens" that: "gives its wearer a variety of mental capabilities, including those needed to enforce the law on alien planets, and to bridge the communication gap between different life-forms." This series may have been the first in science fiction to describe an academy under the leadership of a Commandant of Cadets. At the graduation of a new class (out of 1 million applicants there remain but 100 graduates), the Commandant speaks of the harsh weeding-out process

"That explains what you have been forced to undergo. The only excuse for its severity is that it produces results--no wearer of the Lens has ever disgraced it. \*\*\*  
"In conclusion, you are now able to understand what kind of mentalities fill our ranks. You know that any creature wearing the Lens is in every sense a Lensman, whether he be human or, hailing from some strange and distant planet, a monstrosity of a shape you have as yet not even imagined. **Whatever his form, you may rest assured that he has been tested even as you have been; that he is as worthy of trust as are you yourselves.** My last word is this--Lensmen die, but they do not fold up: individuals come and go, but the Galactic Patrol goes on!" (emphasis added)

In *Starship Troopers*, Robert Heinlein describes training that imbues its survivors with both self-confidence and a recognition of the merit and trustworthiness of other graduates of the boot camp. In his "juvenile series" book *Space Cadet*, the protagonist attends the "Space



---

Patrol Academy” and matures into a leader who can appreciate his fellow classmates because of their shared training, values, and experiences.

The clear emphasis of both the Lensmen training and the Space Patrol Academy is on strength of character and the willingness to do what is right even under the most difficult of circumstances. Heinlein’s *Space Cadet* placed midshipmen in situations in which their internal moral compasses were rigorously tested. Heinlein was, of course, a U.S. Naval Academy graduate. His experience at that school is evident in his works--one reviewer, discussing *Space Cadet*, described it as “Annapolis in Space.”

Because they are voyaging into the unknown, *Star Trek* Captains Kirk, Janeway, Picard, Sisko, Archer, and the rest of Starfleet are by necessity governed only by limited instructions or general orders such as Starfleet’s Prime Directive: “General Order 1: “No starship may interfere with the normal development of any alien life or society.” Thus, Starfleet relies on the initiative of its starship captains regarding how to best approach other sentient life forms. In this vein, in the *Star Trek* movie *The Wrath of Khan*, James T. Kirk defies the rules of his academy, quite literally cheating by changing the programming of the otherwise no-win *Kobayashi Maru* problem, which was designed to see how officer candidates dealt with a situation in which there were no good options. Kirk was not punished for his cheating, but instead rewarded for his initiative in altering the problem.

In the *Honor Harrington* series, Manticorian Navy cadets receive warfighting training at a tactical level. David Weber has referred to the *Honor Harrington* series as “Horatio Hornblower in space,” a reference to the novels of C.S. Forester, though a major distinction is that in the Hornblower books, officers learn their trade through being at sea, often starting as very young boys, instead of going through an academy.

## **Star Trek**

### **Move Along Home: Borrowed Space in a Naval War**

## Backgrounder

*Star Trek: Deep Space Nine* is the fourth of the *Star Trek* franchise series, first airing in 1992. Set far from Earth, on a space station called (unsurprisingly) Deep Space Nine, the series deals with questions of intergalactic politics, diplomacy, and war. It is the only *Star Trek* series (so far) that focuses on the activities of Starfleet on a base instead of on a ship.

The station known as Deep Space Nine is not Federation property. It is a former Cardassian space station in Bajoran space, and the Federation is only there (in the form of Starfleet) because Bajor asked the Federation for help in maintaining the station when the Cardassians withdrew from the station after 50 years of occupation. Starfleet runs the station, but it remains Bajoran sovereign territory. Conflict between the Cardassians, the Bajorans, and the Federation make up a significant portion of the stories in the show.

Deep Space Nine is also unique in the *Star Trek* universe in that the station is host to a large number of civilians, both resident and transient. The space station takes on strategic significance when a wormhole to another part of the galaxy, the Gamma Quadrant, is discovered, and the station is moved to serve as gatekeeper for the wormhole. Thus, DS9 becomes the site of not only existing intragalactic tensions in the Alpha Quadrant, but the first site of both new opportunity and new conflict with unknown civilizations in the Gamma Quadrant.

## **Resistance is Agile: AI Vulnerability as Illustrated by Starfleet Counter-Borg Tactics**

### Abstract

“How the hell do we defeat an enemy that knows us better than we know ourselves?”

Commander William T. Riker, *USS Enterprise*

In its ongoing exploration of the galaxy, Starfleet has encountered a wide range of species and civilizations, from primitive to advanced, peaceful to belligerent. Of all the many belligerent species, there is perhaps none more fearsome than the Borg. An advanced race of drone humanoids, the Borg “Collective” is a prototypical hive mind charged with carrying

---

out the Borg's day-to-day operations – C2, system maintenance, navigation, combat - and ensuring adherence to its *raison d'être*: the forced assimilation of technologies, cultures, and civilizations. The Borg Collective is essentially a highly distributed artificial intelligence (AI).

While the underlying missions may be wildly divergent, there are numerous parallels between the Collective and the integrated, cross-domain AI that will come to underpin and define the future force operating structures of U.S. and adversary forces alike. Starfleet's struggle against the Borg is illustrative of what will be the core mission for tomorrow's distributed, autonomous forces: defeating an adversary powered by an increasingly omnipotent and omniscient AI with access to near-perfect, real-time knowledge of strategy, operations, tactics, order of battle, and courses of action. Faced with an enemy seemingly invulnerable to kinetic attacks, the key to victory will lie, as it did for Starfleet, not only with innovative non-kinetic weapons and effects, but in the decidedly human characteristics of cunning, imagination, and even recklessness to deceive, manipulate, and overcome a non-human enemy.

#### Backgrounder

Of all the many belligerent species encountered by Starfleet in its exploration of the galaxy, there is perhaps none more fearsome than the Borg. An advanced race of drone humanoids, the Borg have but one mission: to assimilate all species into a larger collective – a distributed hive mind charged with the administration of the Borg's terrifying, single-minded mission. There is no reasoning with the Borg, no appealing for peaceful resolutions. There is simply one fate: assimilation, embodied in their now (in)famous refrain, "Resistance is futile." The Borg's offensive and defensive capabilities are highly advanced, as they have assimilated the knowledge and technologies of countless civilizations. When met with force, the Borg quickly adapt and deploy countermeasures versus any weapons wielded against them, rendering the species largely invulnerable to kinetic attacks. Massed fires employed in random, haphazard salvos are sometimes effective, but typically serve only to briefly disrupt the Borg's adaptive defenses in order to forge an escape. Simultaneous, devastating kinetic attacks against Borg network nodes have been shown to be effective, as have novel weapons such as quantum and transphasic torpedoes, but the Borg's adaptive capabilities continue to pose a challenge. With few

---

kinetic options, Starfleet turns to low-tech manipulation and deception tactics, as well as non-kinetic effects, such as the insertion of a malware-like exploit commanding the Borg to “sleep,” or the use of an injured Borg drone as a trojan horse, or the injection of nanites - micro-robotic devices - into the Borg network, although the use of certain effects is hamstrung by moral and ethical considerations.

## **The Tip of the Bat’leth: Adopting the Expeditionary Mindset of the Klingon Defense Force in 24th Century Joint Space Operations**

### Abstract

Since the end of the Dominion War in 2375, challenges to galactic security have increased in both number and complexity. In addition to the conventional threats posed by the Borg and Romulans, non-state actors and terrorist groups from Cardassia to Orion pose challenges that only new and dynamic solutions can address. Due to Starfleet’s separate and often conflicting missions of exploration, humanitarian relief, and security, starships have grown larger, more complex, and far more expensive. Today, Starfleet’s doctrine is overwhelmingly focused on multi-role heavy cruisers such as the *Galaxy* and *Sovereign* classes. This inherently changes Starfleet’s doctrinal focus from projecting to preserving combat power. Smaller, more efficient vessels are forced to protect flagships, while the ability to quickly and efficiently deploy forces onto planetary surfaces continues to decline.

In contrast, the Klingon Empire believes that the individual marine is its pacing item for all operations. The focus of the Klingon fleet is the *Vor’cha* attack cruiser whose primary mission has always been transporting, supporting, and sustaining a Marine Expeditionary Force. Smaller vessels such as the *B’reI* class bird of prey can simultaneously protect the cruisers or act independently as reconnaissance, atmospheric close-air support, or logistical resupply craft. The Klingon Defense Force is structured as a versatile, joint force which can easily scale its response to the different threats it encounters.

This paper argues that Starfleet should re-focus its doctrine and composition towards the Klingon model to meet the growing and diverse threats of the late 24th Century.

## Backgrounder

At the end of the 23rd Century, the First Khitomer Accords ended seventy years of hostility between the United Federation of Planets and the Klingon Empire. The Federation refocused its resources on exploration and expansion. Starfleet constructed new, larger vessels such as the *Excelsior*, *Ambassador*, and *Galaxy* classes. These heavy, multi-role starships allowed the Federation to conduct longer-duration space missions and humanitarian relief operations on planetary scales. Unfortunately, eighty years of peace severely atrophied Starfleet's tactical capabilities. Beginning with the Borg in the 2360s, Starfleet realized that it was in a severely compromised position when facing new, dynamic military threats.

Concurrently, the 2293 Praxis explosion and resulting economic catastrophe forced the Klingon government to severely limit defense expenditures in the early 2300s. The Klingon Defense Force (KDF) restructured into a smaller "expeditionary" force that could maintain the security and integrity of Imperial territory with the fewest number of ships and troops possible. Klingon "Strike Fleets" evolved into efficient joint organizations integrating space, ground, and logistical forces together under one commander.

During the Dominion War of 2373 to 2375, Starfleet's heavy cruisers were limited to fleet actions, while Klingon Strike Fleets showcased their versatility and changed the course of many significant battles. The KDF also provided the bulk of ground forces in the Dominion War, gaining significantly more experience in ground combat and counterinsurgency operations than their Starfleet allies. This put the KDF in a better position to face the new, unique threats of the post-war galaxy.

## **Star Wars**

### **Fighting the Galactic Anarchy: The Ships of the Imperial Navy**

### Abstract

The origins of this presentation date to one given at NAVYCON 2017, where the presenter asserted that the Imperial Navy was totally lacking in anything smaller than a star destroyer and larger than a shuttle. This was a shocking assertion to me, but it made sense when considering that the author was totally reliant on the three movies that showed the Galactic Empire during its height, the post-Yavin/Pre-Endor era. This was the post-Disney Era and a chainsaw had been taken to the 30+ years of Expanded Universe works, but *Rebels* had been on the air for years and the incorporation of *Rebels* into *Rogue One* indicated the canonicity of both the *Clone Wars* and *Rebels* programs. In other words, there is ample evidence for smaller ships in use by the Imperial Starfleet.

I have striven to only use post-Disney era media as sources for this, with one notable exception: the Saxton *Incredible Cross Sections* books. The incorporation of the ICS into *Rogue One* gives, I feel, some leeway in using this pre-Disney source. Saxton's excellent insight into the economy of The Galaxy allows us to infer the extreme economic disparity between the Core Worlds, where the real power was, and the Outer Rim, where the Alliance mostly operated.

### Backgrounder

A common analytic trope is that the Imperial Navy of the Galactic Empire (GE) was a top-heavy, gargantuan force ill-suited to conduct counterinsurgency in The Galaxy. On the big screen, mile-long vessels are seen chasing smaller, agile ships across vast regions of space. The takeaway has been that these big expensive ships, culminating finally in the Death Star family of space stations, are a poor use of resources when the opposition consists of small, frequently ad hoc rebel groups.

These assumptions are incorrect.

The immediate pre-Yavin security situation for the Imperial government on Coruscant was not focused on chasing rebels around in the boonies. The GE was still a heavily federal system with powerful systems and sectors that had their own defense forces. Rather than a Third Reich, the GE was more of an Imperial Germany composed of semi-independent component states. A Core World such as Kuat or Alderaan wielded more commercial,

---

political, and military power than semi-peripheral and peripheral areas like the mid-Rim or Outer Rim. As such, the primary threat to the central government was the wealthy Core Worlds, not Outer Rim Rebels.

Despite this security situation, the Imperial Navy maintained a full spectrum of ship sizes and types, as well as drew personnel from all around The Galaxy. Very broadly, there were three distinctly “sized” groups of ships. First was the Small Boys, examples of which included multi-use platforms like the *Gozanti*, light cruisers like the *Arquitens*, and escort carriers. These either operated in constabulary roles or as part of task forces. Next were no fewer than 4 star destroyer types, not counting the Interdictor cruisers and the larger star dreadnoughts. These mid-sized ships were able to operate alone away from the logistics chain, plying the Outer Rim in a manner similar to the “cruising” missions of frigates in the 19th Century. Their immense power also made them appropriate for fleet actions, blockades, and planetary assaults. Finally, there were the aforementioned large strategic assets such star dreadnoughts, torpedo spheres, and Death Stars. These ships carried star system-controlling levels of firepower and were used accordingly.

## **The Slap Heard Round the Galaxy: Poe Dameron & the Importance of Military Justice in Star Wars**

### Background

It is a dark time for the Resistance. The 2018 *Star Wars* film *The Last Jedi*, which is set roughly 30 years after *Return of the Jedi*, portrays a galaxy once again torn apart by war. The First Order, a fascist non-state actor hellbent on galactic conquest, is on the verge of crushing the galaxy far far away under its boot heel. Having just obliterated the New Republic Senate and its entire defense fleet, only the fledgling Resistance—a small paramilitary force under the command of Princess Leia Organa—remains to fight back. The film opens as the massive First Order fleet arrives in orbit over the Resistance’s headquarters, ready to wipe them out once and for all.

Commander Poe Dameron, ace Resistance starfighter pilot and commander of Black Squadron, leads an effort to stall the First Order and give Resistance forces a chance to

---

escape. As a bloody battle ensues, Poe Dameron makes several choices that result in serious consequences for the Resistance and start him down a path of explosive internal conflict within the ranks.

## **Vanguards of Hope: How Starfighter Command was the Key to the Success of the Rebel Alliance and New Republic in the Galactic Civil War**

### Abstract

One of the most distinctive elements of the *Star Wars* franchise is exciting dogfights between starfighters, and the heroics of their daring pilots. In-universe, the squadrons of the Rebel Alliance were at once the Rebellion's primary combat arm, their most potent recruitment tool, and the embodiment of the Rebellion's core values. Starfighter Command, as the Rebellion called their corps of (space) naval aviators, was the unwavering key to the Rebellion's success, even as its pilots took horrific casualties in mission after mission. As the Rebellion coalesced into its own galactic government, the New Republic, pilots remained on the front lines of anti-Imperial diplomatic, political, and military efforts.

Pulling from the numerous *Star Wars* books, comics, and video games featuring pilots, this paper will seek to understand the motivations of these pilots and the culture of romance and rivalry they made when not in the cockpit. I will also compare and contrast the Rebellion's Starfighter Command to other revolutionary militaries, particularly to what I contend is their closest historical analog – the Continental Army during the American Revolution.

### Backgrounder

*Star Wars* premiered in 1977 and rocketed to blockbuster status on the strength of its mythology-inspired story and state-of-the-art visual effects. These two combined in the film's climax, as a ragtag force of Rebel Alliance fighter craft attacked and destroyed the evil Empire's fearsome Death Star battlestation. The scene borrowed heavily from combat footage from and films inspired by the Second World War. Since then, space battles focused on starfighter combat have been a mainstay of the *Star Wars* franchise, anchoring action scenes in most of the franchise's eleven live-action theatrical releases. These



---

sequences have inspired and informed a host of military sci-fi projects around the world, from Japan's *Mobile Suit Gundam* to domestic cult classics like *Battlestar Galactica* to Hollywood blockbusters like *Independence Day*.

The popularity of the franchise's space combat sequences spawned a genre inside the larger Star Wars multimedia empire. Several series of video games, books, and comics were released in the 1990s and 2000s under the *X-Wing* or *Rogue Squadron* banners, all mixing the action of small-ship space combat with pulpy space-opera storylines. Successors to these series continue to be part of Star Wars storytelling; the *Alphabet Squadron* book series, *Black Squadron* comic run, and the recently released video game *Star Wars: Squadrons* all style themselves as intentional continuations of this genre. In the recently completed *Star Wars* sequel films, one of the main trio of protagonists, Poe Dameron, was a fighter jock, bringing a daring, wisecracking character typical of this subgenre to center stage in the trilogy's story.

All of this focus on starfighters and the people who pilot them has made Starfighter Command the decisive branch for most victories won by the Rebel Alliance and its successor, the New Republic. Superior fighters and superior pilots allowed the Rebels to defeat the largest and most technically advanced military in galactic history. This presentation will explore how.

## **“War. It’s all you’ve ever known, isn’t it?”: A Leadership Comparison of Grand Admiral Thrawn and Hera Syndulla**

### Abstract

Both the Alliance to Restore the Republic and the Galactic Empire had horrible leadership. Darth Sidious never developed a follower capable of assuming his role; Anakin Skywalker seemed constitutionally incapable of planning; Luke Skywalker lacked resilience; and Admiral Holdo's secrecy and capriciousness led to mutiny. Leia Organa may be an exception, but she mostly fixed the mistakes of other incompetent commanders. Two bright spots on this otherwise dreary landscape are Grand Admiral Mitth'raw'naruodo, commonly called Thrawn, of the Imperial Navy, and General Hera Syndulla of the Rebel Alliance.

Studying failure lets us determine the root cause of the failure to prevent the scenario from repeating itself. Unfortunately, rarely is success treated with similar analytic rigor. Instead, we skim the surface to show only what the leader had done right without regard for why it was right and how the leader knew it. I intend to examine two equally successful commanders to determine what each did right, why it was right, and how future leaders can replicate their success.

This presentation will describe and evaluate the leadership of Thrawn and Hera at the organizational, team, and personal level. Despite the vast literature on both characters, I will limit the analysis to only the two seasons of Rebels where both characters were present. The primary argument is that while both were extraordinary tactical leaders, Hera built a far superior team while Thrawn was the only strategic thinker in the galaxy far, far away.

### Backgrounder

#### - CHARACTERS

**Grand Admiral Thrawn** – Chiss male from the Unknown Regions who entered the service of the Galactic Empire around 12 BBY. A brilliant tactician and planner, Thrawn pledged his allegiance to the Emperor, graduated from the Imperial Academy, and rapidly rose through the ranks to become a Grand Admiral. Before the events discussed here, he had demonstrated skill in small unit tactics and deception (Dromedar Incident), counter-piracy operations (as XO of *Thunder Wasp*), and conventional battle (Battle over Umbara). He methodically studied his enemy, primarily their art and culture, to gain an advantage over them. When Governor Arihnda Pryce of Lothal requested assistance in defeating the Rebel insurgency on Lothal, Thrawn arrived to defeat the incipient rebellion.

**Hera Syndulla** – Twi'lek female, daughter of General Cham Syndulla of Ryloth. She left her homeworld, became a pilot, and started her own resistance movement against the Empire. She eventually created a team, known as the Spectres, that led the insurgency on the

---

planet of Lothal, which the Empire was using for military construction and natural resource extraction. Hera eventually rose to the level of General after her team formally joined the Rebellion.

- PLOT

The two-season arc happens around 2 BBY. The Rebels have established a secret base on Atollon. While Hera plots to gather forces and strike the Imperial stronghold of Lothal, Thrawn discovers and attacks Atollon. The Rebels abandon their base for Yavin 4 and counterattack Lothal, ultimately defeating the Empire and presumably killing Thrawn.

## **Warhammer 40K**

### **Reforging the Blade: Imperium Force Design After The Horus Heresy**

#### Abstract

After the Horus Heresy, the Imperium of Man faced a significant force structure challenge. The operating environment of the galaxy was comparable to a maritime theatre in the 17th century – communication was slow and unreliable, and joint operations were required to exert influence. This was compounded by widely distributed threats. The situation demanded significant delegation of command authority. However, such delegation had provided a rebellious general with the tools to set the entire galaxy aflame. Thus, while the situation demanded delegation, the political reality ruled it out.

The Imperium squared this circle by engendering deliberate factionalism. The Space Marine Legions which had conquered the galaxy were broken up and stripped of their heavy armour and supporting arms. The Imperial Navy and Army were separated. All parties saw

---

their logistical networks and long-distance communication spun off into separate organisations.

This acted as a safeguard against revolt. An Imperial Navy admiral might become dissatisfied with the Imperium, but they would need to convince the local heads of four or five other organisations to go with them for a revolt to get off the ground.

In order to ensure unity, the government sponsored organised and centralised religion – the Cult of the Emperor Saviour. This instilled loyalty to a higher power which, usefully, did not exercise command authority. In short, the Imperium deliberately disunited its armed forces to allow the prosecution of joint maritime distributed operations without risking political stability in the process and ameliorated the downsides of this with a created religious ethos.

#### Backgrounder

In the 25th Millennium, mankind ruled the galaxy. However, a combination of a robot revolt and the emergence of psykers (psychic magicians with a portal to hell in their brains) plunged the galaxy into a dark age. Specifically, warp storms appeared everywhere, which blocked travel through the Warp (a hyperspace-like dimension which is the only means of faster-than-light travel--which is also hell).

At the end of the 30th Millennium, the warp storms cleared. A mysterious figure known as the Emperor emerged on Earth and set about a Great Crusade to reunify humanity under his rule. At the forefront of the Crusade were the genetically-enhanced Space Marines, organised in 20 legions. The Emperor had also created 20 'sons' called Primarchs to lead each legion, but they were scattered as infants by dark forces .

The Emperor led the Crusade around the galaxy, creating a new empire and discovering his sons as he went, placing them in command of his legions. However, as the Crusade continued, some Primarchs began to resent his rule. These feelings were exacerbated by dark forces within the Warp. Eventually, nine of them revolted, led by the Primarch Horus.

The resulting civil war, dubbed the Horus Heresy, lasted 9 years. Trillions died, the Imperium was torn apart, and the Emperor was near-fatally wounded and mounted upon

the Golden Throne to sustain his life. In the aftermath of the Heresy, the Imperium had the daunting task of rebuilding its war machine without sowing the seeds of a second Heresy.