Ghost Fleet—A Novel of the Next World War
P.W. Singer and August Cole (New York: Houghton Mifflin Harcourt, 2015), 404 pp.

Reviewed by Darby Stratford

In their first novel, *Ghost Fleet: A Novel of the Next World War*, P.W. Singer and August Cole tell the story of a future war between the United States on one side and China and Russia on the other. The authors paint a compelling scenario in which the simmering Cold War turns hot with the opening salvos taking place in outer space and continuing in cyberspace. Malware loaded onto the semiconductor chips of all US military hardware is activated to disable US military communications and weapons systems, giving the Chinese and Russians a decisive advantage. With communications down and most US military equipment disabled, Hawaii is quickly occupied after a successful attack on Pearl Harbor.

As troubling as the loss of the state, the Chinese also have found a way to destroy US nuclear ICBM submarines while they are at sea. With cutting-edge military technologies and the nuclear arsenal partly disabled, the US turns to alternative solutions, including leveraging US companies to make replacement parts using 3D technology. Meanwhile survivors of the attacks on Hawaiian military facilities launch an insurgency that begins to turn the grim situation around with the help of the US Navy's ghost fleet of decrepit, pre-digital-age war ships, Silicon Valley companies, an adventurous billionaire, and even Anonymous. And as for intelligence, good old fashioned espionage provides the US its first clue of how to reverse the situation—but it isn't understood until well after the shooting starts.

Singer and Cole's expertise in the defense world[a] has pundits and strategists alike lauding *Ghost Fleet*'s accuracy in incorporating real-word emerging trends and technologies into a fictional story. *Ghost Fleet*'s nearly 400 end-notes, something not often seen in novels, document the years of research the authors did to bring their story close to fact. The authors weave a variety of political tensions, social changes, emerging technologies, and weapons systems now in various stages of development into the narrative. Among the plot drivers are cyber theft of intellectual property, freedom of navigation tensions in the South China Sea, and even diminishing etiquette in the use of personal electronic devices. In addition to the depiction of the future of warfare, glimpses of the future of intelligence are woven throughout.

Despite their obvious focus on technological developments, Singer and Cole still manage to embed the human element. Although cyberwarfare plays an outsized role in this vision of a future world war, and therefore should be of interest to large swaths of the Intelligence Community, I was drawn to the book's human intelligence aspect.

Early in the book, the authors paint a detailed picture of the embassy party of the future, where HUMINT, SIGINT, IMINT, and more combine into a smorgasbord of collection and intrigue. In a post-communist Beijing, a US Navy commander is finishing his two-year stint in the Defense Attaché Office and is being fêted by the US ambassador. The diplomatic circuit cocktail party is well attended with "everyone in the room . . . there to collect. Eyeglasses, jewelry, watches, whatever—all were constantly recording and analyzing. Suck it all up and let the filters sort it out." (18)

One of the guests even has an antenna embedded under her skin. The authors' vision appears to be of a merging of technical and human intelligence either via wearable devices or physical augmentation—rather than the trope we've heard since the late 1970's of technical replacing human intelligence. In such a situation where everyone, and even cocktail glasses, are presumably recording conversations, how would a case officer practice her craft?

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a. Singer drew heavily from his books *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (Penguin, 2009) and *Cybersecurity and Cyberwar: What Everyone Needs to Know* (co-authored with Allen Friedman). According to the blurb about the authors in *Ghost Fleet*, Cole was a defense industry reporter for the *Wall Street Journal* before moving to the Atlantic Council where he is focusing on using fiction to explore future warfare.

Part of the answer to that question is answered at the same cocktail party where a Russian general brings up the original 1960's-era *Star Trek* television series and draws a parallel between his friendship with the Commander and the relationship between the USS Enterprise navigator, Pavel Andreievich Chekov with that of Captain James T. Kirk. The general embeds a key piece of intelligence that the Americans were going to need during the upcoming conflict in his observation that Chekov was named after a Russian Nobel Prize winning scientist.

Once the import of the Russian's comment becomes clear in Washington—after the war has started, unfortunately—a complicated high-stakes operation is developed to meet again with the Russian general during his biweekly visit to a Shanghai bordello. The operational meeting must take place under the noses of pervasive surveillance, which includes not only video and audio, but also monitoring of individual vital signs and temperature variations in a denied area during wartime. The female case officer—who's taken the place of his usual "partner"—delivers her recognition signal, or parole, in the Klingon language so that the Russian would know that the Americans finally understood the intelligence he'd given them. The case officer's ability to build trust, and ask follow-up questions shows that, at least according to Singer and Cole, the human role in intelligence will remain more than as a sensor platform.

Singer and Cole are quite deserving of the accolades they've received on their first novel from the technology and forecasting perspective. Overall, it is a first rate techno thriller and its roots in today's trends and technology—whether under development or already deployed—make it as disquieting a read as it is enjoyable. I would have liked to see more of the authors' vision of espionage and tradecraft of the future in their novel; however, they give us enough to imagine what human intelligence operations might be like when security services are collecting and analyzing all data available to them. The authors' depiction of the advantage that our potential adversaries might have because of cyber-attacks over the past few years, and the insecurity of our supply chain for electronics is more than enough for the Intelligence community reader to ponder.

On the downside, the interaction among characters and much of the individual character development tend toward the cliché—which, along with the lack of an expository backstory of how the relationship of the United States, China and Russia evolved—highlight the authors' inexperience at fiction writing.

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