

## Long before stealth helicopters

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Recently the world glimpsed never-before-seen media footage of a chunk of a “stealth helicopter” — said to be a remnant of secret U.S. military technology unavoidably left behind in the takedown of Osama bin Laden. About the helicopter technology, the military wasn’t talking, a fact both understandable and vexing for the technically curious. But this side-story underscored the point that, throughout military history, leaps of technology have favored the side that had them first.

Until humans evolve to settle their conflicts by other means, the alternative is a ready military defense. To be ready in this high-tech age entails an unrelenting push for technical innovation. By odd coincidence, while the helicopter story was still warm, I came upon some drawings of innovative military machines that echoed these themes. The devices I saw could conceivably alter the course of some kinds of battles, and only certain people in the loop knew about them — mainly, students and preservers of arcane military history.

I wasn’t searching for this material. I was just learning some things about old books. While visiting the Norwich University Archives and Special Collections, I was paging through some rare texts published in the early 16th century, a time of flowering knowledge and innovation. One of the volumes happened to contain illustrations of extraordinary military paraphernalia. And having seen them, I can now tell you these interesting things:



If your to-do list in the year 1532 included blasting your way into a suspected warlord hideout, or storming an enemy fortress or two, you would do well to get hold of a book published in that annum whose title translates very loosely from the Latin to: “On Military Matters.” The proper name is *En tibi lector Robertvm Valturivm — De re militari libris XII*, by Roberto Valturio.

Besides designs for wildly tricked-out trebuchets, the Valturio book features a four-wheeled armored personnel carrier fashioned like a giant turtle, complete with head and plated shell. The illustration demonstrates that it can ram a castle wall in very unturtle-like fashion. There’s also a towering apparatus in the form of a sea-serpent. It shoots missile-sized spears from its mouth and torso. Paging along, there’s a more plainly fashioned “*machina tormentaria*,” consisting of eight cannon cylinders arrayed like spokes on a circular platform. They shoot in all horizontal directions atop a short cylindrical base that presumably revolves. The question is, when this goes off, where do your own troops go to get out of the way?

The 1532 Valturio book’s construction has a technology story to tell as well. Its mellowed pages are surprisingly supple for being close to 500 years old. They are made of cloth-based materials which actually endured better than later paper fibers that contained destructive acids from woodpulp. Back in the 16th century, when you bought a book, you typically purchased the text block only. Binding it was the owner’s responsibility. A date stamp indicates that the Valturio book’s handsomely tooled, russet leather cover was added later in the 1500s. (Continues p. 2)

In the Norwich archives, as in collections like it, important books from bygone eras share a room with a nimble computer that can access and sift billions of documents with staggering efficiency. You feel caught in a web of invisible connector beams, past to present. They practically thrum with the human lust for

knowledge and expression. In this place so conducive to weighty thoughts, I had a few more of them.



Now that we have this astounding global ability to mingle and nourish bright ideas, may it favor the side of peace and those who would hold the planet together. And, may our capacity for collective wisdom and compassion catch up to our genius for technology. Fast.

*End note: Thanks are due the archival staff at Norwich University for educating me about the Roberto Valturio book and other matters. The public is welcome to visit and use the archives during specified hours, though students and faculty have priority. Holdings include materials relating to the university and books on military history in general. If you're curious about the contents of the Valturio book, you can find a slightly later edition on the website of Google Books, at <http://books.google.com>.*

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