How War Drives Technology, and Profits, into the Future

> *"… in Italy for 30 years under the Borgias they had warfare, terror, murder, and bloodshed, but they produced Michelangelo, Leonardo da Vinci, and the Renaissance. In Switzerland they had brotherly love – they had 500 years of democracy and peace, and what did that produce? The cuckoo clock."*
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> Orson Welles playing Harry Lime in *The Third Man*

The Swiss don't produce the cuckoo clock. But Orson had a point.

War is horrific. It is also constant, the common denominator in the background of most notable historical events. To study the history of man is to study man's fascination with, and addiction to, violence.

But war is also the engine of progress. It brutally corrects ineptitude, and from its fire, fear and fatality comes the innovation that drives civilisation forward. This innovation is then taken for granted in peacetime, where it flourishes. Laurels are rested upon, and standards begin to slip… until the next conflict forces efficiency on pain of death.

The tape that binds

A roll of duct tape is a common sight in modern households, DIY enthusiast or not. But the only reason it exists today is because Vesta Stoudt feared for the lives of her two sons in the US Navy during World War 2.

She had a job packing ammunition (specifically rifle propelled grenades) into waterproof boxes which she sealed with paper tape, folding the tape over at the end to create a pull-tab. In combat when soldiers required more ammunition, they would pull on this tab to split open the box and grab what they needed. However, in wet conditions this paper tab would snap off, leaving soldiers to frantically tear at the sealed ammunition boxes, possibly costing them their lives.

The lethality of this scenario drove Stoudt to overcome her superiors at the ordnance plant and personally appeal to President Roosevelt herself with her design for a strong, cloth-based waterproof tape which would remedy the situation. Her letter to Roosevelt reveals what drove her to invent this new tape:

> *I have two sons out there somewhere, one in the Pacific Island the other one with the Atlantic Fleet. You have sons in the service also. We can't let them down by giving them a box of cartridges that takes a minute or more to open, the enemy taking their lives, that could have been saved had the box been taped with a strong cloth tape that can be opened in a split second. I didn't know who to write to Mr. President, so have written to you hoping for your boys, my boys, and every man that uses the rifle grenade, that this package of rifle cartridges may be taped with the correct tape.*

Patriotism, fear, and love. War brings these together on the home front, and this fuels resourcefulness and innovation.

Roosevelt sent her letter to the War Production Board, who tasked Johnson %26 Johnson with producing it. It named it "duck tape" as it was made from waterproof cotton duck fabric. However, it quickly became known as "100 mile an hour tape" among US servicemen, who began using it to solve all kinds of problems, not just storing ammo.

Peace would not have created duck tape – it was the life or death reality of war that birthed it. Yet in peacetime, duck tape found even more applications – and Johnson %26 Johnson made a fortune from it.

The Judas rifle

The corrective side of war is a grimmer tale.

War is essentially a brutal free market environment, the ultimate testing ground for technology. Equipment which works consistently in the stress of combat or in a theatre of war perform with ease outside of it. Conversely, equipment which isn't reliable in peacetime will be utterly unreliable in war. Peacetime environments are far more accommodating of poor quality, allowing gear which would be discarded to persist, even though it does not perform to standard. Malinvestments in this market will not only lead to a loss of capital – they will lead to a loss of life.

This can be easily observed with the first iterations of the M16 rifle issued to the US Army. The rifle was adopted in peacetime, and costs were cut in its production after it was adopted; among other things, the chrome plating on the barrel and chamber was no longer included. This, coupled with the adoption of cheaper gunpowder in the ammunition, caused frequent jams in the rifle. This had fatal consequences when US forces entered Vietnam:

> *“We left with 72 men in our platoon and came back with 19, Believe it or not, you know what killed most of us? Our own rifle. Practically every one of our dead was found with his (M16) torn down next to him where he had been trying to fix it.”*
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> A US marine in a letter home, as reported by Time magazine in 1967

The Viet Cong, who would loot the corpses of US soldiers, would leave the jammed M16s behind in contempt. The desperate image of US troops disassembling their rifles in the middle of combat in a futile attempt to fix them before being slaughtered eventually sparked a congressional investigation. Chrome linings and cleaner gunpowder returned in the form of the M16A1, which was far more effective.

The AK-47 rifles of the Viet Cong were the opposite of this early M16 which was a product of peacetime. Although the AK was first manufactured in 1947, it was born in the mind of Mikhail Kalashnikov at the height of World War 2. Wounded in hospital, Kalashnikov vowed to create the rifle after hearing the plight of Russian troops injured by superior German firearms.

The hidden spoils of war

Perhaps it’s foolish to measure civilisation with duct tape and chrome-lined rifles. But these are merely examples – the number of everyday tools which originate from the military is staggering.

You are only reading this message today as a result of military technology. The digital device you are viewing this on is a descendant of the ENIAC (Electronic Numerical Integrator and Computer), the first general purpose programmable computer, which was created to calculate the ballistics of artillery. The internet itself was spawned from the ARPANET (Advanced Research Projects Agency Network), a creation of the US Department of Defense.

The jet engine that has opened access to the world was created to give the sovereign air forces of Britain and Germany dominance over the sky. Aviator sunglasses (known as “sun-cheaters’”) were only created to protect fighter pilots from the sun’s glare.

Global Positioning Systems (GPS) were created purely as a means of making nuclear weapons more accurate. Helping you find landmarks on holiday was nowhere near a big enough incentive for entrepreneurs to create them; it was the urgency of the cold war that summoned them into existence.

Microwave ovens only exist because a military radar scientist realised the candy bar in his pocket had melted while he was performing an experiment.

Nuclear energy, EpiPens, jerry cans, penicillin, canned food, nylon… this list goes on and on. All born from war, funded by governments to survive, thrive and destroy. But despite their dark beginnings, it’s hard to imagine a comfortable life without them. Violence brings out ingenuity, it seems.

A month from now, it shall be World Peace Day. The corrupted Mercedes logo is now one of the most recognisable sigils in the world, adorning t-shirts, earrings, mugs and ironically soldiers’ helmets.

The “?” is a combination of the signals for “N” and “D” in semaphore inside a circle, a symbolic acronym for “nuclear disarmament”. Ironically, semaphore was only developed during the French revolution to inform the French government of a foreign invasion attempting to restore the French monarchy. Weather permitting, we should see plenty of peace activists wearing aviator sunglasses on the news too.

All tools have destructive potential – you can do a lot of damage with a corkscrew. But perhaps this idea that everything has military applications is backwards. Military needs are what create tools in the first place; commercial applications come afterwards. The corkscrew was only created to clean musket barrels, after all.

Until next time,

Boaz Shoshan
Capital %26 Conflict