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Military Pollution: the Protection Paradox

by Frances Dunham

Political correctness seems to have vanished lately, so we won't be bound by it, either. In this case, that doesn't mean bashing ethnic, religious or gender minorities; it means taking a cold, hard look at war and the preparations our country makes for war. There are other important aspects to be considered, like war casualties and gigantic, unaudited expenditures, but I'm going to speak only about some of the environmental consequences.

The ostensible reason for the United States military is to make our country and its citizens safe and secure.

Yet the military is our largest polluter, exposing civilians, service members and workers to toxic materials and wastes. Worse, the Pentagon is not bound by the controls and disclosure requirements that apply to other entities, public and private, as a result of the US government's "extreme deference to the military establishment, allowing the Department of Defense and Department of Energy to avoid strict compliance with environmental legislation."

And our military is the world's largest emitter of greenhouse gases.

Toxic Contamination

You probably know that Pensacola Naval Air Station includes dozens of Superfund hot spots.

This is not unusual: US military bases and arms production account for about 2/3 of the nation's 1,300 most toxic sites listed under the federal Superfund program. Residues from military operations are left in soils, surface waters and groundwater, harming humans by poisoning drinking water, contaminating seafood and crops.

OB/OD (Open Burning / Open Detonation)

In hundreds of communities across the US, millions of pounds of unneeded explosives such as bombs, artillery shells, propellants, tactical missiles, rockets, pyrotechnics, igniters, cartridges, rounds, incendiaries such as napalm, land mines, flares, and smoke canisters are burned and exploded in the open air. OB/OD spews heavy metals, including extremely fine

particles of easily breathable lead and other heavy metals; energetic compounds and perchlorate; dioxins and other organic compounds, often spreading far beyond the point of release, washing into creeks, rivers, and bays and leaching into groundwater.

These particulates and ash can cause cancer, birth defects, cardiac and immune system deterioration, and severe brain damage. A Massachusetts study linked OB with higher rates of breast, lung, and pancreatic cancer. The Government Accountability Office cited burn pits as a source of contaminated air that has injured service members, residents, and workers in Afghanistan and Iraq.



There's a climate connection here, too: detonation of explosives is estimated to release ~1/3 ton of CO₂ per ton of explosive.

The Resource Conservation and Recovery Act (RCRA), the primary federal law on the disposal of hazardous waste, was amended in 1984 to ban OB/OD of all hazardous waste. However, during rulemaking, EPA diverged from Congressional intent and added a special exemption for the military:

40 CFR 265.382

"Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants *which cannot be safely disposed of through other modes of treatment.*"

Even though OB/OD is routinely conducted at military facilities across the country, still the stockpile of waste explosives is

growing. In 2015 the Government Accountability Office estimated that by 2020 there would be >1.1 million tons slated for disposal. This isn't only dangerous, it's wasteful: DoD inventory systems don't share between Army, Navy and Air Force, so missiles and munitions may be destroyed before they are obsolete. Yet every year Congress is pressured to provide more \$ for more munitions.

Eglin Air Force Base

Eglin AFB in Northwest Florida is the Air Force's largest: 11.6 million square feet of physical plant and 3,256 facilities. The Eglin Gulf Test Range provides ~120K square miles of overwater airspace, covering the eastern 1/3 of the Gulf of Mexico from the Florida panhandle to the Keys. The land range covers 724 square miles and contains 70 specific test and training areas, including an approved depleted uranium test range and the only qualified air-to-ground supersonic range east of the Mississippi.



After a citizen campaign of nonviolent civil disobedience forced the Navy to close its facility on the Puerto Rican island of Vieques, most of its mission – bombing practice, war games, and dumping of old munitions – was moved to Eglin.

Agent Orange

The highly toxic defoliant Agent Orange was sprayed on test sites at Eglin from 1962-70, raining down 1,300 times more dioxin per surface area than spray areas in Vietnam.

In 1988, a former senior scientist at the USAF Chemical Weapons Branch, writing to a member of Congress investigating Agent Orange, admitted: "When we initiated the herbicide programme in the 1960s, we were aware of the potential for damage due to dioxin contamination in the herbicide. We were even aware that the military formulation had a higher dioxin concentration than the civilian version, due to the lower cost and speed of manufacture. However, because the material was to be used on the enemy, none of us were overly concerned."

Of course, it was not only "the enemy" and Vietnamese civilians but also US service members who suffered and died.

Depleted Uranium

At least 2 areas on Eglin have been routinely used since 1973 to test fire penetrating DU ammunition. Soils and munitions debris contaminated with DU have been found onsite.

Heavier than lead and harder than steel, DU is used in both defensive armor and armor-piercing ammunition that can penetrate heavily armored vehicles. Other weapons are blunted on impact, but DU sharpens and self-ignites, detonating combustible vehicles like tanks, destroying buildings, and penetrating concrete and steel bunkers, generating concentrated radioactive pollution wherever it strikes or is struck.

Approximately 20% of a DU weapon penetrator becomes aerosolized particles upon impact with an armored vehicle. According to Army tests, a 120 millimeter DU penetrator fired from an Abrams tank creates 2-7 lbs. of uranium oxide dust. 50-96% of the dust is breathable and can remain in the lungs for years. Besides contaminating soil within a few hundred yards of the target, it can be resuspended and dispersed by wind.

DU is the waste product of uranium enrichment for nuclear power reactors and nuclear weapons. It has the same toxicity as natural uranium but differing proportions of isotopes – slightly more U238, slightly less U235 – such that it has ~60% the radioactivity of uranium. The US has stockpiled ~450,000 tons of DU, so using it in war and testing is also a convenient method of disposal.

OB/OD at Eglin

Besides all this, Eglin is the OB/OD disposal site for waste explosives and munitions generated at Hurlburt Field, Tyndall AFB, Pensacola NAS, and Navy Support Activity Panama City, as well as Eglin itself. A Florida DEP permit allows nearly 9 million lbs. of these wastes to go up in smoke and come down in air and water pollution.

While sites in other states are prohibited from OB/OD of certain wastes such as DU, red and white phosphorus, incendiaries, riot control gear, and 50 mm rounds, there are no such prohibitions at Eglin.



Climate

No one can say exactly how much petroleum the Pentagon consumes, but it's the single largest user in the world and, as one writer says, "has been the main enforcer of the global oil economy for decades."

Barry Sanders, author of *The Green Zone: The Environmental Costs of Militarism* (2009), estimates it to be ~1M barrels of oil / day. Beginning with the Defense Energy Support Center's figures on annual oil procurement for all branches, he added estimates of "free oil" supplied overseas (Kuwait being the largest for the 2003 Iraq war), private military contractors and leased vehicles, and bunker fuel used by naval vessels.

Even this understates the military contribution to climate change: jet fuel produces more CO2 emissions than equal quantities of diesel and gasoline. Radiative effects from jet exhaust, including nitrous oxide, sulphur dioxide, and soot, compound the warming effects of CO2.

Heavy reliance on air strikes also contributes to Greenhouse gas (GHG) emissions, because munitions manufacture and detonation also releases gases like nitrous oxide, a potent GHG with global warming potential much greater than CO2. B-52 bombers consume 47,000 gallons per mission, and when an F-16 fighter kicks in its afterburners, it burns through \$300 worth of fuel a minute,

Of all the oil burned by our federal government, the Pentagon's share is 80%. The Air Force accounts for half the Pentagon's operational energy consumption, followed by the Navy at 33% and the Army at 15%. In 2012, oil accounted for nearly 80% of the Pentagon's energy consumption, followed by electricity, natural gas, and coal.

The Kyoto protocol contained a special exemption for the military to avoid reducing or even reporting its greenhouse gas emissions (GHG). The Paris agreement has no provisions covering military compliance at all, leaving those decisions to the nation states. President Obama was praised for his Executive Order requiring federal agencies to cut GHG by 2020, but the EO specifically exempted the Pentagon.

"Ironically, most of the Pentagon's oil is consumed in operations directed at protecting US access to foreign oil and maritime shipping lanes. The consumption of oil relies on consuming more oil. Our national security has been reduced to energy security, which has led us to a military presence across the oil-bearing regions of the world and instigating armed conflict in Iraq, sustaining it in Afghanistan, and provoking it in Libya.

As Baghdad fell, invading US troops ignored the looting of schools, hospitals, and a nuclear power facility, as well as the ransacking of national museums and burning of the National Library and Archives holding peerless, irreplaceable documentation of the "cradle of civilization." The US military did, however, immediately seize and guard the Iraqi Oil Ministry Headquarters and positioned 2,000 soldiers to safeguard oilfields. First things first."

- H. Patricia Hynes, "The Military Assault on Global Climate" Truthout

The Pentagon has voiced alarm at the base flooding risks and national security threats of climate change, and has managed to cut its GHG emissions by 9% between 2008 and 2012. It has proposed some voluntary improvements it hopes will lead to a 34% reduction by 2020. If this is achieved, it would be very significant.

However, there are powerful interests like BP, Shell, Exxon Mobil and Valero pressing to increase the military's oil use. In 2009, BP alone received >\$2.2 billion in petroleum contracts with the Pentagon.

And the US military maintains 6,000 facilities in the US, plus ~1,000 bases in >130 countries around the world, oil guzzling

aircraft carriers, tanks, armored vehicles and helicopters and jet aircraft, weapons detonation, OB/OD, and regular military operations.

We've mired ourselves in a self-defeating absurdity: using vast quantities of oil to secure still more oil, while generating GHG in operations that are destabilizing the world physically and politically.

If we stand a chance of maintaining a livable planet, serious military GHG reductions will have to be part of the solution. And the military will have to stop its routine toxic contamination and exposures.



Some Good News on OB/OD

In December, President Obama signed the 2017 National Defense Authorization Act containing a requirement for the National Academy of Sciences to perform a study of the stockpile of waste munitions and alternatives to the current practice of OB/OD. The study is due to be presented to Congress in 18 months. This study provision is the result of years of work by a national grassroots coalition and their Cease Fire Campaign.

Just 2 months previously, the US EPA had agreed to include DU and low-level radioactive wastes in a study on alternatives to OB/OD alternatives it is preparing for release in the spring of 2017. Once again the Cease Fire Campaign coalition is behind this initiative.

Frances Dunham is one of the founders of Citizens Against Toxic Exposure (CATE), which focused on the human health risks of the infamous "Mount Dioxin" and the Agrico Chemical Superfund Sites in Pensacola. Ultimately, CATE won the third largest permanent relocation in Superfund history, and the first for a predominantly African American neighborhood. Frances is particularly interested in the intersection of race and toxic contamination, and will also include information about the use of fossil fuels and greenhouse gas emissions in military operations.

For more information about the Cease Fire Campaign, visit

www.cswab.org

www.facebook.com/ceasefirecampaign