Task Force Climate Change: A Patron Saint of Lost Causes, or Just Ahead of Its Time?

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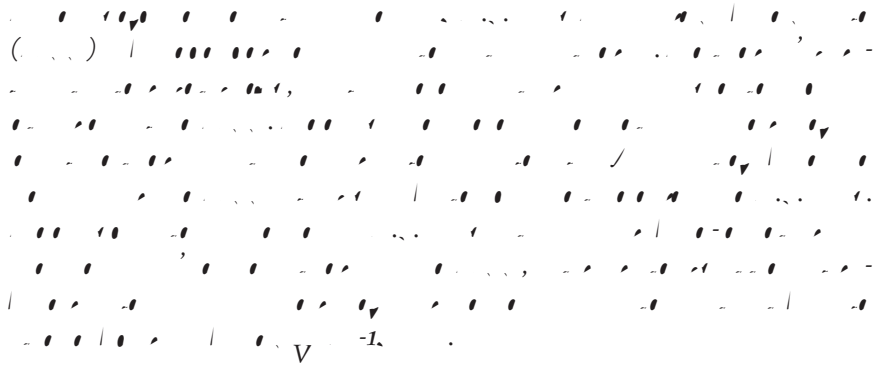

All I ever wanted to do was to forecast the weather. I'm not sure exactly why or where that interest came from; my parents told me a tornado went through our backyard when I was two years old, although I have no recollection of that event. I grew up in an old manufacturing city in upstate New York; maybe the brutal winters with eighty inches of snow each year had something to do with it. Whatever the reason, by the time I was in first grade, my six-year-old self knew I was going to work in weather-related fields for the rest of my life, even if I really didn't know what that meant at the time.

I attended Penn State University for my undergraduate studies, which was and still is a magnet for teenaged kids with a passion for weather. Their undergraduate meteorology program has been leading the nation for many decades. Unfortunately, that meant paying out-of-state tuition, something that really wasn't within reach for our family. In the search for how to pay for college, I stumbled upon the Reserve Officers' Training Corps (ROTC), a recrpon Tr2 -0.031 Tw2othaich fpslds f(ecCs222 (v

While my initial goal was to immediately enter the Navy's weather corps (known as oceanography special duty officers), the Navy had other plans for me. Rather, I was sent to sea on an old guided missile destroyer as a regular line officer to "drive ships." Although I was intensely disappointed, having waited my entire life to be a meteorologist, it turned out to be the best career move possible. There is no better way to understand your future customer or client than to be one. Additionally, you build a lot of credibility within the ranks of naval officers by becoming qualified in one of the core areas of the Navy: driving ships, flying

to respond, and when it did, it appointed someone to study the matter and make recommendations.

This is how, in the spring of 2009, while going about my daily operational job,

facts; and 2) find the truly smart people in the field, talk to them, ask them questions, figure out the strengths and weaknesses of the arguments, and ramp up my own understanding as quickly as possible. So that's what I did. In the two weeks I had to prepare, I flew out to the Applied Physics Lab at the University of Washington and had intensive sessions with the scientists at their Polar Science Cen-

Review (or QDR), due in 2010.[1] Simultaneously, the NAS was working on a report for the Navy examining the national security implications of climate change that would be released in 2011.[2] These events provided momentum and "top-cover" within the Department of Defense for the Navy to confront openly the risks and challenges of a changing environment.

With the luxury of a decade's worth of hindsight, I can say the climate-related QDR language of 2010 was the most appropriate for that time. It highlighted the inextricable links between our global energy choices and the rate and magnitude of future climate change. The QDR correctly stated that while climate change was unlikely to be the sole cause or driver of a future conflict, it had significant potential to (in my words) "make bad things worse." The QDR rightly highlighted the risks to defense infrastructure in a warming, wetter world with rising sea levels. The QDR, unfortunately, did not anticipate the lack of action we would take to address these risks over the coming decade.

For the next three years, while on active duty, I had the opportunity to both learn and talk about the impacts of climate change on the military and specifically on the Navy. The lessons learned will be familiar to anyone tasked with driving change into their organization.

. The U.S. military is a conservative but pragmatic culture that believes it's based on a meritocracy. How much that is true is best left for others to decide, but that is the self-talk in the Building ("the Building" is how many in the military describe not only the physical structure of the Pentagon, but the culture of the DOD). The military is a huge consumer of science and technology, but paradoxically does not think of itself as a science organization.

In the late 1990s, I was the fleet oceanographer for the U.S. Navy's Seventh Fleet, the organizational unit responsible for naval operations in the western Pacific and Indian Oceans. One of my daily tasks was to give our three-star commander a quick weather update sometime between 6 and 7 a.m. each morning. While ostensibly about weather, it was really about our operations over the next few days, and what significant issues or impacts the commander should have on his scope. While I could have talked exclusively about the weather, the Fleet units of the Navy are operational entities, not science organizations. Their culture values operational excellence, so framing weather discussions in that construct made my briefings much more valuable and increased my credibility to the staff. That was invaluable because, when weather really was the primary issue of the day, people would not only listen to me, but would also oftentimes approve my recommendations on how to manage that risk.

Given these realities, I would never lead a Pentagon briefing with a discussion of greenhouse gasses or the Keeling curve, but rather would talk about the impacts

pects of climate change. Tribal affiliations matter, and the military is no different than any other part of society in that regard.

Sometimes appearances and perceptions are just as important as reality. During the Paris Agreement negotiations, Senator Ted Cruz (at the time a presidential candidate) held a U.S. Senate hearing on climate change ("Data or Dogma"). Of the five witnesses, I was the only mainstream scientist. But rather than play the role of a scientist, I thought it was important to also portray my role as a retired senior naval officer. Arguably, one of the most important things I did in the hours preceding the hearing was to get a fresh haircut![3]

There is an entire body of literature examining the incentives for, and barriers to, a military organization changing itself. My personal experience was that most often, change was either driven by senior leadership, or it came in response to a threat or challenge that now appeared to be near-term.

It was a late Friday winter's evening in the Pentagon, and I had one briefing left. It was to a four-star admiral who had a no-nonsear

that have low predictability. Communicating what we do know, rather than all the things we don't know, while at the same time being up front with the limits of our

istration, there was a lot of momentum at the political level to raise awareness of this issue. Unfortunately, that rhetoric did not translate into discrete budget or program requests. At the same time, the Republican majorities in the Senate and, after 2014, in the House were implacably opposed to the idea that climate change was impacting security (or anything else). Without an effective legislative strategy to counter that opposition, much less was done than said about climate risks in the military and, as the years went on, there was increasing skepticism that this was a real issue, rather than a political talking point used by the White House. Ironically, the positions of Congress and the Executive Branch have changed with the election of President Trump. We now have an administration in which it is hazardous to your career's health to bring up climate risks in any form, while Congress has moved from antagonist-in-chief to becoming a cautious advocate for the military's adaptation to climate risks.

This is especially true for Arctic issues, but it is also true for protection of domestic military infrastructure against climate impacts. The Arctic, in particular, is a combination of strange bedfellows and stranger politics, where there are converging bipartisan interests in trade (Maine), ship construction (Gulf Coast), ship homeporting (Washington State), and fossil fuel, infrastructure development, and employment (Alaska).

It's fair to ask, with a decade of hindsight, what was accomplished. With the caveat that I am far from an unbiased observer, here are five areas in which I believe the Navy's focus on climate risk made a positive difference.

. Arguably the biggest change the TFCC made was in how the U.S. military, and the Navy in particular, was viewed in addressing an issue of future critical importance to many people around the world. Simply by directly addressing climate change as a risk and talking about it in plain, "non-Defense speak" language, many in Congress, the media, nongovernmental organizations (NGO), and the general public understood that this was an issue the Navy was serious about.

That perception extended beyond our borders. I had the opportunity and privilege to represent the DOD at the UN Conference of the Parties (COP) 15, 16, and 17, held in Copenhagen, Cancun, and Durban, respectively. One of my favorite things I did while at the COP was to walk through the nongovernmental organization halls and exhibit7 Td bser the NAlaskTU 0 -1.2217 Td [(halls and exw (t w (e finot .)0.6 (militac)

started a new program, the Earth System Prediction Program (ESPC), to seamlessly provide weather, ocean, and ice predictions from the near-term out through thirty years. The ESPC, now nearly a decade old, has been recognized in the Weather Research and Forecasting Innovation Act of 2017 as a pathfinding program for the entire U.S. government, and the National Oceanic and Atmospheric Administration has been directed to coordinate its modeling efforts with the ESPC.

. I believe the TFCC showed the DOD and the other military services that you could have a discussion and talk openly about the issues of a changing climate and its impacts on readiness, without becoming unduly mired in the partisan and tribal debates that unfortunately surround this issue. The TFCC Arctic and Climate Roadmaps preceded the DOD's 2010 QDR and the ensuing climate and Arctic strategies issued by the DOD itself. I'm very pleased to see that both the Army and Air Force are now spending intellectual and analytic effort to determine the risks and mitigation strategies to their respective missions and forces.

In addition to leading within the U.S. military, I'm proud of the work we did, in collaboration with the Office of the Secretary of Defense, the U.S. European Command, and our Norwegian allies, to create and hold the first meetings of the Arctic Security Forces Roundtable (ASFR). Since the Arctic Council is, by charter, prohibited from discussing military security issues, we created a forum whereby all the militaries of the Arctic countries could come together in a neutral environment and discuss issues of mutual importance. One of the highlights of my naval career was cochairing the inaugural meeting of the ASFR in 2011 in Oslo. I'm pleased that even a decade after the ASFR's creation, it is still relevant and referenced in today's policy discussions.[6]

In my years since retiring from the Navy, I have continued to work at the intersection of climate change, risk, and national security. While progress is never a straight line, I have been heartened by the number of NGOs that, over the past decade, have devoted increasing resources to studying, writing, and speaking out on this topic. I am particularly pleased to observe the evolution in Congress on this issue, especially on the Republican side of the aisle.

A little-noticed, but watershed moment came in the summer of 2017 in the then-Republican controlled House of Representatives. The full House took a vote on whether to include a modest climate amendment (the Langevin amendment) into the upcoming annual Defense authorization bill. To everyone's surprise, including Congressman Jim Langevin, the amendment passed the full House, with more than a handful of Republican votes. The subsequent analysis of which Republicans voted for the measure contained another surprise: it wasn't about whether there was a military installation in their district, or even if they were directly impacted by rising sea levels. The dominant factor was how "purple" their district was turning on the issue of climate change, reaffirming former Speaker

at the services' war colleges and recently renewed interest in Arctic operations.