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Origins of the ‘Climate Change’ Threat to National Security – and the Geoengineering Response. (OUR GEOENGINEERING AGE, PART 6)

Published by ☐ [2ndvtrepublic](#) at ☐ June 13, 2017

Publisher’s Note: This is the sixth installment in our geoengineering series. Our skies are our most visible and vital global Commons, and they are under siege by powerful forces we are just beginning to understand. Our Geoengineering Age series tells the story of the most important and underreported global environmental phenomenon of our time, and is researched and written by [Chelsea Green](#) co-founder Ian Baldwin. (NOTE – Part 7 of this series will appear in July).

Our story begins with installment #1 – “Monkey Wrenching Vermont’s Night

Sky” – here.

Official US governmental recognition of climate change as a matter of national security is at least 45 years old. It is, moreover, a recognition split along two governmental axes: one military, the other civilian. Military recognition publically originated in response to the efforts of Soviet Union geoengineers, who were intrigued by the possibilities of hastening the warming of the Arctic. In 1972 a Department of Defense (DoD) official testified in the Senate that the Soviet Union had developed “a well-organized and extensive program in climate research...[and] that active modification of climate is an objective of this research.” Notably, the official added, “climactic changes are clearly potentially *grave threats to national security*, and have *consequent implications for military planning* [emphasis added].” [1]

On the civilian front, in 1965 Al Gore’s Harvard mentor, Roger Revelle, chaired a subcommittee on atmospheric CO₂ whose findings were part of a broader governmental report titled *Restoring the Quality of Our Environment*. It warned: “By the year 2000 there will be about 25 percent more carbon dioxide in the atmosphere than at present” due the burning of fossil fuels. Revelle’s subcommittee “also explored the possibilities of deliberately bringing about ‘countervailing climatic changes’” — an early nod to official civilian interest in the subject of climate engineering. [2]

A year later, in 1966, a senior administrator at NASA wrote a report for the Department of Commerce titled “A Recommended National Program in Weather Modification.” The report recommended the National Science Foundation (NSF) assume administration of a range of civilian governmental research programs on weather modification: among the topics were cloud dynamics, cloud ice nucleation, formation of particles in clouds (“coalescence”), cloud electrification, and computer analysis “to permit more accurate mathematical modeling “ of atmospheric phenomena. [3]

It would appear the civilian sector wanted to catch up with the military, which had a 20-year head start.

The first US climate-modeling program was formed in the Pentagon’s Defense Advanced Research Projects Agency or DARPA, not in one of NSF’s university research centers. In the early 1970s DARPA employed a “ganged” ILLIAC IV computer system, “which alone could handle the mass of data and subtle changes that make weather prediction so difficult.” The initial work was secret, done under the rubric of “Nile Blue,” but when the weather and other environmental modification weapons deployed in the Vietnam War were exposed to public view in the early 1970s, the project name was clanged to “Climate Dynamics” and proclaimed unclassified to preserve its funding in a hostile political environment. [4]

Writing in 1976 Lowell Ponte, an arms control researcher, claimed DoD officials

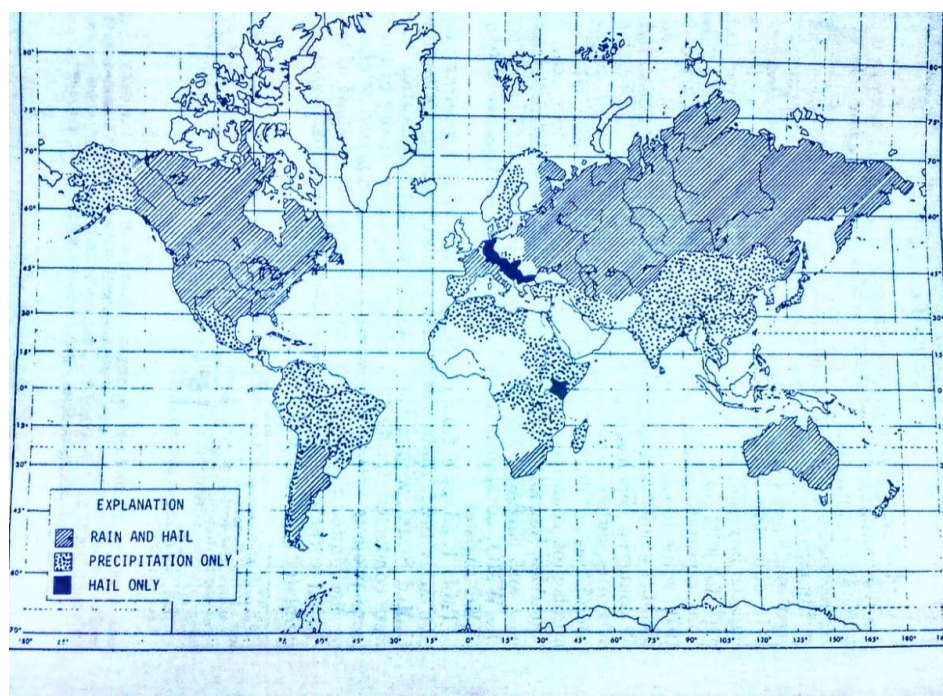
“admit that that Pentagon climate modeling has studied ways and means and probable results of melting the polar ice caps, and the possible consequences of Soviet schemes to melt the Arctic ice pack. They have also studied how to make and direct tornados and hurricanes, and how to destabilize weather in the Soviet Union, China, and Cuba, which would ruin their harvests and thereby strengthen the U.S. ‘food weapon’.” [5]

Some years earlier geoscientist Gordon J F MacDonald had warned that the presumed benign technology of weather control for agriculture could easily become malign, doubly so, because it “could damage an adversary *without revealing its intent*” making such weather- modification technology an admirable clandestine weapon [emphasis added]. [6] MacDonald published a series of ideas for military use of environmental warfare, writing that, “The key to geophysical warfare is the identification of the environmental instabilities to which *the addition of a small amount of energy would release vastly greater amounts of energy*”[emphasis added]. [7]

Thus MacDonald, and presumably many other Pentagon scientists after him, believed that “Earthquakes would make good weapons...and so would the tidal waves that undersea earthquakes can produce...[and so can] lightening storms be directed against an enemy.” [8] MacDonald also “thought belligerents might cut a hole in the ozone layer over a target area to let in lethal doses of ultraviolet radiation”[9] using “lasers and chemical reagents.”[10] Ponte asserted that DARPA had *studied all these phenomena* by the mid-1970s.

Two decades later, in 1997, Secretary of Defense William Cohen could corroborate such climatic geoengineering capabilities were “real” and that therefore DoD had “to intensify our efforts” to counter them [11] — a reprise of DoD’s 1972 Senate testimony.

In 1978 the Senate Committee on Commerce, Science, and Transportation issued a lengthy report entitled “Weather Modification: Programs, Problems, Policy, and Potential.” It reviewed the three-decades-long history of both US and worldwide weather modification programs, the history of CO2 emissions, and “the implications of a climatic warming,” and urged a “program for accelerating national progress in the modification of the weather” as well as intensive modification research. [12]



Nations where weather modification was practiced 1946-1973 – from US Senate “Weather Modification” Report; May 1978, page 407.

The Senate’s Weather Modification report also commented on the UN’s then recent Environmental Modification Convention (ENMOD), citing criticisms of the amendment to the original treaty document (believed to have been made by the US) that “only partially bans environmental modification techniques in warfare.” Quoting the offending changes in the relevant sentence (indicated by italics), it reads: “Each State Party to this convention undertakes not to engage in military or any other hostile use of environmental modification techniques having *widespread, long-lasting, or severe* effects as the means of destruction, damage or injury to another State Party.” The report then added, “the Convention was [also] criticized for its lack of effective enforcement procedures,” a widespread perception. [13]

ENMOD, according to James R Fleming, “does not prohibit ‘the use of environmental modification techniques for peaceful purposes’.” [14] Is altering the climate to spare humanity the worst effects of global warming “peaceful”? Probably that will depend on whom you ask. If you ask Fleming, he has already answered: “...all climate-engineering schemes involve deliberate manipulation of the dynamics, composition, or structure of the Earth, and all such schemes carry the potential for ‘widespread, long-lasting, and severe’ harm on national, regional, and possibly global scales.” [15]

In the wake of its international publicity ENMOD had the effect of causing the Pentagon to publically disown its 30-year investment in weather modification, effectively driving that work underground, where it naturally subsists, leaving civilian agencies and authorities to pursue modification technology more or less in the open, thus diverting the public’s wandering attention from the military’s ongoing covert climate modification research.

By the late 1970s, a scientific consensus had already begun to form around the need to counteract the buildup of anthropogenic CO₂. In the 1980s new geoengineering proposals were being made in science journals to bring about, for example, “desired changes in Earth albedo [reflectivity] through judicious introduction of small particles [that] can probably be accomplished at acceptable cost through the use of modified combustors on high-flying aircraft.” [16] Such geoengineering proposals generated a host of new technology patents, in particular for aerosol spray techniques as well as specifications for aerosol particles suitable for geoengineering sprays. These patents proliferated during the 1980s, unclassified patents open to public scrutiny. [17] We do not know about other, classified military geoengineering patents.

On June 23, 1988, NASA climate scientist James Hansen testified before Congress to warn NASA was “99 percent certain the warming trend was not a natural variation but was caused by a buildup of carbon dioxide and other artificial gases in the atmosphere,” and that it was “time to stop waffling” and face the facts of human-caused global warming. Hansen and other testifying scientists pleaded that “planning must begin now for a sharp reduction in the burning of coal, oil and other fossil fuels that release carbon dioxide.” [18]

In that same year, 1988, according to the physicist and science historian Spencer Weart, “the International Panel on Global Climate Change (IPCC) was designed by the Reagan administration, primarily as a replacement for the self-appointed committees of scientists...the administration thought were unduly alarmist. The IPCC was designed so that it can make a statement only by the unanimous consent of all the scientific representatives of all the world's governments....a recipe for conservatism, if not paralysis.” [19] In hindsight it would appear the omniscient hands of the fossil fuels industry and its martial cohort were at work at the very outset of the great climate debate.

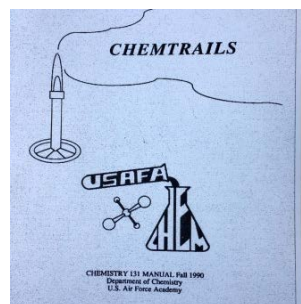
Not long after Hansen's Congressional testimony and the formation of the IPCC, two former Lawrence Livermore chemists working for Hughes Aircraft Company filed a geoengineering patent, “Stratospheric Welsbach Seeding for the Reduction of Global Warming.” The 1991 patent — now owned by Raytheon, one of the world's premiere weapons and weather information companies — is of particular interest because it called for “dispersing tiny particles of a material within the [greenhouse] gases' layer, the particle material characterized by wavelength-dependent emissivity or reflectivity.” [20] In other words the mix of particles sprayed into the stratospheric greenhouse layer would behave exactly opposite to the greenhouse gases, both reflecting incoming sunlight back into space during the day and permitting Earth's radiated heat to escape back into space at night. The patent specifies Welsbach materials, as well as “Welsbach-like materials” such as “the oxides of metals which have high emissivity” (aluminum oxide and thorium are notably cited) and which “may be seeded by dispersal from seeding aircraft...at an altitude on the order of 10 kilometers,” that is, in the troposphere where the air we breathe is

located. [21]

At about the same time the famous Welsbach patent was filed, the National Academy of Science (NAS) published its signal study *Policy Implications of Greenhouse Warming*, which stated that “Despite the great uncertainties, greenhouse warming is a potential threat sufficient to justify action now” and that research should be undertaken to learn more about “the potential of geoengineering options to offset global warming and their possible side-effects.” [22] A year later the NAS’s accompanying 944-page technical volume was published in which the longest section — ‘Screening out Some Sunlight’— of a long chapter on ‘Geoengineering’ described mitigating strategies such as ‘space mirrors’, ‘space dust’, ‘multiple balloon screen,’ and in the most detail, ‘stratospheric dust’. “A screen could be created in the stratosphere by adding more dust to the natural stratospheric dust to increase its net reflection of sunlight.” [23] Under the subheading ‘Aircraft exhaust’ the geoengineering chapter noted that aircraft-sprayed dust might effect or otherwise damage ozone in the lower stratosphere, “but not in the troposphere” where little to no appreciate ozone exists. [24]

As we shall later learn, it is in the troposphere, the lower atmosphere, where our weather and the air we breathe occurs, and where most of the geoengineering spraying is being observed and documented.

Some observers believe the NAS global warming policy and mitigation study effectively launched a new wave of climate engineering experiments [25]. A new military geoengineering research agenda, perhaps aimed at the growing climate change threat, is also suggested by how the US Air Force (USAF) Academy described its first-year chemistry course for undergraduates during the 1990-1991 academic year.



1990 USAFA Chemistry 131 textbook cover.

The word “Chemtrails” is gratuitously— innocently, in light of later events — displayed on the front of the text manual. During the 1990s a major science textbook publisher, Addison Wesley, published the USAF Academy’s spiral-bound second-year Chemistry 141 and 142 textbook in several revised editions through 2003, using the word “Chemtrails” to signal the book’s contents [26].

And then, as if on cue, in June 1991 Earth conducted a geoengineering experiment of her own, as Earth is wont to do every decade or so, one that

would later be described as a prime example of “stratospheric aerosol geoengineering” or what the geoengineers now refer to as “the Pinatubo Option.” [27] According to the US Geological Survey, the Philippine island of Luzon’s Mt. Pinatubo ejected 20 million tons of sulfur dioxide into the stratosphere, more than 1 cubic mile of material that rose in an ash cloud 22 miles into the air and caused global temperatures to drop from 1991 to 1993 by about 1° F (0.5° C). [28]

Geoengineers ever since have looked to the 1991 Pinatubo explosion as their inspirational lodestar, incontrovertible proof that stratospheric aerosols can cool the planet abruptly. But only for one or two years, or as long as the ejected aerosols stay aloft. Otherwise a Pinatubo-size volcano would have to erupt every other year — or planes spray more or less continuously.

In the meantime the Soviet empire had collapsed, presenting the world with a once-in-a-century opportunity to “give peace a chance.”

Read installment #2 – “Beyond Global Climate Talks” – [here](#).

Read installment #3 – “The Sorcerer’s Apprentices at Play at the Dawn of the Geoengineering Age” – [here](#).

Read installment #4 – “Secrecy and Geoengineering as a Weapon as a War” – [here](#).

Read installment #5 – “Is Global Warming Good Or Bad? That Depends On Who You Ask” – [here](#).

SOURCES:

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[5] *Ibid.*, 170-172.

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[14] Fleming, 184.

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[22] National Academy of Sciences, National Academy of Engineering, Institute of Medicine, *Policy Implications of Greenhouse Warming* (Washington, DC: National Academy Press, 1991), 72.

[23] National Academy of Sciences, National Academy of Engineering, Institute of Medicine, *Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base* (Washington, DC: National Academy Press, 1992), 449.

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