

# Secret Intelligence Service

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Open Source Topic Dated (I)

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## On Weather Warfare

Environmental modification techniques (ENMOD) for military use constitute, in the present context of global warfare, the ultimate weapon of mass destruction.

Rarely acknowledged in the debate on global climate change, the world's weather can now be modified as part of a new generation of sophisticated electro-magnetic weapons. The USA, Russia and the PRC have developed capabilities to manipulate the climate for military use.

Environmental modification techniques have been applied by the US military for more than half a century. US mathematician John von Neumann, in liaison with the US DoD, began research on weather modification during the late 1940s, at the height of the Cold War and predicted 'forms of climatic warfare as yet unimagined'. During the Vietnam War, cloud-seeding techniques were used, beginning in 1967, under Project Popeye, the objective of which was to prolong the monsoon season and block enemy supply routes along the Ho Chi Minh Trail.

The US military has developed advanced capabilities which enable it selectively to alter weather patterns. The technology, which was developed under the High-frequency Active Auroral Research Program (HAARP), is an appendage of the Strategic Defense Initiative - 'Star Wars'. From a military standpoint, HAARP is a weapon of mass destruction, operating from the outer atmosphere and capable of destabilizing agricultural and ecological systems around the world.

Weather-modification, - US Air Force document AF 2025 Final Report:

"...offers the war fighter a wide range of possible options to defeat or coerce an adversary", - capabilities, it says, extend

to the triggering of floods, hurricanes, droughts and earthquakes:

"Weather modification will become a part of domestic and international security and could be done unilaterally. It could have offensive and defensive applications and even be used for deterrence purposes. The ability to generate precipitation, fog and storms on earth and/or to modify space weather and the production of artificial weather, all are a part of an integrated set of military technologies."

1977: An international Convention was ratified by the UN General Assembly which banned 'military or other hostile use of environmental modification techniques causing widespread, long-lasting or severe effects.' According to the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques:

The term "environmental modification techniques" refers to any technique for changing - through the deliberate manipulation of natural processes - the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space. (Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, United Nations, Geneva: 18 May 1977)

While the substance of the 1977 Convention was reasserted in the UN Framework Convention on Climate Change (UNFCCC) signed at the 1992 Earth Summit in Rio, debate on weather modification for military use has become a scientific taboo.

Military analysts and scientists are mute on the subject. Meteorologists are not investigating the matter and environmentalists are largely focusing on greenhouse gas emissions under the Kyoto Protocol. The possibility of climatic or environmental manipulations as part of a military and intelligence agenda, while tacitly acknowledged, is not part of the broader debate on climate change under UN auspices.

While discussion of the post Cold War military applications of weather warfare is a taboo, the US Air Force has acknowledged the strategic importance of ENMOD techniques in the modern battlefield of non-conventional warfare and intel ops, including the conduct, without the enemy's knowledge, of "covert" weather modification operations.

At this juncture in our history, US-NATO forces are deployed worldwide.

The Pentagon has formulated the contours of a global military agenda, a "long war", a war without borders.

"Weather warfare" is the ultimate WMD, with the potential of destabilizing an enemy's ecosystem, destroying its agriculture, disabling communications networks. In other words, ENMOD techniques can undermine an entire national economy, impoverish millions of people and "kill a nation" without the deployment of troops and military hardware.

While The Ecologist published in 2007 a shorter version of the above study, the issue of climatic manipulation for military use has interestingly been largely ignored by Environmentalists.

"It is related to fifty years of intensive and increasingly destructive programs to understand and control the upper atmosphere. HAARP is an integral part of a long history of space research and development of a deliberate military nature. The military implications of combining these projects are enormous - the ability of the HAARP / Spacelab/ rocket combination to deliver very large amounts of energy, comparable to a nuclear bomb, anywhere on earth via laser and particle beams. The project is likely to be defined as a space shield against incoming weapons, or a device for repairing the ozone layer."

The HAARP program has been terminated at its location in Alaska, USA. \*\*\*\*\* The technology of weather modification is strictly classified.\*\*\*\*\*

## Weather Warfare

The significant expansion in America's weather warfare arsenal, which is a priority of the DoD is not a matter for debate or discussion. While, environmentalists did blame the Bush administration for not having signed the Kyoto protocol, the issue of "weather warfare", namely the manipulation of weather patterns for military use is never mentioned.

The US Air Force has the capability of manipulating climate either for testing purposes or for military-intelligence use. These capabilities extend to the triggering of floods, hurricanes, droughts and earthquakes. In recent years, large amounts of money have been allocated by the US DoD to further developing and perfecting these capabilities.

Weather modification will become a part of domestic and international security and could be performed unilaterally ... It could have offensive and defensive applications and even be used for deterrence purposes. The ability to generate precipitation, fog, and storms on earth or to modify space weather ... and the production of artificial weather all are a part of an integrated set of technologies which can provide substantial increase in US, or degraded capability in an adversary, to achieve global awareness, reach, and power. (US Air Force, emphasis added. Air University of the US Air Force, AF 2025 Final Report,

While there is no firm evidence that the US Air Force weather warfare facilities have been deliberately applied to modify weather patterns, one would expect that if these capabilities are being developed for military use, they would at least be the object of routine testing, much in the same way as the testing of new conventional and strategic weapons systems.

Needless to say, the subject matter is a scientific taboo. The possibility of climatic or environmental manipulations as part of a military and intelligence agenda, while tacitly acknowledged, is never considered as relevant. Military analysts are mute on the subject. Meteorologists are not investigating the matter, and environmentalists are strung on global warming and the Kyoto protocol.

Ironically, the Pentagon, while recognizing its ability to modify the World's climate for military use, has joined the global warming consensus. In a major study, the Pentagon analyzed in detail the implications of various global warming scenarios.

The Pentagon document - nothing is mentioned regarding its main weather warfare program: The High-Frequency Active Auroral Research Program (HAARP) based in Gokona, Alaska - jointly managed by the US Air Force and the US Navy.

There are several mainstream explanations on weather and climate change, none of which fully explains, within their respective terms of reference, the highly unusual and erratic weather occurrences, not to mention the human toll and devastation, which have led to the destabilization of entire agricultural and eco-systems. Needless to say these explanations never address the issue of climate manipulation for military use.

Climatic Manipulation. US Military: The HAARP Program

The High-Frequency Active Auroral Research Program (HAARP) based in Gokona, Alaska, has been in existence since 1992. It is part of a new generation of sophisticated weaponry under the US Strategic Defense Initiative (SDI). Operated by the Air Force Research Laboratory's Space Vehicles Directorate, HAARP constitutes a system of powerful antennas capable of creating controlled local modifications of the ionosphere - upper layer of the atmosphere:

HAARP will be used to induce a small, localized change in ionospheric temperature so that resulting physical reactions can be studied by other instruments located either at or close to the HAARP site.

HAARP has been described as: "A super-powerful radio wave-beaming technology which lifts areas of the ionosphere by focusing a beam and heating those areas. Electromagnetic waves then bounce back onto earth and penetrate everything - living and dead."

Scientist Dr. Rosalie Bertell depicts HAARP as "a gigantic heater that can cause major disruptions in the ionosphere, creating not just holes, but long incisions in the protective layer that keeps deadly radiation from bombarding the planet."

Critical: According to physicist and consultant to the David Sarnoff laboratory in Princeton, Richard Williams; HAARP constitutes, quote; "an irresponsible act of global vandalism."

He and others fear a secret 'second stage' where HAARP would

"beam much more energy into the ionosphere. That could produce a severe disruption of the upper atmosphere at one location that may produce effects that spread rapidly around the Earth for years."

(Quoted in Scott Gilbert, Environmental Warfare and US Foreign Policy: The Ultimate Weapon of Mass Destruction,

HAARP has been presented to public opinion as a program of scientific and academic research. US military documents seem to suggest, however, that HAARP's main objective is to "exploit the ionosphere for Department of Defense purposes."

Without explicitly referring to the HAARP program, a US Air Force study points to the use of "induced ionospheric

modifications" as a means of altering weather patterns as well as disrupting enemy communications and radar.

HAARP also has the ability of triggering blackouts and disrupting the electricity power system of entire regions.

An analysis of statements emanating from the USAF points to:

covert manipulation of weather patterns, communications systems and electric power as a weapon of global warfare, enabling the US to disrupt and dominate entire regions of the World.

### Weather Warfare

HAARP has been operational since the early 1990s. Its system of antennas at Gakona, Alaska, was initially based on a technology patented by Advanced Power Technologies Inc. a subsidiary of Atlantic Ritchfield Corporation.

The first phase of the HAARP Ionospheric Research Instrument (IRI) was completed by APTI. The IRI system of antennas was first installed in 1992 by a subsidiary of British Aerospace Systems (BAEs) using the APTI patent. The antennas beam into the outer-atmosphere using a set of wireless high frequency transmitters.

In 1994, ARCO sold its APTI subsidiary, including the patents and the second phase construction contract to E-Systems, a high tech military organization linked to the CIA.

E-Systems specialize in the production of electronic warfare equipment, navigation and reconnaissance machinery, including "highly sophisticated spying devices":

"E-Systems is one of the largest intelligence contractors in the world, doing work for the CIA, defense intelligence organizations, and others. US\$1.8 billion of their annual sales are to these organizations, with \$800 million for black projects, ie. projects that even the United States Congress isn't told how the money is being used.

"The company has outfitted such military projects as the Doomsday Plan (the system that allows the President to manage a nuclear war) and Operation Desert Storm."

With the purchase of APTI, E-Systems acquired the strategic weather warfare technology and patent rights, including Bernard

J. Eastlund's US Patent No: 4,686,605 entitled "Method and Apparatus for Altering a Region in the Earth's Atmosphere, Ionosphere and/or Magnetosphere".

It is worth mentioning that the Eastlund /APTII patents were based on the research of Yugoslav scientist Nicola Tesla (many of whose ideas were adopted by US corporations).

Eastlund described this technology as being capable of:

"the causing of total disruption in communications over a very large portion of the Earth, missile or aircraft destruction, deflection, or confusion, weather modification."

Not surprisingly, the patent had previously been sealed under a government secrecy order. Barely a year following the E-Systems purchase of APTII's weather warfare technology, E-Systems was bought out by Raytheon, the fourth largest US military contractor. Through this money-spinning acquisition, Raytheon became the largest "defense electronics" firm in the World. Meanwhile, ARCO which had sold APTII to E-Systems, had itself been acquired by the BP-AMOCO oil consortium, thereby integrating the largest oil company in the World.

Raytheon through its E-Systems subsidiary now owns the patents used to develop the HAARP weather warfare facility at Gakona Alaska. Raytheon is also involved in other areas of weather research for military use, including the activities of its subsidiary in Antarctica, Raytheon Polar Services.

Towards the Expanded Final Stage

The HAARP antenna array and transmitters were slated to be built in several distinct phases

Developmental Prototype (DP)

Filled DP (FDP),

Limited IRI (LIRI)

Full size or final IRI (FIRI)

USA - During the Clinton administration, the "Filled Developmental Prototype" (FDP), namely a system composed of an array of 48 active antenna elements with connected wireless transmitters, was installed and completed at the HAARP facility

in 1994. Under the initial Developmental Prototype (DP), only 18 of the 48 transmitters were connected.

Bernard Eastlund in a 1997 interview described this antenna array in its Filled DP stage as the "the largest ionospheric heater ever built".

This system of 48 antennas, however, while fully operational, was not according to Eastlund, sufficiently powerful (in 1997) "to bring the ideas in his patents to fruition":

"But they're getting up there," he said. "This is a very powerful device, especially if they go to the expanded stage."

This 'final expanded stage' envisioned by Eastlund, which will provide maximum capability to manipulate the World's weather patterns, has now been reached. Under the now gone US Bush administration, the main partner of Raytheon (which owns the patents) in the construction and development stage of the HAARP antenna array, is British Aerospace Systems, which had been involved in the initial installation of the antenna array in the early 1990s. The multi-million dollar contract was granted by The Office of Naval Research to BAE in 2003, through its US subsidiary BAE Systems Advanced Technologies Inc. The contract was signed two months before the Anglo-American invasion of Iraq.

Using Raytheon's technology, BAE was to develop the HAARP Ionospheric Research Instrument (IRI) to its maximum capabilities of "Full size or final IRI (FIRI)".

In April 2003, BAE Systems Advanced Technologies outsourced the production and installation of the antennas to Phazar Corp a company specializing in advanced wireless antennas for military use.

Phazar owns Antenna Products Corporation of Mineral Wells, Texas

Phazar was entrusted with producing and installing 132 crossed dipole antennas items for the HAARP facility.

A year later, during month 04 2004, the final phase in the expansion of the HAARP facility was launched. (US DoD, 19 04 2004). This phase consisted in equipping all the 180 antennas with high frequency transmitters. BAE Systems was awarded a further contract, this time for \$35 million.



In July 2004, Phazar had delivered and installed the 132 crossed dipole antennas including the antenna support structures and ground screen items at the HAARP facility, bringing the number of antennas from 48 under the FDP stage to 180.

Meanwhile, BAE Systems had contracted with defense electronics firm DRS Technologies, Inc in an \$11.5 million outsourcing arrangement, the production and installation of the high-frequency (HF) radio transmitters for the HAARP antenna array.

Recall: DRS specialize in a variety of leading edge products for the U.S. military and intelligence agencies.

Under its contract with BAE Systems Information and Electronic Warfare Systems in Washington, D.C., DRS is to manufacture and install "more than 60 Model D616G 10-Kilowatt Dual Transmitters" to be used with the HAARP system of antennas. (It is unclear from the company statements whether all the 180 antennas will be equipped with a transmitter, bringing the system up to full IRI capabilities).

Deliveries and installation are to be completed by month 07 2006. HAARP is described as a "research project", the production of the transmitters was entrusted to DRS' C41 Command, Control, Communications, Computers and Intelligence (C4I) Group.

The Array of 48 Antenna Elements with the Transmitter Shelters (FDP stage)

The 48 antenna array is supported by transmitter shelters, each of which contains 6 transmitter cabinets. Each cabinet contains two transmitters.

The newly installed 132 dipole antennas supplied by Phazar vastly increase the size of the HAARP Alaska facility; the new transmitters are supplied and installed by DRS

Testing of HAARP Equipment (2003 - 2004)

It is worth noting that the expansion of the antenna array (e.g. during 2003-2004) required, as part of the contracts reached with BAE Systems and its various subcontractors, the routine testing of the installed weather warfare equipment. An intermediate stage Limited IRI (LIRI), could be in operation by 2004, following the completion of the 180 antenna array under

the Phazar contract and pending the final delivery of the remaining HF radio transmitters.

In this regard, a report published by the Russian Duma during 2002, did suggest that the US Military had plans to test its weather modification techniques at its Alaska facility, as well as at two other sites:

"The committees reported that the USA is planning to test three facilities of this kind. One of them is located on the military testing ground in Alaska and its full-scale tests are to begin in early 2003. The second one is in Greenland and the third one in Norway.

"When these facilities are launched into space from Norway, Alaska and Greenland, a closed contour will be created with a truly fantastic integral potential for influencing the near-Earth medium." - State Duma

The USA plans to carry out large-scale scientific experiments under the HAARP program, will create weapons capable of breaking radio communication lines and equipment installed on spaceships and rockets, provoke serious accidents in electricity networks and in oil and gas pipelines and have a negative impact on the mental health of people populating entire regions, the deputies said. (source; Interfax News Agency, original Russian, BBC Monitoring, 08/08/2002.

The Full Size Ionospheric Research Instrument FIRI stage, described as "a maximum size of 180 antenna elements, arranged in 15 columns by 12 rows" was scheduled to be completed by mid-2006 (assuming the installation of the remaining dual transmitters), at which time the HAARP program would have reached its maximum FIRI capacity - meaning the ability to selectively modify, for military use, weather patterns anywhere in the world.

The HAARP build-out is jointly funded by the U.S. Air Force, the U.S. Navy and the Defense Advanced Research Projects Agency (DARPA). (Business Wire, 10 06 2004)

## Comparison of IRI Phases

<b>DP</b>	<b>FDP</b>	<b>LIRI</b>	<b>FIR</b>	<b>I</b>
Number of Active Antenna Elements	18	48	108	180
Total Transmitter Power (kW)	360	960	2160	3600
Maximum Antenna Gain (dB)	19	24	29	31
Max Effective Radiated Pwr (dBW)	74	84	92	96
Min Antenna Pattern Width (degrees)	9	8	5	
Frequency Range	2.8 to 10 MHz			
Modulation Types	CW/AM/FM/PM			

This advanced stage of full capacity (FIRI) corresponds to what the US Air Force refers to as "Owning the Weather":

US aerospace forces will 'own the weather' by capitalizing on emerging technologies and focusing development of those technologies to war-fighting applications. From enhancing friendly operations or disrupting those of the enemy via small-scale tailoring of natural weather patterns to complete dominance of global communications and counter-space control, weather-modification offers the war fighter a wide-range of possible options to defeat or coerce an adversary... In the United States, weather-modification will likely become a part of national security policy with both domestic and international applications. Our government will pursue such a policy, depending on its interests, at various levels.

(US Air Force, emphasis added. Air University of the US Air Force, AF 2025 Final Report)

### Concluding

Weather manipulation is the pre-emptive weapon par excellence. It can be directed against enemy countries or even "friendly nations", without their knowledge. Weather warfare constitutes a covert form of pre-emptive war. The manipulation of climate can be used to destabilize an enemy's economy, ecosystem and agriculture (e.g. North Korea or Cuba). It can trigger havoc in financial and commodity markets and can potentially be used as

an instrument of "insider trade" for financial gain. It has the ability of destabilizing a country's institutions. Concurrently, the disruption in agriculture creates a greater dependency on food aid and imported grain staples from the US and other Western countries.

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