

# Weather Warfare: Future Weapon?

**EDITOR'S NOTE** — Controlling the weather is a relatively new branch of science, and in time it might become a new form of warfare—unless the development of weather weapons is outlawed by international agreement, as the U.S. Senate has proposed.

WASHINGTON (AP) — Weather weapons might be flood, drought, tidal waves, holes in the ozone layer, hurricanes steered over the ocean toward enemy cities ...

Such weapons don't exist yet. But research is underway in the United States and — according to Pentagon spokesmen — Russia

vapor crossing a competitor country could be subjected to years of drought."

MacDonald said there may also be ways to control hurricanes, steering them in predetermined directions to "terrorize substantial parts of the populated world." The steering might be done by spreading over the ocean chemicals that inhibit evaporation, thus preventing the sea from providing energy to a hurricane.

He cited speculative theories that the release of thermal energy in the Arctic or Antarctic, perhaps through nuclear explosions along the base of an ice sheet, "could

toward developing some weather weapons.

The United States apparently took the first step. The Defense Department acknowledged last May that for six years during the Vietnam war it secretly conducted rainmaking programs over Southeast Asia.

The Defense Department says weather research is necessary for peaceful purposes and to develop weapons in case potential enemy countries do so. Officials say current Pentagon research — at a cost of \$2 million annually — is limited to rainmaking, rain suppression, and hail and fog dispersal, the latter useful in controlling flying weather.

The Russians claim their weather research is only for peaceful purposes; a claim the Pentagon calls "largely propagandistic." A spokesman says the Russians

initiate outward sliding of the ice sheet. The immediate effect . . . would be to create massive tsunamis (tidal waves) that would completely wreck coastal regions."

He outlined a concept in which enhanced electrical oscillations in the earth's atmosphere might be used to impair human brains.

He said research indicates weak oscillating electrical fields can influence the brain, causing small but measurable reduction in a person's performance. Lightning research has shown that it might be possible to control lightning to create such low frequency oscillations in the ionosphere.

MacDonald said technology permitting such things probably would develop during the next 20 years. He also raised the possibility that a nation could conduct a secret weather war "to insure

are conducting extensive work on weather alternation which could be used in military operations.

Last October, the Soviet Union introduced a resolution in the United Nations asking the Geneva Disarmament Conference to outlaw weather research for military purposes.

Soviet Ambassador Jacob A. Malik said scientists had concluded that a future weather weapons arsenal might even include the ability to create "acoustic fields on the sea and ocean surface to combat individual ships or whole flotillas."

The Senate's subcommittee on oceans and international environment recently held hearings on the subject of weather modification. Several witnesses testified that even limited, peaceful research—such as that done by the Agriculture and Interior

a peaceful, natural environment for itself and a disturbed environment for its competitors.

"Such a secret war could go on for years with only the security forces involved knowing about it. The years of storm and drought could be attributed to unkindly nature, and only after a nation was thoroughly drained would an armed takeover be attempted."

Benjamin Forman, Defense Department assistant general counsel, said the United States is committed in principle to work toward outlawing weather war, despite the research being done by the Pentagon.

"Basic research is basic research," he explained. "What one does with it is something else. For example, melting the polar ice caps, let us say, in

Departments to control rainfall—could lead later to deadly forms of climate alternation.

Dr. Gordon J. F. MacDonald of Dartmouth College, an internationally-known expert on geophysics and planetary physics, outlined some of the possibilities for the subcommittee.

He said that continued cloud seeding over a long stretch of dry land "clearly could remove sufficient moisture to prevent rain one thousand miles downwind ... so that a nation dependent on water

Canada or Siberia for purely peaceful purposes—to change the climate to provide more arable land—creates a danger far greater than the possibility that nation would use climate modification as a weapon of war."

Pierre St. Amand, of the earth and planetary sciences division of the Naval Weapons Center, China Lake, Calif., said, "There are situations wherein the technology would not be used in actual combat to hurt the enemy but might greatly aid our own troops.

• The Times - Dec'74. US Senate proposed outlawing development of weather "weapons"

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