

Pentagon Discloses Research**Soviets Study Microwaves****s Weapon**

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newly declassified U.S. Defense Intelligence Agency report says Soviet research into microwaves might lead to methods of disorienting human behavior, disorders or even heart at-

Soviet scientists are fully aware of biological effects of low-level microwave radiation which might have offensive weapons application," says report, based on an analysis of experiments conducted in the Soviet Union and Eastern Europe.

According to the study, this research work suggests "the potential development of a number of antipersonnel applications."

Microwave beams are the electronics of radar and are widely used in relaying long-distance telephone calls. Other common sources of microwaves include television transmit-

A copy of the study was provided by the agency to The Associated Press in response to a request under the Freedom of Information Act. The Pentagon agency refused to release portions of the study, saying they remain classified on national security grounds.

THE REPORT MADE NO DIRECT

mention of the Soviet microwave bombardment of the U.S. Embassy in Moscow, where despite strong American protests the radiation continues, though at reduced levels.

Up to now, the view most widely accepted among State Department officials in Washington has been that the Soviets appear to be using the microwave beams to foil sophisticated U.S. electronic intelligence-gathering equipment at the embassy.

The State Department issued an administrative notice on Nov. 12 declaring Moscow "an unhealthful post," but no link was officially drawn between this move and the radiation situation. Department spokesmen insist that medical tests have found no adverse health effects attributable to the microwaves.

The Soviets have denied beaming any radiation at the embassy, contending that the microwaves are simply part of the normal background radiation found in any major city.

The Pentagon agency's report, distributed within the government last March, said that one biological effect which could offer antipersonnel uses is the phenomenon known as "microwave hearing."

"SOUNDS AND possibly, even words which appear to be originating intracranially (within the head) can be induced by signal modulation at very low average power densities," the study said. It added that "combinations of frequencies and other signal characteristics to produce other neurological effects may be feasible in several years."

The report concluded that Soviet research in this area "has great potential for development into a system for disorienting or disrupting the behavior patterns of military or diplomatic personnel; it could be used equally as well as an interrogation tool."

The report said that along with microwave hearing, the Soviets have also studied various changes in body chemistry and functioning of the brain resulting from exposure to microwaves and other frequencies of electromagnetic radiation.

One physiological effect which has been demonstrated is heart at-

It said that this has been accomplished experimentally in frogs by synchronizing the pulses of a microwave signal with the animal's heartbeat and beaming the radiation at the chest area.

THE DOCUMENT added that "a frequency probably could be found which would provide sufficient penetration of the chest wall of humans to accomplish the same effect" — heart attacks.

The report said that another potential antipersonnel use of microwaves could be based on their effect on the blood-brain barrier, which regulates the exchange of vital substances between brain cells and the circulatory system.

As the result of this, it said, "an individual could develop severe neuropathological (nerve disorder) symptoms and either die or become seriously impaired neurologically."

Reports out of European Communist countries indicate that a number of female industrial workers may have suffered aborted pregnancies as a result of exposure to microwaves, the study said.

Several U.S. foreign service officers who previously had served in Moscow said they felt the DIA study was significant because it marks the first time any government agency has acknowledged that Soviet use of microwaves as an antipersonnel weapon is a realistic possibility.

The report — entitled "Biological Effects of Electromagnetic Radiation (Radiowaves and Microwaves) Eurasian Communist Countries" — was prepared by the Army Medical Intelligence and Information Agency and approved for distribution by DIA.