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Office of Security, Department of State
Room 3810 A

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Biomedical Phenomena

Attached hereto is a draft copy of the above mentioned
subject.

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BIOMEDICAL PHENOMENA

A possible explanation of the Moscow signal may reside in an attempt to produce a relatively low level neurophysiological condition among Embassy personnel. Although the detailed studies of the signal do not give this a high probability of interest, nevertheless, the intensity of the signal relative to the published Soviet safety standards is sufficiently high to furnish a logical basis of protest on microwave radiation safety grounds.

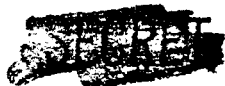
There exists very little data in the United States or other western countries on the effect of low level microwave radiation. Considerable data does exist on thermal effects giving direct clinical observations at levels above 50 milliwatts. On the other hand, there is an extremely large amount of Soviet technical literature discussing non-thermal effects at levels below the United States accepted standard of 10 milliwatts. The Soviet standard, in fact, is officially stated to be 10 microwatts for continuous exposure; a level of 100 microwatts may not be exceeded for more than 15 to 20 minutes. Since the signal strength at its maximum inside the building (behind the windows at the beam centers) is of the order of .5 to one milliwatt. The Soviet irradiation of the Embassy exceeds their own ambient safety level by a factor of 100.

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The possible effects of low level continuous exposures are problematical and are based on the Soviet material. These effects appear to be primarily neurophysiological and neuro-circulatory in nature. That is, various reports indicate that excessive fatigue, coordination loss, changes in blood pressure, in heart rate, biochemical changes in the blood, and some loss of sensory ability, result. It is interesting to note that very few experiments with complex waveforms or experiments on primates are ever reported in the open Soviet literature. There are several hundred reports on C W irradiation of lower mammals and reports of clinical observations of humans accidentally exposed either in microwave laboratories or those subjected to therapeutic treatments similar to diathermy. Some scattered observations (with poor statistics) in this country have indicated that there are gross behavioral disturbances when specific waveforms are used. Possible hypothetical models for non thermal interaction must consider insertion of neurophysiologically significant waveforms by non-linear absorption and consequent demodulation and mixing of various carrier frequencies and specific biochemical absorption resonances. Certain body organs such as the eye are particularly sensitive to thermal damage. The possibility exists of accumulation of damage effects due to integration of sub-initial levels injected with random time variation into the signal.



While a sober and systematic program of research in this area should be undertaken over a long time period, the time scale of the present problem indicates that a program to specifically check the complex Moscow signal waveform on higher primates should be carried out to supply some data base for possible use in a protest action. A possible modus operandi is to use the Air Force Aeromedical facility at Bolloman AFB which has a highly trained and well calibrated colony of chimpanzees (probably the most sophisticated in the United States), and to develop a simulation of the Moscow signal at the Microwave Laboratory at Wright-Patterson AFB. This would permit a well controlled experiment to start in approximately two to three months with a "yes" or "no" answer insofar as behavioral disturbances and reversible physiological effects are concerned within three to four months of commencement of the experiment. The specific counter-intelligence problem can be easily buried in a program of routine irradiation at low levels. Some measurements will be directed toward possible synergistic of pharmacological agents.

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