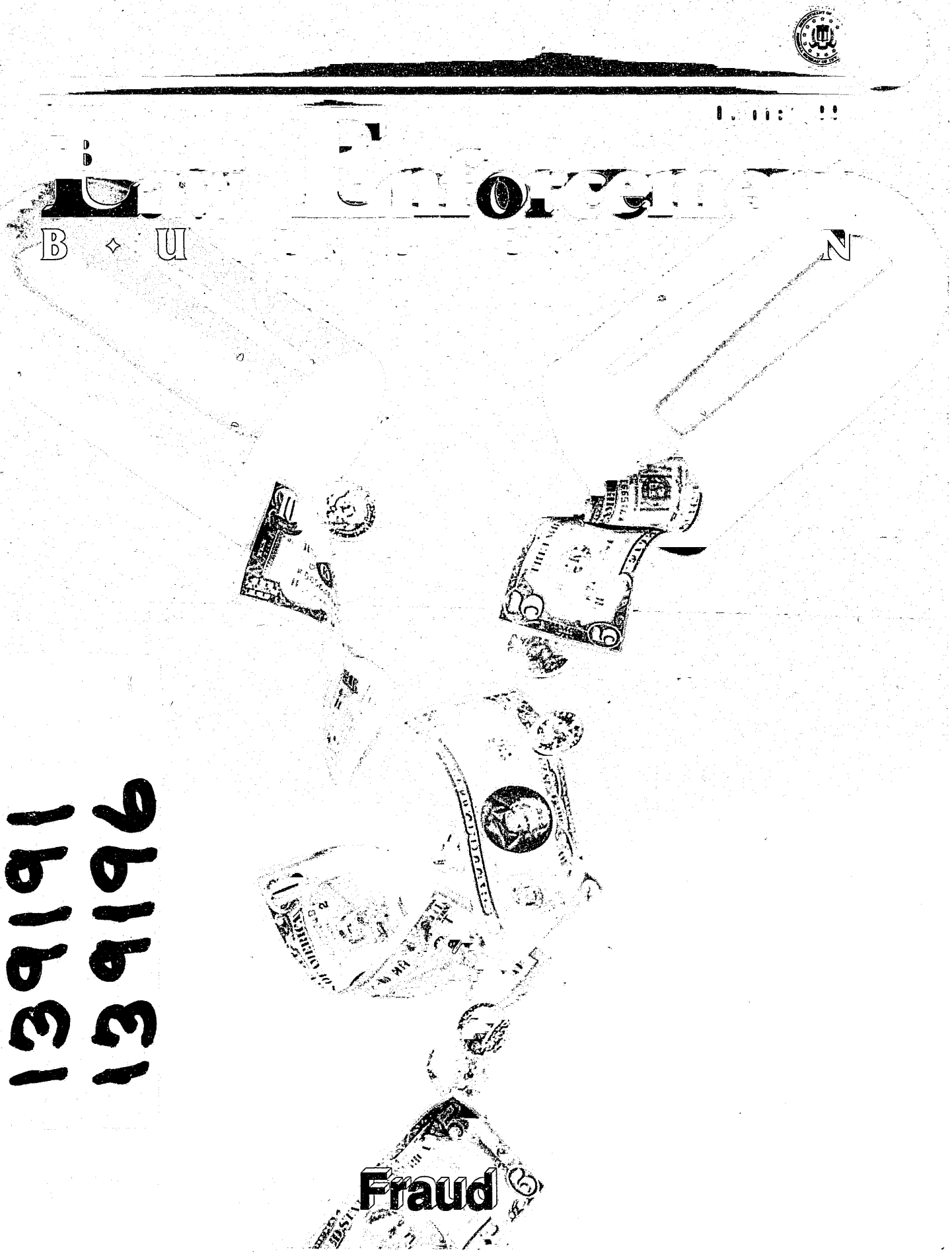

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Focus on Health Care Fraud

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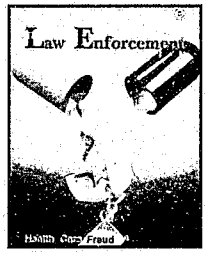

Cover: Health care fraud directly challenges law enforcement. This issue focuses on law enforcement's concerted efforts to strategically address this crime problem. (Cover photo © 1992, M. Simpson, FPG International Corp.)

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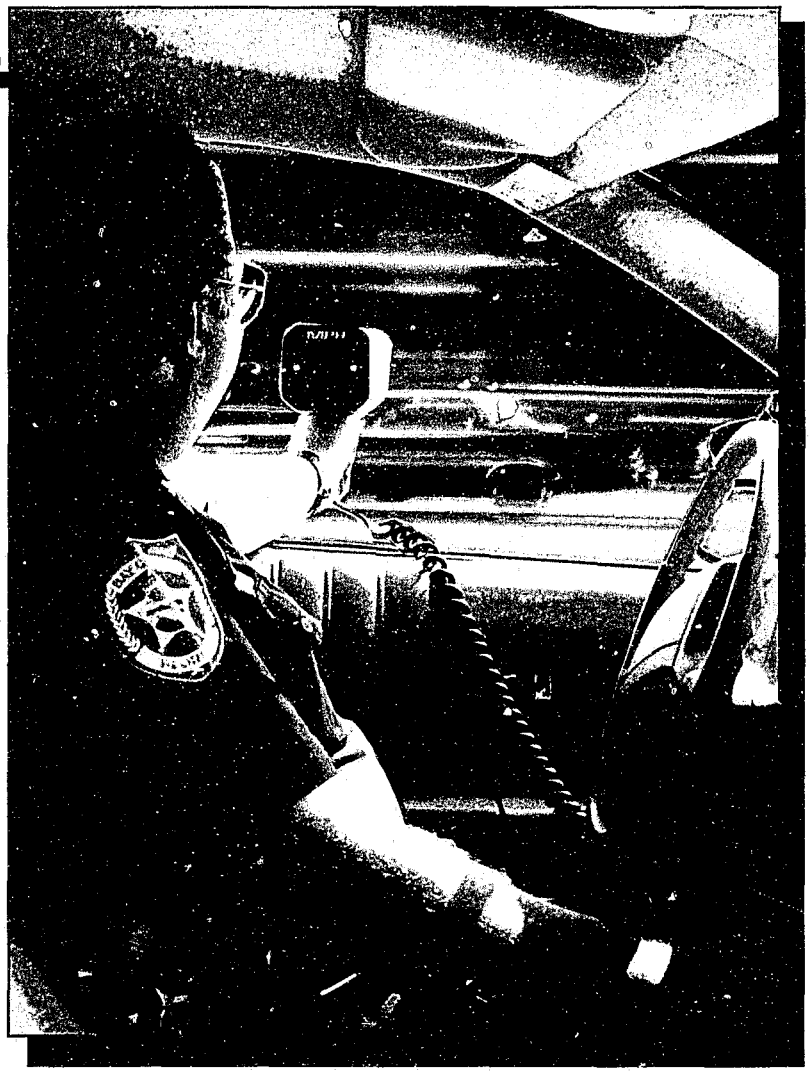

Police Radar
A Cancer Risk?

By
JOHN M. VIOLANTI, Ph.D.

In recent years, many police officers and law enforcement agencies started to express concern about the possible link between police radar and cancer. As of 1991, individuals filed eight legal actions relative to this possible health hazard.[1] While the Food and Drug Administration's (FDA) Office of Science and Technology issued a release stating that no concrete evidence currently exists to verify that police radar guns cause cancer, the FDA did recommend that operators not place radar antennas within 6 inches of any part of the body.[2]

This article considers the debated "link" between police radar and cancer. Specifically, it discusses the characteristics and possible biological effects of radar electromagnetic fields (EMF) and studies that demonstrated possible associations between EMF and cancer. The articles also addresses the difficulties in determining causal relationships between radar EMF and cancer and what law enforcement agencies can possibly do to resolve this issue and protect police officers.

Characteristics of Radar Electromagnetic Fields (EMF)

Police radar operates generally on an ultrahigh frequency (UHF) band in the electromagnetic spectrum. This band is approximately midrange between ordinary electrical power sources and x-rays. The strength of an electromagnetic field can be measured with a device called a dosimeter, which calibrates milligauss (mG) units. The higher the milligauss reading, the stronger the electromagnetic exposure.

To date, it is not known what value of milligauss puts humans in danger of biological change. However, researchers determined that prolonged electromagnetic exposure increases the risk of cancer.[3] Thus, high frequencies, like police

radar, may increase the probability of biological harm.

Additionally, exposure to radar EMF from radar guns or devices used within an enclosed vehicle can exacerbate this risk. Operating police radar inside a patrol car with all the windows closed produces effects similar to those found in microwave appliances. The intensity of exposure increases greatly because radar EMF continuously permeates the officer and cannot escape from the police vehicle.

Cancer and EMF Exposure

Recently, a study of cancer deaths among 2,763 police officers indicated that there may be a possible link between exposure to EMF and cancer.[4] The resulting analysis indicated that the risk of brain cancer increased fourfold in officers with 20-29 years of police service over individuals in other occupations. Other officers experienced a fourfold risk of lymphatic and hemopoietic (blood-related) cancers. Although information on the types of assignments of these officers was unavailable, findings indicate a possible EMF-cancer association. And, the possibility still exists that EMF sources may even cause other types of cancer.

According to Dr. David Savitz of Johns Hopkins University, a common criticism of many EMF-cancer studies is that workers exposed have not been individually assessed as to the degree of such exposure.[5] Measuring radar EMF exposure in the police vehicle and at the radar site offers one possible solution to this problem. This could be accomplished by equipping several police vehicles with dosimeters, an instrument that effectively measures the strength of radar EMF, and then comparing exposure levels in those cars with known cancer-producing levels in other populations. If exposure of police officers ranks as high as those in other populations, then it may be necessary to take preventive measures to lower officers' radar EMF exposure.

Another criticism of EMF-cancer studies concerns the absence of information on other factors that might associate cancer with police officer exposure to radar EMF, such as lifestyle, diet, smoking, alcohol use, and exposure to chemicals. Certainly, these factors may confound any research on police radar and cancer, but interestingly, most of these other behaviors do not relate to the cancers associated with exposure to radar EMF.[6]

A third consideration that would help to clarify the association between radar and cancer involves measuring the amount of exposure time. Theoretically, cancer develops as a result of repeated EMF exposure over a long period of time. This makes studying police officers difficult because of their high mobility. However, according to Dr. Savitz, current exposure may be just as much a problem as exposure over time. In order to sort out this problem, officers should be studied over a period of years and have assessments made of their health and their exposure to EMF. Unfortunately, such studies require outlays of considerable time and money.

Managing the Risk

Although the association between radar and cancer remains inconclusive, based on existing evidence, present research certainly points to a possible link. Therefore, until researchers know more about this cause/effect relationship, departments should take precaution-

> ***"...departments should take precautionary steps to protect police officers from potential harm caused by radar units."***

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ary steps to protect police officers from potential harm caused by radar units. This is not a call to "panic," nor does it mean that law enforcement departments should remove all sources of electromagnetic radiation. Such action impedes the proper enforcement of the law. However, departments should initiate procedures that would lessen exposure to radar EMF, such as mounting the radar units outside of the police vehicles. This would limit police officer exposure to highly focused, intense dosages of radar EMF in enclosed vehicles.

Additionally, many of the newer radar devices have an instant on/off feature that allows officers to turn the unit off when not in use. Such units reduce the time of exposure to radar EMF and presumably lessen the cancer risk. The older radar units do not have such a feature. If any departments still use older radar units, they should update their sets, if possible.

Conclusion

Despite technological advances, few ways exist to minimize police officer exposure to radar EMF. Either officers must limit their exposure to radar EMF or departments must completely remove radar devices from police vehicles. Unfortunately, law enforcement agencies may have to depend on future engineering advancements, such as EMF shielding and devices designed to narrow the radar beam and contain radar emissions, in order to dismiss this threat.

> ***"...high frequencies, like police radar, may increase the probability of biological harm."***

Today's police officers have enough risks to contend with in their daily activities without the added burden of exposure to possible cancer-causing radar EMF. To help ease this burden, law enforcement agencies should act to alleviate this unnecessary job-related hazard for law enforcement officers.✦

Endnotes

[1] Three Connecticut officers with cancer, the widow of a Wisconsin State trooper who died of cancer, and several other officers have filed cases. Several types of cancer occurred in these officers, including testicular, thyroid, and bone cancers.

[2] The Food and Drug Administration (FDA) has set up a hotline to collect information concerning radar and its link to cancer. The hotline can be reached at 1-800-638-6725.

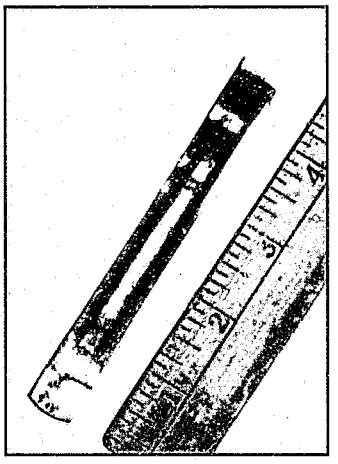
[3] J. Violanti, J. Vena, and J. Marshall, "Disease Risk and Mortality Among Police Officers: New Evidence and Contributing Factors," *Journal of Police Science and Administration*, 14, No. 1, 17-23.

[4] Ibid.

[5] D. Savitz, N. Pearce, and C. Poole, "Methodological Issues in the Epidemiology of Electromagnetic Fields and Cancer," *Epidemiological Reviews*, 11, 1989, 59-78.

[6] Ibid.

Bulletin Alert



Supporting Crime

While cleaning a cell block after the release of several prisoners, a maintenance worker found two steel strips left in a cell. Personnel in the Belleville, New Jersey, Police Department determined that the curved strips, measuring 4 1/4 inches by 1/2 inch, were actually arch supports found in many types of athletic and soft-soled shoes. The concave ends of the strips were sharp enough to be used as weapons. While the arches can be easily concealed from sight, metal detectors register an alert when scanning footwear containing these supports.