

The support of our charge of indiscriminate use of Mace in the Rancho bus incident, The Ghost is publishing 2 of a series of letters.

Che Unibersity of Michigan MEDICAL SCHOOL ANN ARBOR

SUMMARY OF THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL REPORT

After reviewing all of the available evidence concerning Chemical Mace it is our considered opinion that,

1. Chemical Mace can be used with comparative safety to the eye and to the total economy of the individual as a weapon to effect temporary incapacitation providing.

(A) The recipient is alert, in possession of his normal protective reflexes such as blinking, eye closure, breath holding, turning away from the spray, and the like;

(B) The spray is directed at the recipient at such a distance that his reflexes can be brought into play;
(C) The total duration of the spray is limited to the minimum

required to be an effective incapacitant. 2. Severe, long term, and possibly permanent ocular damage may occur if the cornea of the eye is exposed directly to Chemical Mace in liquid form. Such exposure resulting from discharge of the cannister would, in our opinion, constitute misuse of the weapon and result from:

(A) Discharge of the weapon directly into the eye or face at very close range in normally reactive persons;
(B) Prolonged discharge at any effective distance into the face

(B) Prolonged discharge at any effective distance into the face of an already incapacitated person; (C) Discharge of large quantities in a confined space such as

(C) Discharge of large quantities in a commed space such as a small room or closed automobile. 3. There is neither evidence nor scientific rationale to support the view that significant systemic effects on the nervous system or

other organ systems, other than the psychological responses to being rendered incapacitated, are induced by Chemical Mace, even by exposures which could produce significant injury to the eye, skin or mucous membranes. 4. The irritant effect of Chemical Mace on the eye and probably

4. The inflatt energy of the common and the construction of the chloroacetophenone fraction of the formulation. The solvent and propellant fractions have been eye-tested individually by several investigators and found to be non-injurious. Control studies in this laboratory using "Training Mace" (the complete Chemical Mace formulation lacking only chloroacetophenone) produced only minimal and transient irritation to the rabbit eye.

5. Hitherto the delivery of tear gas has relied largely on the use of explosive charges to propel and volatilize the solid, chloroacetophenone. The medical records of tissue damage have implicated flame, forceable penetration of tissues by solid chloroacetophenone, gun wadding and powder as the principal causative factors. Aerosolization represents a marked improved in controllability of dosage and safety. Delivery of chloroacetophenone by aerosol techniques reguires the use of organic-carrier solvents due to its water insolubility. The choice of solvents in the formulation of Mace is fortunate

The choice of solvents in the formulation of made is include since all are of negligible systemic toxicity for man in the amounts which could conceivably be absorbed from the lung or skin in the use of the weapon.

6. Good practice requires that exposed areas be washed with clear water as soon as possible after exposure in order to minimize local effects and that the application of ointments of any kind be avoided since they localize the irritant at the site of application.

7. Officers charged with the responsibility of using Chemical Mace should be carefully indoctrinated in its proper use and instructed in the potential hazards of indiscriminate use or accidental misuse. The manufacturer would be well advised, if they have not done so, to prepare a brochure describing proper methods of use and the potential hazards of misuse.

The use of all anti-personnel weapons involves a calculated risk: The long history and the extensive use of chloroacetophenone as a temporary incapacitating agent in the control of riots throughout the world since World War I; the minimal injury reported in the world medical literature even under conditions which have undoubtedly involved indiscriminate use or misuse of this agent indicate the risk to be quite small, and in most instances negligible, in comparison with conventional weaponry.

Although speaking of weapons of war rather than riot control, a statement of Dr. Paul Weiss of the Rockefeller Institute, in relation to research needed for nonmilitary defense,(19) when paraphrased, appears to be appropriate here. "This implies preparing ourselves for defense against any sort of weapon an enemy may conceivably use against us, hoping at least that all parties will abide by the injunction against weapons that inflict undue and unnecessary suffering and pain. But, it is precisely on this point that I cannot follow the twisted thinking that considers it condonable to scorch a living person with a flame thrower (in this instance, night sticks, machine pistols, shotguns, and so forth) but feel squeamish about putting an opponent out of action temporarily and without lasting damage with biological or chemical agents of proper design. Of all warfare agents, the latter certainly seems to be among the least inhumane." Ian F. MacLeod, D.V.M., M.S.

Ian F. MacLeod, D.V.M., M.S. Julian E. Villarreal, M.D. Maurice H. Seevers, Ph.D., M.D. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE WASHINGTON, D. C. 20201

TO ALL HEALTH OFFICERS (State, County, and City)

We have been reviewing the available evidence regarding the nature and effects of the non-lethal weapon known as "Chemical Mace" and would like to call your attention to salient features our studies have disclosed to date.

The design of "Chemical Mace" for use against individuals, together with the ability of the item to deliver an irritating substance to a localized tissue area and maintain the activity of the irritant at this spot for a period of time, clearly increases the possibility of more than transient effects to the exposed individual unless treatment is prompt.

Therefore, we recommend that law-enforcement officials be advised to see that subjects controlled by the use of agents of this type be treated promptly and specifically. We feel also that the manufacturers of products of this type should stress the importance of prompt and individual treatment.

Ordinarily, flushing the areas of the body exposed to Mace with water would constitute adequate treatment. If the exposure has been severe, gentle but copious flushing of the conjuctiva, fluorescein examination, and anti-inflammatory drops may be beneficial. Salves, creams, or ointments should not be applied to skin until the chloroacetophenone has dissipated since they may retard its sublimination promoting local irritation.

This treatment procedure also should be followed by the police officer who may be exposed to the substance during 'ts period of use. In fact, absorption in the clothing of the kerosene-like solvent which is relatively non-volatile of itself can prolong the local action of chloroacetophenone and should be considered as a condition requiring of treatment.

Attached is a fact sheet which covers in slightly greater detail some of our findings. While "Chemical Mace" and related formulations are not covered by the Federal Hazardous Substances Act and do not fit, in our opinion, within the definition of "drugs" under the purview of the Food and Drug Administration we plan to encourage further studies, particularly to determine possible chronic effects. As additional information is available, we will revise our recommendations as necessary.

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William H. Stewart Surgeon General, USPHS

