



UNITED STATES MARINE CORPS
MARINE CORPS SYSTEM COMMAND
2200 LESTER STREET
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IN REPLY REFER TO:

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LAW
27 OCT 03

Mr. Edward Hammond, III
The Sunshine Project
101 West 6th Street, Suite 607
Austin, TX 78701

Re: Freedom of Information Act Request 084F-01,
Referrals for Determination

Dear Mr. Hammond:

This responds to your Freedom of Information (FOIA) Request 084F-01. Department of Defense Instruction 5230.29 directs that prior to release of any information concerning chemical, biological, nuclear, or radiological information, the request for the information shall be referred to the Directorate for Freedom of Information and Security Review (DFOISR). Consequently, this office has referred the following documents listed in the subject request, along with release determination suggestions, to DFOISR:

1. Anti-Personnel Calmative Agents (94-085.pdf)
2. Anti-Personnel Chemical Immobilizers: Synthetic Opioids (94-086.pdf)
3. Biological Infared Sensor to Ascertain Human Targets and Determine Their Physical Characteristics, (5/11/98, P98-013.pdf)
4. Controlled Lachrymating Agents (97-010.pdf)
5. Demonstration of Chemical Immobilizers (94-084.pdf)

DFOISR will determine the appropriate release disposition of those four documents and respond to you directly. Please be advised that the official having cognizance over the subject matter of this portion of your request is:

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84

1. Title: Demonstration of Chemical Immobilizers 27 April 1994
2. Type Effort: ACTD
3. Proposed by: Edgewood Research, Development & Engineering Center
4. Capability Sought and Uses to Which it Could be Put: The objective is to develop non-lethal chemical materials having minimal side effects for immobilizing adversaries in various military and law enforcement scenarios. Potential military applications include meeting U.S. objectives in peacekeeping missions; crowd control; embassy protection; and counterterrorism. Law enforcement application include use by local, state and national law enforcement agencies, in hostage and barricade situations; crowd control; close proximity encounters; prison riots; and to halt fleeing suspects.
5. Technical Description: Chemical Immobilizers are chemical compounds that produce incapacitation through immobilization, disorientation or unconsciousness. Among the classes of neuropharmacologic agents with potential as immobilizers are anesthetics, analgesics, sedatives and hypnotics. There are several methods of delivering chemical compounds. For this purpose the most likely is by inhalation of a vapor or aerosols or by injection, for example, by dart.

a. Technical Objective: Select, acquire and demonstrate the effectiveness and safety of a chemical immobilizer(s) on test animals, such as rodents and primates.

b. Technical Approach.

(1) The overall development of a non-lethal chemical immobilizer is a multi-phase, multi-year process including the following steps:

Phase 1 - Select and acquire candidate material; characterize chemical and physical properties; demonstrate effectiveness and safety by preclinical toxicology tests.

Phase 2 - Expanded Preclinical Toxicological Tests, such as carcinogenicity, mutagenicity, teratogenicity, environmental fate, and subchronic effects, for Surgeon General and FDA approval.

Phase 3 - Develop delivery systems to include dissemination of candidate material for specific scenarios and hardware development.

Phase 4 - Clinical Trials for effectiveness and safety.

This proposal applies only to Phase I.

(2) Technical Approach to Phase I. ERDEC has a rich history in studying these type chemicals, and proposes to choose an appropriate compound(s) for demonstration by using a Front End Analysis (FEA)/Trade Off Analysis (TOA). The objective of this analysis will be to select candidates with the highest probability of success versus the most likely scenarios of use. A multidisciplinary team of scientists and engineers will be formed to

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work closely with users to define requirements, solve deficiencies and conduct an analysis to elect the best candidate chemical(s). The best candidate(s), ideally with an existing clinical database or FDA approval and hardware concept will be selected for further review. The candidate compound(s) will be acquired or synthesized for evaluation. Limited prototype hardware tests will be conducted using candidate material or simulant. Toxicological tests, with an emphasis on inhalation, to demonstrate effectiveness and safety will be conducted in the most suitable animal models for the class of compound. Data from this demonstration can then be used for Phase 2 preclinical tests, Phase 4 clinical trials and concurrent Phase 3 delivery system development. It may also lead to potential candidate material for contingency use in dire national emergency.

(3) Suggested Concurrent Studies. ERDEC has extensive experience, including current research, on two classes of compounds that are likely to be important materials identified in the Front End Analysis. It seems prudent to conduct concurrent studies to fill in data gaps for these two classes. To this purpose, proposals for study of synthetic opioid anesthetics and alpha2-adrenergic sedatives are included in this package.

6. Risks and Limitations:

For many scenarios the desired characteristics of chemical immobilizers are similar to these depicted in James Bond films. In fiction, a chemical agent knocks out people instantaneously. In reality, the onset time for immobilization or unconsciousness takes longer, even when deploying the most potent anesthetic materials known. For other scenarios, a delayed onset or a less severe degree of immobilization may be desired. The other myth usually associated with stereotypical immobilizers is rapid recovery and lack of side effects. This demonstration will be conducted to estimate recovery rates, onset to effect, duration of effects and overall safety to people.

The most prevalent limitation for certain applications of this technology is not technological but one of policy. In early 1992, the U.S. Army canceled the Advanced Riot Control Agent Device (ARCAD) from going to 6.3B Demonstration and Validation because of multilateral treaty language restricting the use of riot control agents to internal law enforcement only. Since then, treaty language has changed to read "each state party undertakes not to use riot control agents as a method of warfare". This change in language may allow limited use of riot control agents as described by current U.S. policy (executive order 11850). A clarification of U.S. policy would be sought early in the program.

7. Project Plan:

Activity	Completion Date
Define Requirements	1Q FY95
Conduct FEA/TOA	3Q FY95
Select Compound/Hardware/Simulant	3Q FY95
Purchase/Synthesize Compound	4Q FY95
Toxicological Tests	3Q FY96
Hardware Testing	1Q FY97
Inhalation Demonstration (Primates)	3Q FY97

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8. Project Cost by Fiscal year:

FY 95	FY 96	FY 97	TOTAL
\$435K	\$525K	\$300K	\$1260

9. Organization Point of Contact:

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