

334.

PROPOSED NON-LETHAL WEAPON PROJECT

1. TITLE: Frontal Attack Anti-Vehicle Liquid or Aerosol Dispensing Mine
2. TYPE EFFORT: Advanced Development (6.3a)
3. PROPOSED BY: DCS Corporation
4. CAPABILITY SOUGHT AND USES TO WHICH IT COULD BE PUT: Pre-emplaced liquid or aerosol dispensing mines designed with sensors to selectively acquire tanks or other military ground vehicles and to release a spray at the front of the target.

This device would be useful to autonomously inhibit / deny either military or civilian vehicles access to restricted areas, or to mark vehicles that have bypassed checkpoints, and situations in general where lethal denial or more severe vehicle damage is unacceptable.

The effect on equipment is typically performance degrading and not catastrophic. Effect on personnel is less-than-lethal, although dependent on type and quantity of substance encountered and remedial actions taken.

5. TECHNICAL DESCRIPTION: Mine would autonomously dispense difficult-to-remove, brightly colored, radar reflective, or mobility degrading liquid or aerosol spray which would adhere to optical surfaces to blind the vehicle, destroy its camouflage, make it an easy radar target, or impair its mobility. Variety of liquid substances for different target effects (sticky foams, engine performance degraders, and depolymers) could also be dispensed. Most promising technology for accurate delivery (from mines) at useful ranges would utilize laminar flow nozzles.

6. RISKS AND LIMITATIONS: Technical risk is low. System size, weight, and effective target area coverage vs. required payload volume are limiting factors. Liquid delivery provides better range; aerosol spray delivery range may be too limited for effective operational use. Laminar flow nozzle technology exists although not optimized for this application. Effects of weather on delivered substances needs to be evaluated.

7. PROJECT PLAN: An ARDEC initiated FY92 SBIR Phase I funded contract (\$ 50 K) with DCS Corp. examined the potential for effective coating of vehicle surfaces with aerosols and liquids. (DCS coordinated with ERDEC to verify variety of vehicle performance degrading substances). DCS has submitted a Phase II SBIR proposal which will be considered for possible FY95 SBIR funding.

<u>ACTIVITY</u>	<u>START DATE</u>	<u>COMPLETION</u>
Engineering prototype	1QFY95	4QFY95
Prototype testing	4QFY95	2QFY96
EMD decision	3QFY96	4QFY96

8. PROJECT BUDGET COST BY FISCAL YEAR: \$ 1.2M. \$1.5M. FY95-96 (6.3a) respectively. (Unfunded).

9. ORGANIZATION POINT OF CONTACT: John Cline, U.S Army ARDEC, Attn.: SMCAR-CCL-CF, Bldg. 65, Picatinny Arsenal, NJ 07806-5001, (201) 724-1924 (voice), (201) 724-3793 (facsimile).

ONR-NLW-097

Frontal Attack Anti-Vehicle Liquid or Aerosol Dispensing Mine

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PROPOSED NON-LETHAL WEAPON PROJECT

ONR-NLW-098
 Liquid/Aerosol Dispersant Module for Short Range UAV Platform

1. TITLE: Liquid/Aerosol Dispersant Module for Short Range UAV Platform
2. TYPE EFFORT: Advanced Development (6.3a)
3. PROPOSED BY: DCS Corporation
4. CAPABILITY SOUGHT AND USES TO WHICH IT COULD BE PUT: The ability to degrade and discourage attacking forces, radar sites, anti-air missile batteries and other high value targets at depth behind enemy lines through Unmanned Aerial Vehicle (UAV) delivery of performance degrading substances. Primary usefulness would be in relatively deep strike non-lethal degradation of high value military assets, or to prevent escalation of low intensity conflicts by delivery of counter-mobility (anti-personnel, anti-vehicle) substances on avenues of approach to center of escalation.

The effect on equipment is typically performance degrading and not catastrophic. Effect on personnel is less-than-lethal, although dependent on type and quantity of substance encountered and other factors such as type of protective clothing, and effects of weather on delivered substances.

5. TECHNICAL DESCRIPTION: Existing UAV can be configured to carry a 200 pound liquid/aerosol spray module, which would include at least 12 gallons of any one of a number of sprayable substances. The filler could be a difficult to remove, bright colored, sticky substance that is corrosive and electrically conductive. Once it is dispensed on the selected target by the UAV, the coating would serve to ground out radars and radios, cover lenses of lasers and optical devices, negate camouflage, and impede the functioning of mechanical parts. A variety of liquid substances for different target effects (sticky foams, engine performance degraders, and depolymerers) could also be dispensed.

6. RISKS AND LIMITATIONS: Technical risk is low and dependent on capability of spray mechanisms to satisfy area coverage required for effectiveness.

7. PROJECT PLAN: There is no known unclassified program for system integration of a less-than-lethal liquid or aerosol dispensing mechanism into a UAV.

<u>ACTIVITY</u>	<u>START DATE</u>	<u>COMPLETION</u>
Engineering prototype	1QFY95	4QFY95
Prototype testing	3QFY95	2QFY96
EMD decision	3QFY95	4QFY96

8. PROJECT RITE COST BY FISCAL YEAR: \$1.5M, \$2.0M FY95-96 (6.3a) respectively. (Unfunded).

9. ORGANIZATION POINT OF CONTACT: John Cline, U.S Army ARDEC, Attn.: SMCAR-CCL-CF, Bldg. 65, Picatinny Arsenal, NJ 07806-5001, (201) 724-7924(voice), (201) 724-3793 (facsimile).