

# **COUNTERPROLIFERATION SUPPORT PROGRAM**

## **FY95 Project Overview**

10 December 1994

95-F-1134  
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**DATSD(AE)(CP)**

December 10, 1994

## **Counterproliferation Support Program: FY95 Project Plan**

### **Introduction**

The FY95 Defense Appropriations Act (PL-103-335) and Defense Authorization Act (PL-103-337) provide for a new Department of Defense counterproliferation initiative. The funds for this initiative will support a range of programs that will significantly improve projected U.S. counterproliferation capabilities. The conferees directed that the Department of Defense provide the congressional defense committees with a plan outlining the use of these monies prior to obligation of any funds. This report is in response to this requirement.

### **Background**

In the Preface to President Clinton's 1994 National Security Strategy report, he warned: "The proliferation of weapons of mass destruction represents a major challenge to our security." At least twenty countries, many of them hostile to the United States and our Allies, have acquired or are seeking to acquire the capability to produce nuclear, chemical, and/or biological weapons and the means to deliver them. These weapons pose serious threats to the U.S. and its allies.

Concern over the growing proliferation of weapons of mass destruction (WMD) prompted a congressionally-mandated interagency review of current government nonproliferation (NP) and counterproliferation (CP) activities. The results of the review are summarized in the May 1994 Report to Congress entitled "Report on Nonproliferation and Counterproliferation Activities and Programs". This study identified several "areas for progress" in which additional funding could significantly enhance projected NP/CP capabilities. The \$60M provided in FY95 will be used to initiate a new "CP Support Program" which begins to implement many of these initiatives.

### **Program Objectives and Approach**

The CP Support Program will develop the needed CP capabilities by building upon related projects in the Services, DoD Agencies and non-DoD Agencies, including the Intelligence Community and the DOE laboratories. Figure 1 summarizes many of the CP initiatives being addressed by various DoD organizations, including those projects under the CP Support Program.

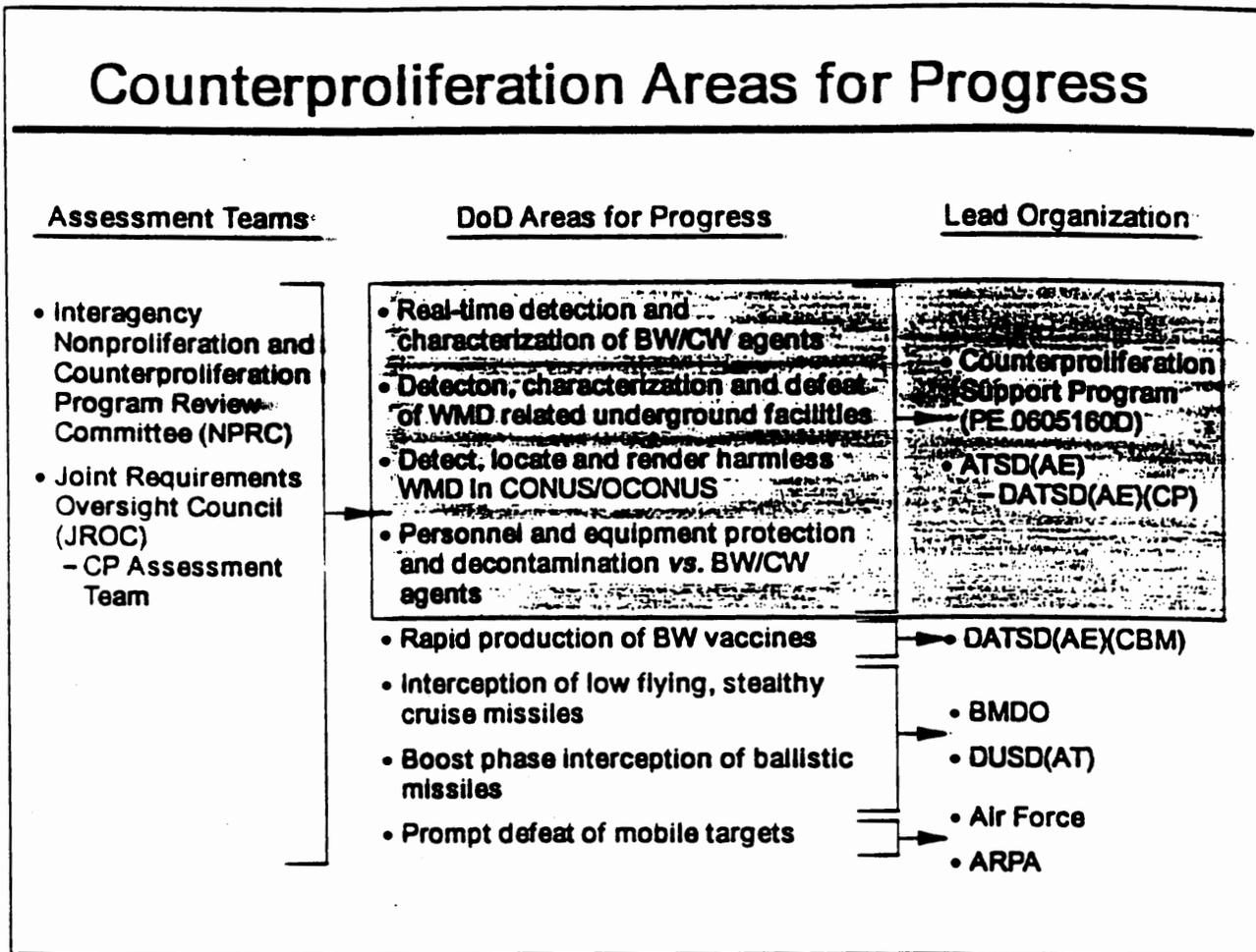


Figure 1.

*This figure shows the Counterproliferation Areas for Progress identified by the Nonproliferation and Counterproliferation Program Review Committee (NPRC). The lead organizations for each area are shown.*

The key counterproliferation "areas for progress" were selected and prioritized by the interagency Nonproliferation and Counterproliferation Program Review Committee (NPRC) and the Joint Requirements Oversight Council (JROC). The CP Support Program was developed in close coordination with the JROC, the various executing agencies, and cognizant OSD components. CP Support Program priorities are based on the following criteria: first, eliminate major gaps in deployed capabilities by leveraging existing systems and operational concepts and accelerating ongoing programs; second, enhance technology programs that will lead to improved first or second generation CP capabilities. The FY95 CP Support Program Plan is described below and summarized in Figure 2.

<b>FY95 Counterproliferation Support Program Plan</b>		
<b>Initiatives</b>	<b>Enhanced Program Objectives</b>	<b>FY95 Funding* (\$M)</b>
<ul style="list-style-type: none"> <li>• BW and CW Detection &amp; Characterization</li> </ul>	<ul style="list-style-type: none"> <li>• Early fielding of standoff and point detection and characterization systems</li> </ul>	17.1
<ul style="list-style-type: none"> <li>• Individual/Collective Protection and Decontamination</li> </ul>	<ul style="list-style-type: none"> <li>• Restoration of funding for BW/CW Decon Tech Base</li> <li>• Early fielding of JSLIST and AICPS</li> <li>• Joint NBC Simulation, Training and Doctrine</li> </ul>	11.5
<ul style="list-style-type: none"> <li>• Hard Target Characterization and Defeat</li> </ul>	<ul style="list-style-type: none"> <li>• Development and fielding of enhanced target characterization systems; collateral effects mitigation and enhanced lethality weapons; target planning aids</li> </ul>	25.8
<ul style="list-style-type: none"> <li>• Paramilitary/Terrorist WMD Threats</li> </ul>	<ul style="list-style-type: none"> <li>• Advanced concepts for detecting and rendering safe BW/CW</li> <li>• Protection of military facilities/mobilization nodes</li> <li>• Enhanced BW/CW incident training</li> </ul>	3.2
<ul style="list-style-type: none"> <li>• Detect &amp; Track WMD Shipments</li> </ul>	<ul style="list-style-type: none"> <li>• Specific Shipments Identification</li> </ul>	2.4
<b>Total</b>		<b>60.0</b>

\*Funding includes related assessment, integration and oversight activities.

Figure 2.

*This figure shows the distribution of FY95 funding among CP initiatives along with the objectives related to the funding.*

**1. Biological Warfare and Chemical Warfare (BW and CW) Detection and Characterization.** Rapid detection and characterization of BW and CW agents is critical to the successful employment of BW and CW countermeasures. Such countermeasures include: maneuver for contamination avoidance, implementation of individual and collective protection systems, decontamination support, and timely implementation of appropriate medical treatments. Current fielding dates for critical long range detection systems are beyond FY01. Resources from the CP Support Program will significantly accelerate deployment of these systems. R&D activities for BW agent remote and point identification and characterization detectors will also be enhanced with an emphasis on man-portability and the potential for future deployment on unmanned air vehicles (UAVs). Specific projects to be supported include the following:

**A. Accelerated Deployment of the Long Range Standoff Detection System:** The capability to detect, locate and track BW aerosol clouds at long ranges is required in order to provide sufficient early warning time to implement protective countermeasures and to reduce the number of detection units needed to achieve effective area coverage. At present, there are no such systems in the field. Funds from the CP Support Program will accelerate the first fielding of these systems and provide a complete long range BW warning capability to the Army several years sooner than currently programmed.

**B. Enhanced Development of Biological Agent Detectors:** A capability to characterize BW clouds remotely and to identify specific agents automatically is critical for the timely

implementation of appropriate countermeasures. Remote BW detection and characterization are also needed for other missions, including demilitarization of suspected biological agent production plants, civil defense against terrorist attack, and the detection of local contamination due to accidents. The CP Support Program emphasizes research and development of real time, automatic BW detection and identification capabilities. Specifically, the program will support the following technologies: a) short range UV laser-induced fluorescence LIDAR for standoff characterization, and b) miniaturized biological agent point detectors involving birefractometer, fiber optic wave guide and whole cell biosensor (NERVE) technologies.

**C. Chemical Agent Surface Acoustic Wave (SAW) Detector:** The CP Support Program will fund development of a chemical vapor detector system based on SAW technology to meet the military standards and requirements for ground, sea and air based CW agent point detectors. This technology can provide a miniaturized device that is rugged, has low-power consumption, and is relatively inexpensive. The final sensor system will have great potential as a commercial product for environmental control and remediation, food and industry processes, and safety. The SAW chemical vapor detector is based on technology developed by ARPA and the Services.

**2. Individual/Collective Protection and Decontamination.** The CP Support Program will provide enhanced funding to key projects in the areas of individual and collective protection and decontamination. Funding will be added to the Joint Service Lightweight Suit Technology (JSLIST) I and the JSLIST II programs to meet Service Acquisition Objectives. Funding will also be restored to the BW decontamination technology and advanced development technology base. Deployment will be accelerated for the Advanced Integrated Collective Protection System (AICPS). Resources from the CP Support Program will also support additional battlefield simulation, training and doctrine development for the advanced CP Systems. The specific initiatives to be funded are the following:

**A. Accelerated Deployment of the Joint Service Lightweight Suit Technology Program:** The JSLIST Program is a joint Service program to field lightweight, low cost, durable chemical/biological (CB) resistant clothing. The program is divided into two phases: JSLIST I and II. JSLIST I is an ongoing program arising from Joint Service Operational Requirements. JSLIST II is a follow-on effort intended to enhance the capabilities of JSLIST I with state-of-the-art materials, designs and fabrication technologies. With the CP Support Program funding augmentation, the JSLIST I program will transition improved technology into suits while maintaining current fielding dates and accelerate fielding of the enhanced JSLIST II system.

**B. Decontamination Technology:** BW and CW decontamination capability shortfalls exist within all Services. While current decontamination systems can be effective against many BW and CW agents, they also impose severe operational limitations and logistical constraints. These systems require large amounts of water and involve highly corrosive decontamination agents. The current budget provides for a limited effort in the area of

advanced decontamination systems. The CP Support Program provides additional funding for the BW decontamination technology base, leading to a down-select of specific technologies for advanced development.

**C. Accelerated Deployment of Advanced Collective Protection Equipment:** In a continuing effort to enhance the U.S. Armed Forces' ability to carry out their mission in a nuclear, biological, and chemical (NBC) environment, the U.S. Army Edgewood Research, Development and Engineering Center (ERDEC) is developing the Advanced Integrated Collective Protection System (AICPS). The AICPS provides protection against chemical and biological agents and radioactive particles for a variety of tactical and combat support/service vans and shelters. The CP Support Program provides supplemental funding to accelerate its deployment.

**D. Joint NBC Simulation and Training:** Advanced simulation capabilities will provide realistic scenarios of potential adversary use of NBC weapons. Simulations will include improved modeling of casualty rates and the effect of NBC countermeasures, such as protection and decontamination. These models will be compatible with the distributed interactive simulations (such as the Automated Nuclear, Biological and Chemical Information System, ANBACIS) currently in use for conventional wargaming and planning. They will also be used to assess the effectiveness of countermeasures and tactics developed to counter NBC weapons effects and to influence equipment design and doctrine development.

**E. Joint NBC Doctrine Development:** The project will develop doctrine for tactics, techniques and procedures necessary for effective joint operations in an NBC environment. The doctrine will be used to develop joint operational and training requirements for the military forces and to guide NBC defense joint professional training development.

**3. Hard Underground Target Characterization and Defeat.** Current threat assessments indicate that potential adversaries have begun protecting NBC development, storage and support facilities and deployment/delivery systems in hardened underground sites and tunnel complexes. Many of the sites are "out of the reach" of existing conventional weapons. In addition, the possibility for undesired or unacceptable collateral damage resulting from the use of weapons presently in the inventory may constrain attacks against these facilities. Serious deficiencies in U.S. capabilities to counter these targets were apparent during Desert Storm.

The CP Support Program will accelerate technologies leading to the fielding of a new generation of hard underground target defeat weapon systems. The new capabilities will include advanced sensors for pre-attack target characterization and post-attack BDA; enhanced lethality weapons and penetrators to increase the likelihood of target defeat while reducing the likelihood of collateral effects; and advanced targeting and strike planning aids to predict damage and collateral effects and to optimize the use of the enhanced weapons. The specific initiatives are as follows:

**A. Sensor Technology Project:** The CP Support Program will support the development of operational and technical enhancements to BDA, restrike monitoring, and target characterization sensor capabilities. The increased funding will also be used to define the command and control architecture necessary to support the improved sensors and will procure prototype systems for demonstration that will subsequently provide residual capability for user commands.

**B. Target Planning Projects:** The CP Support Program will support the development of an automated, in-theater target planning tool with test validated modules for weapon effects on hard targets of enhanced payloads; hazard prediction of NBC collateral effects; and assessments of functional disruption of cut and cover facilities and tunnel portal adits. This tool will be modular and integrated with current Military Service targeting tool development. The increased funding will also construct and equip a hardened WMD structure with realistic chemical production and storage equipment for target response experiments. Residual targeting tool capability and support will be provided to operational commands.

**C. Weapons Projects:** The CP Support Program will expand the efforts to identify promising technologies to destroy, disable, or deny enemy use of BW and CW agents. Concept definition of enhanced payloads for defeat of biological and chemical agents and associated facilities will be completed. The additive advanced technology funding will develop a precision weapon guidance system, a weapon borne BDA sensor, an advanced unitary munition, and alternate payloads for existing hard target munitions.

**D. Biological Storage Facility Advanced Technology Demonstration (ATD):** The CP Support Program will support an ATD to demonstrate the capability to predict, measure and monitor simulated collateral effects resulting from the attack of WMD underground bunker targets. In addition, the collateral effects mitigation of specialized munitions will be evaluated.

**E. Counterproliferation Integrated Technology Demonstration:** CP Support Program funding will support operations planning, operational concept development, and post-demonstration analysis of an integrated technology demonstration incorporating the technologies and systems described in the previous paragraphs. An integral part of the planned demonstration is to provide residual operational capabilities and post-demonstration support to the Services.

**4. Paramilitary/Terrorist WMD Threats.** Covert deployment and use of WMDs by terrorists or during paramilitary operations against U.S. or allied military facilities and mobilization/logistical nodes poses a significant threat to civilians and to U.S. and allied military operations. Capabilities exist for handling nuclear related threats through Nuclear Emergency Search Team (NEST) operations which, in turn, are supported by capabilities provided by DoD's Nuclear Weapons Incident Program (NWIP). Similar capabilities exist for the BW and CW threat response. The CP Support Program will provide added resources to further strengthen BW and

CW detection and "render safe" capabilities along with supporting technologies to counter the BW and CW threat. In addition, funds will be provided to support critical BW and CW incident joint training exercises. The specific projects are the following:

**A. Protection of Military Facilities and Mobilization/Logistical Nodes against Nuclear Paramilitary and Terrorist Threats:** The NWIP will conduct studies and exercises to determine requirements for defense against paramilitary, terrorist, and covert WMD threats in regional conflicts. This effort will identify and assess the operational enhancements needed to protect key military facilities and logistical nodes against paramilitary, terrorist, and covert nuclear threats. These enhancements will include: near term increases in the inventory of search equipment and expanded force structure; deployment of personnel and equipment at additional operating bases to reduce response time; and advanced technology detection, localization and identification equipment. This effort will be closely coordinated with the DOE NEST program, especially the development programs for advanced technology systems for detecting, locating and rendering safe nuclear devices.

**B. Advanced Technology for Countering BW and CW Paramilitary and Terrorist Threats:** The CP Support Program provides additional funding for enhancing capabilities for countering paramilitary, terrorist, and clandestine/unconventional delivery of BW and CW threats. The enhanced program will increase the technical support for CP operations, especially for BW and CW detection, disablement and effects mitigation. The enhanced program will deliver operational prototypes of special equipment for enhancing the capabilities of U.S. Army Chemical/Biological Response Teams (CBRT) and Special Operations Forces (SOF) in these areas. The CP Support Program will also fund additional training exercises to develop and improve prototype designs and operational concepts, improve proficiency, and maintain readiness.

**C. Operational Plans and Exercises for Response to BW and CW Threats:** The principal objective of this project is to increase the readiness posture of the response teams. Additionally, this project will integrate explosive ordnance disposal (EOD) team access and disablement capabilities and equipment infrastructure with the CBRT capabilities as expeditiously as possible. To accomplish these two goals, technologies and procedures from the counter-nuclear program which are relevant to the BW and CW problem will be analyzed and applied as appropriate to the development of hardware and training exercises. Extensive cooperation between the DoD Technical Response Group (DTRG), EOD and CBRT personnel is required. Joint training exercises will be conducted to improve readiness.

**5. Detect and Track WMD Shipments.** The ability to track and identify shipments of WMD materials will play a critical role in combating the proliferation of WMDs and their delivery systems. The objective of this project is to acquire, deploy and support the operation of equipment which will improve the capability to identify and track WMD shipments. Fielding of this capability will begin in FY95.

## **Conclusion**

**The FY95 Counterproliferation Support Program outlined above has been developed as the initial step in a multi-year Counterproliferation Program that will be submitted to the Congress in the forthcoming FY96-01 Defense Program. This multi-year Program will accelerate the acquisition of planned capabilities and develop new initiatives that will render the acquisition of WMD an undesirable military option for developing countries, and will protect U.S. forces and allies should such weapons ever be employed.**