

## **CHAPTER 4**

# **NUCLEAR, BIOLOGICAL AND CHEMICAL WARFARE DEFENSE LOGISTICS STATUS**

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## 4.1 INTRODUCTION

Nuclear, biological and chemical (NBC) defense logistics support is a critical area that requires extensive coordination and integration. Two Joint organizations exist to coordinate actions in this area: the Joint Services Coordination Committee for Chemical Defense Equipment (JSCC-CDE) and the Joint Service Materiel Group (JSMG). The JSCC was chartered under the Joint Materiel Priorities and Allocations Board (JMPAB) during Operation Desert Shield/Storm. The JSMG was established by the Joint Service Agreement (JSA) of August 1994. While both the JSCC and the JSMG have been chartered to address NBC defense logistics issues, there are differences in their emphasis. The JSCC is primarily a war-time agency, charged with recommending allocations of NBC defense equipment among the four Services in time of war. Their last meeting was in January 1995. The JSCC is currently focused on the Joint Services Chemical Defense Consumption Rates (JCHEMRATES) study to determine CDE expenditures for a two nearly simultaneous MRC scenario. The emphasis of the JSMG is on ensuring a smooth transition from research and development through production to fielding, sustainment, and retirement. It is also charged with developing and maintaining the Joint Service NBC Defense Logistics Support Plan.

Three problems remain from last year regarding the accountability and management of NBC defense item inventories:

- The Services continue to have very limited asset visibility of consumable NBC defense items below the wholesale level. This has the full attention of the senior NBC Defense managers.
- While the Defense Acquisition Board (DAB) tasked the Joint NBC Defense Board to recommend secondary item procurement policy, the Services still procure consumable NBC defense items through multiple, separate, and distinct funding authorizations, as discussed in Section 4.6 of this chapter.
- The Army continues to divide the responsibility for accountability and management of NBC defense equipment between two offices. Program management of NBC defense items that are classified as major end items is a responsibility of the Deputy Chief of Staff for Operations and Plans, whereas management of items classified as secondary items and inventory status are the responsibility of the Deputy Chief of Staff for Logistics. Automated systems allow accurate inventory management of the Army major end items, but not yet for consumable, secondary items at retail level.

The JSMG developed a Joint Service NBC Defense Logistics Support Plan (LSP) during 1996. The plan links the acquisition process with the sustainment of fielded NBC defense equipment, to include information on industrial base and war reserve issues. In an effort to focus on critical issues, the Integrated Product Team responsible for developing the LSP reviewed 18 representative NBC defense items, consumables and parts.

The LSP identified several short, mid, and long-term strategies to implement process improvements. *Short-term strategies* include forming Joint Service working groups to focus on unit asset visibility, wholesale/retail surveillance, shelf-life management, DLA management of parts, forecasting total item demand, and configuration management control of fielded NBC defense items. *Mid-term strategies* aim at empowering the JSMG to manage implementation of logistics process improvements, such as hosting an annual readiness and sustainment review, developing war reserve numbers, determining NBC defense requirements for U.S. civilians in theater, and reviewing the policy on assisting non-DoD agencies with NBC defense logistics support. *Long-term strategies* focus on the development of a joint service NBC defense logistics process and “Extended Enterprise” for the entire life cycle. This Enterprise would develop a partnership of both medical and non-medical NBC defense agencies in all Services and industry to better coordinate and manage the development, production, and stockpiling of NBC defense equipment.

The LSP is currently being reviewed by the Joint NBC Defense Board. There is general acknowledgment that problems exist in NBC defense logistics but they are not insurmountable. The JSMG has begun drafting a second edition of the LSP. This second edition will examine *all* NBC defense equipment (medical and non-medical), focusing on readiness and sustainment issues.

## **4.2 NBC DEFENSE LOGISTICS MANAGEMENT**

NBC defense logistics management remains in transition. The Joint NBC Defense Board has begun to exercise full authority in this area; and the JSMG, which reports to the Joint NBC Defense Board, has been charged with coordination and integration of logistics readiness. Although the JSMG and its Secretariat have been established, the lack of a dedicated budget and dedicated manpower in the logistics area continues to hinder it in fully exercising its responsibilities.

The DoD NBC defense community continues to rely heavily on the Defense Logistics Agency (DLA) and the Army Materiel Command (AMC). DLA and AMC are the inventory managers or National Inventory Control Points (NICP) for the vast majority of NBC defense items in all four Services. They have responsibility for industrial base development, acquisition, and storage of wholesale peacetime and sustainment wartime stocks. They buy (process procurement actions) and store, if requested, NBC defense materiel for the Services; however, the *Services must provide funding* to DLA and AMC for the procurements.

Currently, only Army owned sustainment stocks are stored in DLA and AMC depots. The other Services store their sustainment stocks at unit level or at their own Service depots/facilities. The stocks held in DLA and AMC wholesale accounts would provide limited back-up for unit-held Service stocks during a contingency. Both DLA and AMC will remain key players in the future NBC defense logistics management system. The Joint NBC Defense Board, through the JSMG, provides coordination and integration, based upon all Services’ and commanders-in-chief’s (CINCs’) inputs. DLA and AMC will continue to provide services such as raw data collection, inventory control, and a distribution infrastructure.

Service inventories of NBC defense items maintained at unit level use either manual records or a semi-automated tracking system. Stocks held at wholesale level are maintained using a separate automated system. Currently, there is little connectivity between the two systems.

For example, the Air Force uses an automated system called Standard Base Supply System (SBSS) to track and monitor supply transactions and stockage at installation level. This system does not provide for connectivity to other installations to link logistics databases. When items are issued to gaining units at an installation, they are generally transferred from SBSS records to non-automated unit records. Additionally, accountability of only selected NBC defense items (e.g., protective masks) is entered and routinely tracked on SBSS. Other NBC defense items, because of reduced logistics coding requirements, are maintained only on non-automated unit records. To correct this deficiency, the Air Force established the Mobility Automated Inventory Tracking System (MAITS) to provide a semi-automated tracking system for chemical warfare defense equipment (CDE) items. MAITS has provided for increased Air Force staff asset visibility for installation CDE stocks, but it does not provide information flow directly into the wholesale databases. This system will, however, provide an interim Air Force CDE logistics tracking net until current Air Force automated databases are linked under the DoD Total Asset Visibility (TAV) program. While other Services' sub-automated databases have different names, their problems are similar. As a result, there is limited Service level asset visibility for NBC defense items. However, the Services are addressing this deficiency under the auspices of TAV, a long-term initiative which will link existing DoD logistics automated systems. Again, the intended product envisioned by the JSMG will address this issue in an effort to display a "big picture" of the inventory status.

### **4.3 QUANTITIES, CHARACTERISTICS, AND CAPABILITIES**

The results of the data collection efforts are compiled in Tables 4-2 through 4-5 in Appendix 1, Logistics Readiness NBC Report Data, located at the end of this chapter. A table is included for each of the four Services.

Under the provisions of Title X of the FY95 Defense Authorization Act, Service Secretaries are responsible for manning, equipping, and training. Hence, the Services develop quantitative and qualitative requirements for NBC defense items. The Joint NBC Defense Board coordinates procurement of NBC defense items based on the Services' requirements.

The items listed under Nomenclature in Tables 4-2 through 4-5 of Appendix 1 are the currently fielded NBC defense items in the Services. The Wartime Requirement quantities are those computed by the Services. Wartime requirements for all four Services include materiel requirements to support active duty, reserve and national guard forces; however, few Army National Guard units are included. Materiel requirements for training and peacetime replacements (wear and tear) are *not* included in the wartime requirements.

The Army and Marine Corps computed wartime requirements based on the need to satisfy the demands of two nearly simultaneous major regional conflicts (MRC). They were computed using JCHEMRATES III. The JCHEMRATES III model computes both initial issue and wartime consumption based on the two nearly simultaneous MRC scenario.

The Navy and Air Force computed wartime requirements based on the force strengths that will deploy to satisfy the demands for any contingencies. They did not use the JCHEMRATES III model because incorrect planning factors used within the JCHEMRATES III model made the results questionable. Service logistics planning factors for wartime consumption quantities were used instead. In contrast to the 120 days sustainment requirement computed by the Army and Marine Corps, the Navy's sustainment (wartime consumption) quantities were based on 60 days for shore units and 90 days for fleet units. *During 1997 all four Services are participating in development of JCHEMRATES IV which will be a more accurate prediction of the initial issue and sustainment quantities required for each Service. Results of this effort should be available for inclusion in next year's Annual Report to Congress.* Because the Services use different methodologies for determining their requirements, no Joint Service requirement is shown. The use of a common methodology (*i.e.*, JCHEMRATES IV) will allow the presentation of Joint Service requirements in future reports.

The *Stocks on-Hand* quantities are wartime stocks being held by the Services. The stocks on-hand represent the total of all serviceable NBC defense materiel available in each of the Services (unit held stocks and stocks in the supply system, to include stocks stored in depots/facilities). Marine Corps prepositioned stocks were inadvertently not counted in this report. They will be included in next year's report. The DLA and AMC depot stocks are included in the Army's Stocks on-Hand since the majority of NBC defense materiel held in DLA and AMC depots is Army owned. Only a small percentage of the stocks are DLA/AMC NICP owned for replacement of Service stocks (upon receipt of a funded requisition). The quantities of stocks on hand are more accurate in this report than in last year's report due to some improvements in asset visibility.

Quantities *On Contract* are those quantities for which a Service or agency has submitted a funded requisition or purchase order but has not received the requisitioned items. Finally, the quantities depicted as *Estimated Procurements* are quantities the Services plan to buy to replace peacetime consumption of NBC defense assets, to include training use and shelf-life expiration, and to buy wartime sustainment stocks. It must be emphasized that these are based on major command estimates of requirements. Actual procurements will be based on funding available.

#### **4.4 LOGISTICS STATUS**

During data collection for the FY96 report, information on the inventory status of fielded NBC defense equipment was compiled. From this data, 80 items were reviewed extensively. NBC defense items such as batteries, spare parts, and sub-components were considered as a subset of the primary item for risk assessments, and hence not reviewed separately. Trainers were not included in the assessment process since they do not reflect wartime service requirements. Quantities required for wartime needs were then compared to quantities currently

on-hand. Characteristics and capabilities of selected fielded NBC defense items are discussed in detail in Annexes A-D of this report. The following items have been added to the FY96 report:

- M56 Filter Element Set, Gas Particulate
- M1A1-19 Filter, Precleaner and Particulate
- M2A2 Air Purifier

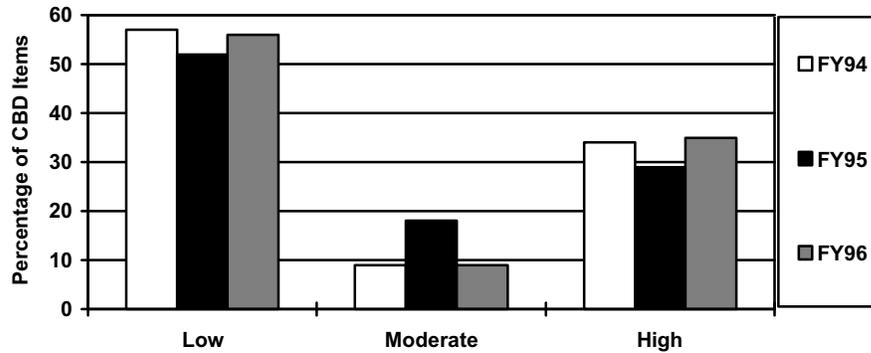
Of the 80 items extensively reviewed, 45 items were assessed. These were rated as being in a low, moderate, or high risk category based on data as of September 30, 1996. "Risk" was defined as the probability that a shortage in the wartime requirement would exist which would severely impact DoD's capability to respond to a contingency. Shortages were calculated by comparing wartime requirements to wartime on-hand quantities in Tables 4-2 through 4-5. Low risk was assessed if less than a 15% shortage existed (or at least 85% of the wartime requirement was currently on-hand in Service inventories). Moderate risk was assessed if a 16–30% shortage in the wartime requirement existed (or the percentage of the wartime requirement of on-hand quantities is between 70–84%). An item was assessed as being at high risk if the quantity on-hand is less than 70% of the wartime requirement. While some of the items assessed changed from the previous year's report due to obsolescence, assessed items remained as constant as possible to provide for a trend analysis.

**RISK ASSESSMENT:**

<b>Low</b> –	Services have at least 85 percent of wartime requirement on-hand to support two nearly simultaneous major regional contingencies
<b>Moderate</b> –	Services have between 70 to 84 percent of wartime requirement on-hand to support two nearly simultaneous major regional contingencies
<b>High</b> –	Services have less than 70 percent of wartime requirement on-hand to support two nearly simultaneous major regional contingencies

Table 4-1 contains exhibits which provide the results of the assessment. Programs rated as high or moderate risk are discussed in greater detail at Appendix 2 to this chapter. A three year comparison of data assessments is shown in Figure 4-1.

In comparison to FY95 report data, the percentage of the FY96 report's items in the low risk category increased from 52% to 56%. The percentage of items in moderate risk decreased from 18% to 9%, while the percentage of items in the high risk category increased from 29% to 35%.



**Figure 4-1. Logistic Assessments: Major NBC Defense Items**

While these changes reflect only minor fluctuations, the following items are highlighted:

- While quantities of BDOs appear adequate, the shelf life of much of the BDO inventory is reaching its end. There are insufficient procurement funds planned for future replacements, and this threatens a smooth transition to the JSLIST program. As a result, the BDO risk has been assessed as moderate.
- CWU 66/77P remains the only Air Force capability for air crew ensembles with the expiration of the CP underoverall. The CP underoverall are being maintained to provide limited backup capability. Inadequate funds and no established procurement contract hamper the ability to correct this assessment in the short term.
- M256A1 detection kits remain high risk due to a lack of procurement orders to fill the shortfall in wartime requirement for the kits.
- While stocks of GVO/BVO pose a high risk, remaining serviceable stocks of CP footwear covers will be available through the upcoming procurement cycle. As a result, the risk posed by the current stockage level of these items was assessed as low.
- While the M291 and M295 Decontamination Kits are assessed as posing a high risk, the inventory shortage of the M291 kits are offset by excess inventory of M258A1 Decontamination Kits, and the status of the M295 kits should improve significantly when the FY97 procurement is executed.
- All collective protection systems pose a high risk at this time, partly due to their only being at the initial fielding stage of issue, but also due to increased emphasis on contamination avoidance and individual protection. As emphasis in these two latter areas has increased, funding for the collective protection program has decreased. As the procurement cycle matures, the risk these systems pose will lessen slightly.
- Some medical NBC defense items appear to be at high risk due to implementation of the Army's Division Ready Brigade (DRB) set initiative. Individual issue chemical defense materiel is now centrally funded, managed and stored in DRB sets for the Department of the Army. A more in-depth discussion on these medical items is included in Chapter 3 and Annex D of this report.

**Table 4-1. Logistic Assessments: Major NBC Defense Items**

**CONTAMINATION AVOIDANCE/DETECTION EQUIPMENT**

Items	Assessment	Remarks
Detection Kit, M256A1	High	Low inventory
M8 paper	Low	
Individual Chemical Agent Detector	High	
Chemical Agent Alarm, M8A1	High	
Chemical Agent Monitor (CAM)/Improved CAM	Moderate	
Chemical Agent Point Detection System (CAPDS)	Low	
Chemical Warfare Directional Detector, AN/KAS-1	Low	
M21 Remote Sensing Chemical Agent Alarm (RSCAAL)	High	
NBC Reconnaissance System "Fox", M93	Low	
Water Testing Kit, M272	Low	
NBC Marking Set, M274	Low	

**INDIVIDUAL PROTECTION**

Items	Assessment	Remarks
<i>Masks</i>		
M17 Series, General Purpose	Low	Being replaced by M40 (USA/USMC)
MCU-2 A/P	Low	
M40, General Purpose	Low	
M42, Tank	Low	
Mask, M43A1, Apache	High	
Mask, MBU-19/9 AERP	High	
<i>Suits</i>		
Battle Dress Overgarment (BDO)	Moderate	End of shelf life approaching
Saratoga Suit	High	
CWU 66/77P	High	
Chemical Protective Undercoverall	Low	
Suit, CP, OG, Mk III	Low	
Aircrewman Cape	Low	
<i>Gloves/Overboots</i>		
Chemical Protective Gloves (7/14/25-mil)	Low	Risk lowered due to CP footwear cover stocks
Green/Black Vinyl Overshoes (GVO/BVO)	Low	
Chemical Protective Footwear Covers	Low	
Disposable CP Footwear Covers	Low	
CP Socks	Low	

Note - Only selected Low Risk programs are displayed for information purposes.

**Table 4-1. Logistic Assessments: Major NBC Defense Items (continued)**

**COLLECTIVE PROTECTION**

Items	Assessment	Remarks
Shelter, Collective Protective, M20/A1	High	Low stockage; M20A1 being fielded
Portable Collective Protective System	High	Low stockage
Air Purifier, M2A2	High	Initial fielding
Filter, Precleaner and Particulate	High	Initial Fielding

**DECONTAMINATION EQUIPMENT**

Items	Assessment	Remarks
Skin Decontamination Kit, M258A1	Low	Being replaced by M291
Skin Decontamination Kit, M291	Low	Risk lowered based on M258A1 stocks
Individual Equipment Decontamination Kit, M295	High	FY97 Procurement
Decontaminating Apparatus, M11	Low	On-hand quantity assessed as adequate
Decontaminating Apparatus, M13	Low	
Lightweight Decontamination System, M17A2	Moderate	Modernization Item; still fielding
Power Driven Decontamination Apparatus, M12A1	Moderate	Risk increased due to maintenance
A/E32U-8 Decontamination System	Low	

**MEDICAL DEFENSE**

Items	Assessment	Remarks
Nerve Agent Antidote Kit (NAAK)	High	DRB component (Army)/item being replaced
Atropine Autoinjector	Low	
2-PAM Chloride Autoinjector	Low	
Nerve Agent Preventative Pyridostigmine (NAPP) Tablet	High	DRB component (Army)
Convulsant Antidote Nerve Agent (CANA)	High	DRB component (Army)/low quantity for Air Force
Biological Warfare Vaccines	High	Prime contract for development, production, FDA licensure, and storage planned

Note - Only selected Low Risk programs are displayed for information purposes.

## 4.5 PEACETIME REQUIREMENT

In peacetime, NBC defense equipment is necessary to train personnel with the use of the equipment and build confidence that it will provide the necessary protection when used correctly.

Individual protection equipment is maintained at the unit level. Generally, items used in peacetime for training are drawn from contingency stocks, requiring units to maintain both training and contingency stocks. For selected items such as protective clothing, contingency utility is lost when the item is used (or consumed) for training. Because peacetime training requirements are met in this manner, major commands do not track training equipment. The Services, however, have indicated that adequate NBC defense equipment is on-hand to conduct training.

Individual medical chemical defense materiel (*i.e.*, Nerve Agent Antidote Kits (NAAK), Convulsant Antidote Nerve Agent (CANA), Nerve Agent Preventive Pyridostigmine (NAPP) tablets, or more commonly Pyridostigmine Bromide (PB) Tablets) are no longer stored at the unit level (with the exception of those items in Sets, Kits, and Outfits). The Army Medical Department centrally funds and manages these items for units in Division Ready Brigade (DRB) sets. To date, 20 DRB sets have been strategically fielded worldwide. In addition, six DRBs are maintained by the manufacturer (three sets for contingencies and three sets for training. The DRB set contains 15,000 each of NAAK, 5,000 each of CANA, and 1,000 packages of PB tablets. These sets will be issued to deploying units at the direction of the Office of the Surgeon General/Department of the Army Office of the Deputy Chief of Staff for Logistics. One DRB set contains the appropriate individual medical chemical defense materiel for 5,000 personnel. Components of the DRB sets are stored separately since PB tablets must be refrigerated and CANA requires secured storage. Due to the current “investigational new drug” status of the PB tablets, this component will not be issued to units without prior approval from Headquarters, Department of the Army.

## 4.6 FUNDING

In accordance with the NBC defense management initiatives outlined in Chapter 1, funding of RDT&E and procurement was centralized in a DoD defense-wide account beginning in FY96. However, operations and maintenance (O&M) funding for NBC defense materiel has not been consolidated at the DoD level. Therefore, for non-major (secondary) end items (*e.g.*, consumables, decontamination kits, detection kits, and filters), each Service continues to separately fund replenishment and sustainment of NBC defense equipment. Depot maintenance and contractor logistics support for some of the low density major items are also O&M funded. These appropriations are not included in the joint NBC defense program.

Funding of NBC defense items classified as war reserves secondary items (WRSI) remains a significant issue. The Services are responsible for the funding of items in war reserve stocks. The requirements for these items are developed by each Service. Funding of WRSI is made from Congressional appropriations made into the Defense Business Operations Fund

(DBOF) from transfer of Services' O&M funds. For example, replenishment of NBC defense items in Army war reserves will require substantial funding from 1999 through 2006 as these items reach their maximum extended shelf lives. Funding will be required to replace the Army's current required inventory of BDOs with the Joint Service Lightweight Suit Technology (JSLIST) Advanced Battle Dress Overgarment (ABDO) and to build required initial stockage and minimum sustainment (war reserve) stock to meet the current defense planning guidance. The Marine Corps, through its normal requirements generation and acquisition process, was able to obtain a 100% war reserve; however, when they based their war requirements on the current version of JCHEMRATES, the USMC has a shortage of 500,000 suits. All four Services are currently working together to develop a more accurate JCHEMRATES IV model.

Under the current acquisition procedures and DoD guidance to minimize wholesale stockpiles, procurements are based on funded Service requisitions. The Services remain responsible for program funding to replace NBC defense equipment wartime stocks. Procurement is usually based on economic buy quantities (a consolidation of all Service requisitions) to provide the best value to the government. Some procurements of non-critical items, however, suffer significant delays in delivery to the requisitioner because of the time required to accumulate sufficient requisitions to produce economic buy quantities.

#### **4.7 INDUSTRIAL BASE**

In August 1996, DoD published a report titled, *Joint Service Industrial Assessment for the Nuclear, Biological, and Chemical (NBC) Defense Sector*. The assessment provided the Joint NBC Defense Board with a screening tool that identifies critical areas within the NBC defense sector of the DoD industrial base. It built upon the February 1994 NBC Defense Sector study referenced in last year's report to Congress.

The August 1996 report shows a slight improvement over three years ago. Of significance is the decreased number of research and development programs, emphasizing the consolidation efforts of the new joint service initiative and improvements in overall posture of fielded equipment encouraged by Public Law 103-160.

While the sector is improving, vulnerabilities still exist. Operation Desert Storm highlighted a case in which the industrial base did its best to keep spares and repair parts available; yet, there were critical shortages in protective clothing, filters, medical supplies, and batteries for chemical defense equipment. Collective protection systems (filters in particular) continue to be the most critical subsector in the NBC defense area. Additionally, protective clothing procurement continues to receive intense scrutiny due to the possibility of industrial base shortfalls to satisfy requirements during a contingency. Also, the reluctance of pharmaceutical industries to support DoD CB defense medical programs, coupled with a lack of government vaccine production, represents a serious medical industrial base shortcoming.

These assessments indicate that the NBC defense industrial base sector is primarily supported by small- to medium-sized highly specialized companies dedicated to producing military unique products with little or no commercial utility. These companies have become

dependent on Service demands and sales for their financial survival. Selected NBC defense items (BDOs, chemical gloves, and nerve agent autoinjectors) have been designated as critical to combat operations because of low peacetime demand, high wartime use, and the fragile supporting industrial base. As a result DLA established, with OSD approval, a “War Stopper” program to sustain key industrial base capabilities, utilizing industrial preparedness funding under PE 07080110.

Recent changes in the NBC warfare threat and reduced DoD requirements are severely threatening the viability of this sector. DoD is reviewing its industrial base strategies regarding this sector. DLA and AMC, in conjunction with the Services, are developing industrial base approaches which will ensure sustainment of key or critical manufacturing processes and capabilities and ensure that the industrial continues to provide NBC defense items needed on the battlefield.

## 4.8 NBC DEFENSE LOGISTICS SUPPORT ASSESSMENT

➤ **DoD lacks a joint, integrated system to maintain asset visibility of NBC defense equipment below wholesale level, and lacks a standardized war reserve program for NBC defense equipment. Resourcing the procurement and sustainment of wartime stocks of individual protective equipment, decontamination kits, and detector kits remains the responsibility of the Services.**

**SOLUTION:** DoD established the requirement for asset visibility and reviewed existing systems and procedures, both for peacetime reporting and war time reporting. The Services and DLA are addressing the NBC defense asset visibility deficiency under the auspices of the Total Asset Visibility initiative.

*During 1997 all four Services are participating in development of the JCHEMRATES IV study which will provide a more accurate prediction of the initial issue and sustainment quantities required for each Service than previous studies. Results of this effort should be available for inclusion in next year's Annual Report to Congress. The use of this common methodology will allow the presentation of Joint Service requirements in future reports and facilitate improved joint logistics management.*

In November 1996, the JSMG completed a *Joint Service Nuclear, Biological and Chemical Defense Logistics Support Plan*. The plan outlines proposed short-, mid-, and long-term strategies to resolve and overcome many of the problems facing NBC defense equipment readiness and sustainment. The vision for the long-term is to develop a partnership of medical and non-medical NBC defense items in all Services with industry to improve the coordination and management of development, production, and stockpiling/sustaining of NBC defense equipment. The Department continues to pursue innovative strategies to maintain a responsive industrial base, especially those strategies that decrease industry reliance on DoD procurement for industrial base survival. Strategies may include tapping into to independent research and development (IR&D) conducted by universities and corporations, increasing reliance on dual-use technologies, and pursuing strategies that will encourage companies to decrease dependency on DoD requirements for their survival.

**APPENDIX 1.**  
**BREAKOUT OF SERVICE WAR REQUIREMENTS, STOCKS ON-HAND, AND  
PLANNED ACQUISITIONS**

The following tables display NBC defense equipment wartime requirements, stocks on-hand quantities, quantities on contract, and FY97 planned procurements for each of the four Services.

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**Table 4-2. Army Logistics Readiness NBC Report Data**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97 (Est. Proc)</b>	<b>COMMENTS</b>
<b>OVERGARMENTS</b>						
SUIT, CP CAMO (BDO)	8415-01-137-1700-07	4,700,000	2,914,871	0	0	End of shelf life approaching, will begin replacing with JSLIST Suit in FY97
SUIT, CP CAMO-DESERT	8415-01-327-5347/5353	2,300,000	1,562,481	0	0	Contingency only, will begin replacing with JSLIST Suit in FY97
SUITS, JSLIST	NOT AVAIL	0	0	0	260,000	
<b>OVERBOOTS/GLOVES</b>						
BLK/GRN VINYL O/BOOTS	8430-01-317-3374-85	4,380,000	2,611,916	0	175,000	Shortages supplemented by Chem Prot Footwear Covers
CP FOOTWEAR COVERS	8430-01-021-5978	0	1,948,611	0	0	Replaced by B/GVOs
CP GLOVES 7 MIL	8415-01-138-2501-04	431,242	318,248	0	0	
CP GLOVES 14 MIL	8415-01-138-2497-00	1,213,032	1,182,735	0	0	
CP GLOVES 25 MIL	8415-01-033-3517-20	5,728,224	7,359,829	0	0	
<b>CB MASKS</b>						
MASK, CB, M17A2	4240-01-143-2017-20	418,472	1,000,190	0	0	Being replaced by M40/M40A1
MASK, CB, M40/M40A1	4240-01-258-0061-63	864,324	1,026,783	141,389	47,205	
MASK, M24, AVIATOR	4240-00-776-4384	12,421	26,355	0	0	Being replaced by M45 and M49 Masks
MASK, M25A1, TANK	4240-00-994-8751-52	38,159	130,109	0	0	Being replaced by M42
MASK, M42, TANK	4240-01-258-0064-66	85,281	114,148	60	24,451	Being updated to M42A2
MASK, M43, APACHE	4240-01-208-6966-69	5,927	2,501	0	0	Being replaced by M48 Mask
<b>MISC PROTECTION</b>						
CP HELMET COVER	8415-01-111-9028	4,091,764	3,211,278	193,110	115,491	
FILTER CAN, C2A1	4240-01-361-1319	2,184,625	1,205,498	472,000	166,000	Total C2 and C2A1 Canisters
FILTER CAN, M10A1	4240-00-127-7186	147,932	165,626	0	0	
FILTER SET, M13A2	4240-00-165-5026	836,944	1,261,932	0	0	
HOOD, M5 (FOR M25A1)	4240-00-860-8987	76,318	214,011	0	0	M25 Mask being replaced by M42
HOOD, M7 (FOR M24)	4240-00-021-8695	30,822	69,776	0	0	M24 Mask being replaced by M45 and M49
HOOD, M6A2 (FOR M17)	4240-00-999-0420	836,944	970,340	0	0	M17 Mask being replaced by M40
HOOD, M40	4240-01-376-3152	2,939,330	1,349,182	562,000	0	
<b>CHEMICAL DETECTION</b>						
ALARM, CAA, M8A1	6665-01-105-5623	38,462	26,620	0	0	Will be supplemented by XM22 ACADA
CHEM AGENT MONITOR /ICAM	6665-01-199-4153	14,939	9,650	468	0	
DET KIT, M256A1	6665-01-133-4964	323,684	111,680	12,000	23,700	
DET PAPER, M8	6665-00-050-8529	1,184,459	1,027,199	0	0	
DET PAPER, M9	6665-01-049-8982	0	9,638	0	0	Replaced by new M9 Paper
DET PAPER, M9	6665-01-226-5589	1,463,137	262,953	367,826	350,000	
NBC RECON SYSTEM	6665-01-372-1303	101	113	0	0	Some used for training
NBC MARK SET, M274	9905-12-124-5955	9,518	9,848	0	0	
WATER TEST KIT, M272	6665-01-134-0885	3,552	9,430	6,954	0	

**Table 4-2. Army Logistics Readiness NBC Report Data (continued)**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97 (Est. Proc)</b>	<b>COMMENTS</b>
<b>DECONTAMINATION EQUIPMENT</b>						
DECON APPAR, M11	4230-00-720-1618	117,814	134,385	0	0	
DECON APPAR, M13	4230-01-133-4124	136,151	180,446	0	0	
DECON KIT, M258A1	4230-01-101-3984	0	404,128	0	0	Replaced by M291 decon kit
DECON KIT, M291 (20/Box)	4230-01-276-1905	113,225	26,957	50,000	44,200	Shortage supplemented by M258A1
DECON KIT, M295 (20/Box)	4230-01-357-8456	107,732	2,080	2,789	1,024	
DS2, 1 1/3 QT	6850-00-753-4827	117,814	195,966	0	0	See below
DS2, 5 GAL	6850-00-753-4870	213,165	315,242	0	0	See below
DS2, M13 CAN	4230-01-136-8888	147,285	36,350	0	0	Total DS2 stocks on hand meet requirements. No longer procuring DS2
LWT DEC SYS, M17	4230-01-303-5225	2,732	1,785	16	0	
PDDA, M12A1	4230-00-926-9488	844	1,062	0	0	
<b>COLLECTIVE PROTECTION</b>						
AIR PURIFIER, M2A2	4240-00-868-7906	10,000	11	1,963	0	
FILTER, PRECLEANER-PARTICULATE, M1A1-19	4240-01-026-3112	10,000	130	1,000	0	
FILTER SET, GAS PARTICULATE, M56	4240-01-067-5605 4240-01-369-6533	1,092	64	5,286	0	Army as item manager buys 3,000 per year to satisfy Navy requirement.
SHELTER, CO/P, M20/M20A1	4240-01-166-2254	1,945	1,033	230	0	M20A1 on Contract
<b>MEDICAL PRODUCTS</b>						
2-PAM CHLORIDE, AUT	6505-01-125-3248	1,197,437	801,348	0	0	
ATROPINE AUTOINJ	6505-00-926-9083	4,915,888	565,903	15,827	0	
CANA	6505-01-274-0951	2,240,110	382,011	206,430	320,055	
NAAK, MKI	6705-01-174-9919	2,846,601	689,116	461,525	0	Item will be replaced by NSN 6505-01-362-7427.
PYRIDOSTIGIMINE TAB	6505-01-178-7903	985,851	174,074	307,133	140,835	

**Table 4-3 Air Force Logistics Readiness NBC Report Data**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97 (EST PROC)</b>	<b>COMMENTS</b>
<b>OVERGARMENTS</b>						
AIRCREWMAN CAPE	8415-01-040-9018	154,839	158,800		2,978	
CP, UNDERCOVERALL	8415-01-040-3141	0	113,000		0	Expired shelf life; offers limited protection
CWU-66/77/P	8415-01-328-3454(S)	126,000	65,019		5,000	
SUIT, CP CAMO (BDO)	8415-01-137-1700-07	852,899	934,400		37,622	
SUIT, CP CAMO-DESERT	8415-00-324-3087	6,940	9,771		193	
<b>OVERBOOTS/GLOVES</b>						
BLK/GRN VINYL O/BOOTS	8430-01-317-3374-85	790,136	872,885		47,453	
CP FOOTWEAR COVERS	8430-01-021-5978(L)	152,581	229,508		324	
CP SOCKS	8415-01-040-3169	123,774	139,126		0	
DISP FOOTWEAR COVER	8430-00-580-1205	149,830	168,704		0	
CP GLOVES 7 MIL	8415-01-138-2501-04(S)	105,311	205,131		5,533	
CP GLOVES 14 MIL	8415-01-138-2497-00(S)	1,210,626	1,519,197		125,382	
CP GLOVES 25 MIL	8415-01-033-3517-20(S)	135,999	171,229		1,499	
GLOVE INSERTS	8415-00-782-2809 (S)	944,543	921,022		83,559	
<b>CB MASKS</b>						
MASK, AERP	8475-01-339-9782(S)	38,800	21,160		7,200	
MASK, CB, M17A2	4240-01-143-2017-20(S)	7,033	7,272		0	
MASK, MCU-2/P	4240-01-175-3443	67,674	71,910		3,160	
MASK, MCU-2A/P	4240-01-284-3615/17	26,977	44,863		1,908	
MASK, MCU-2A/P(WR) USAF	4240-01-327-3299-301	227,155	249,875		6,024	
<b>MISC PROTECTION</b>						
FILTER CAN, C2/C2A1	4240-01-119-2315	1,120,130	1,455,690		34,069	
FILTER, GP	4240-01-161-3110	250	250		0	
FILTER SET, M13A2	4240-00-165-5026	219,907	207,000		783	
HOOD, FOR MCU-2A/P	4240-01-189-9423	1,437,361	1,796,664		31,079	
HOOD, M6A2 (FOR M17)	4240-00-999-0420	61,054	95,542		0	
MICS (COOL SYSTEM)	4240-01-298-4140YR	323	234		86	
<b>CHEMICAL DETECTION EQUIPMENT</b>						
ALARM, CAA, M8A1	6665-01-105-5623	351	237		127	
CHEM AGENT MONITOR/ICAM	6665-01-199-4153	810	584		228	
CWDD, AN/KAS-1	5855-01-147-4362	6	0		0	
DET KIT, M256A1	6665-01-133-4964	6,130	4,583		508	
DET PAPER, M8	6665-00-050-8529	403,648	740,615		10,650	
DET PAPER, M9	6665-01-049-8982	84,777	84,515		0	
DET PAPER, M9	6665-01-226-5589	276,104	276,551		73,768	
NBC MARK SET, M274	9905-12-124-5955	386	402		19	
WATER TEST KIT, M272	6665-01-134-0885	243	251		2	

**Table 4-3 Air Force Logistics Readiness NBC Report Data (continued)**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97 (EST PROC)</b>	<b>COMMENTS</b>
<b>DECONTAMINATION EQUIPMENT</b>						
A/E32U-8 DECON SYS	4230-01-153-8660	131	125		0	
CALCIUM HYPOCHLORITE	6810-00-255-0471	237	237		11	
DECON KIT, M258A1	4230-01-101-3984	503,649	483,756		24,875	
DECON KIT, M291	4230-01-276-1905	265,230	159,252		65,632	
DRY SORBENT POWDER	4230-01-262-0484	21,438	21,500		62	
L/WT DEC SYS, M17	4230-01-303-5225	91	78		22	
SODIUM HYPOCHLORITE	6810-00-598-7316	795	915		72	
<b>COLLECTIVE PROTECTION</b>						
KMU-450 SHEL MOD KIT	4240-01-044-7659	19	20		0	
<b>MEDICAL PRODUCTS</b>						
2-PAM CHLORIDE, AUT	6505-01-125-3248	841,793	862,320		168,358	
ATROPINE AUTOINJ	6505-00-926-9083	849,421	862,970		169,884	
CANA	6505-01-274-0951	268,735	237,906		134,367	
NAAK, MKI	6705-01-174-9919	0	0		0	
PYRIDOTIGIMINE TAB	6505-01-178-7903	28,183	30,335		5,636	

**Table 4-4 Navy Logistics Readiness NBC Report Data**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97 (Est. Proc)</b>	<b>COMMENTS</b>
<b>OVERGARMENT</b>						
IMPREG UNDERGARMENT	8415-00-782-3242	246	214	0	0	
SUIT, CP CAMO (BDO)	8415-01-137-1700-07	790	612	0	0	Will be replaced by JSLIST
SUIT, CP, OG MK3	8415-01-214-8289-92	253,111	266,072	20,000	1,582	Will be replaced by JSLIST
<b>OVERBOOTS/GLOVES</b>						
BLK/GRN VINYL O/BOOTS	8430-01-317-3374-85	102,177	77,467	0	1,400	
CP FOOTWEAR COVERS	8430-01-021-5978	151,815	197,898	0	0	
CP GLOVES 25 MIL	8415-01-033-3517-20	253,856	294,160	0	1,400	
CPO FOOT COVERS	8430-01-118-8172	717	160	0	0	
<b>CB MASKS</b>						
HOOD, MCU-2/P	4240-01-189-9423	559	523	0	0	
MASK, MCU-2A/P	4240-01-284-3615/17	7,129	6,196	0	0	
MASK, MCU-2A/P (WR) USN	4240-01-327-4148-50	70,342	103,069	5,923	742	
MASK, MCU-2/P	4240-01-173-3443	92,245	101,884	0	0	
<b>MISC PROTECTION</b>						
FILTER CAN, C2/C2A1	4240-01-119-2315	410,129	434,207	0	1,484	
<b>CHEMICAL DETECTION</b>						
ALARM, CAA, M8A1	6665-01-105-5623	108	46	0	0	
CAPDS	6665-01-294-2556	305	300	0	0	
CHEM AGENT MONITOR	6665-01-199-4153	57	260	0	0	
CWDD, AN/KAS-1	5855-01-147-4362	830	917	0	0	
DET KIT, M256A1	6665-01-133-4964	9,181	9,272	0	0	
DET PAPER, M8	6665-00-050-8529	60,559	17,018	0	1,540	
DET PAPER, M9	6665-01-049-8982	17,619	19,662		0	
DET PAPER, M9	6665-01-226-5589	11,451	27,085	0	155	
TUBE PHOSGENE	6665-01-010-7965	3,256	2,807	0	0	
IPDS	NOT AVAIL	305		228		Will replace CAPDS
M21 RSCAAL	6665-01-334-6637	42	0	0	0	New requirement funding pending.
NBC MARK SET, M274	9905-12-124-5955	98	39	0	0	
WATER TEST KIT, M272	6665-01-134-0885	190	80	0	0	

**Table 4-4 Navy Logistics Readiness NBC Report Data (continued)**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97 (Est. Proc)</b>	<b>COMMENTS</b>
<b>DECONTAMINATION EQUIPMENT</b>						
CALCIUM HYPOCHLORITE	6810-00-255-0471	33,188	32,149	0	0	
DECON APPAR, M11	4230-00-720-1618	528	203	0	0	
DECON KIT, M258A1	4230-01-101-3984	69,486	74,035	0	0	
DECON KIT, M291	4230-01-276-1905	131,364	127,628	0	0	
M-17 DECON APPAR	4230-01-346-3122	33	2	0	0	New requirement. Plan to buy 28 in FY98.
<b>COLLECTIVE PROTECTION</b>						
PCPS	4240-01-105-5521	627	0	0	0	New requirement. Investigating alternative systems.
SHELTER, CO/P, M20/M20A1	4240-01-166-2254	298	111	0	0	
<b>MEDICAL PRODUCTS</b>						
2-PAM CHLORIDE, AUT	6505-01-125-3248	367,876	423,957	0	0	
ATROPINE AUTOINJ	6505-00-926-9083	496,598	642,844	0	0	
CANA	6505-01-274-0951	2,635	2,318	0	0	
PYRIDOSTIGIMINE TAB	6505-01-178-7903	126,607	368,937	0	0	
TETRACYCLINE	NOT AVAIL	28,304	508,220	0	0	

**Table 4-5 Marine Corps Logistics Readiness NBC Report Data**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97</b>	<b>COMMENTS</b>
<b>OVERGARMENTS</b>						
SUIT, CP CAMO (BDO)	8415-01-137-1700-07	0	221,142	0	0	Replaced by JSLIST in FY97
CP, UNDERCOVERALL	8415-01-040-3141	0	350	0	0	Replaced by JSLIST in FY97
SUIT, CP, SARATOGA	8415-01-333-7573-76	1,197,790	641,675	0	0	Replaced by JSLIST in FY 97
<b>OVERBOOTS/GLOVES</b>						
BLK/GRN VINYL O/BOOTS	8430-01-317-3374-85	1,514,373	154,241	0	0	
CP FOOTWEAR COVERS	8430-01-021-5978(L)	277,000	244,873	0	0	Being Replaced by BVO/GVO
CP GLOVES 25 MIL	8415-01-033-3517-20	2,537,009	657,016	0	0	
<b>CB MASKS</b>						
MASK, CB, M17A2	4240-01-143-2017-20	*	13,719	0	0	Replaced by M40
MASK, CB, M40	4240-01-258-0061-63	*	145,038	0	0	
MASK, M24, AVIATOR	4240-00-776-4384(M)	*	2,766	0	0	Replaced by MCU-2/AP
MASK, M25A1, TANK	4240-00-994-8751-52	*	1,034	0	0	Replaced by M42
MASK, M42, TANK	4240-01-258-0064-66	*	6,227	0	0	
MASK, MCU-2/P	4240-01-175-3443	*	0	0	0	
<b>TOTAL MASKS</b>		<b>277,000*</b>	<b>168,784</b>			
MASK COMM ADAPTOR	5996-01-377-9695	50,000	20,000	0	10,000	
<b>MISC PROTECTION</b>						
FILTER CAN, C2	4240-01-119-2315	322,461	314,646	0	0	
FILTER CAN, M10A1	4240-00-127-7186	10,250	3,443	0	0	M24 and M25 masks being replaced
FILTER SET, M13A2	4240-00-165-5026	4,568	29,803	0	0	
HOOD, FOR MCU-2A/P	4240-01-189-9423		87	0	0	
HOOD, M5 (FOR M25)	4240-00-860-8987	2,399	2,399	0	0	Masks being replaced
HOOD, M6A2 (FOR M17)	4240-00-999-0420	32,353	32,353	0	0	Masks being replaced
HOOD, M7 (FOR M24)	4240-00-021-8699	323	323	0	0	Masks being replaced
<b>CHEMICAL DETECTION</b>						
ALARM, CAA, M8A1	6665-01-105-5623	10	30	0	0	
CHEM AGENT MONITOR	6665-01-199-4153	2,700	2,700	0	0	
DET KIT, M256A1	6665-01-133-4964	33,703	3,498	0	0	
DET PAPER, M8	6665-00-050-8529	419,167	7,677	0	0	
DET PAPER, M9	6665-01-049-8982	30,524	9,979	0	0	
DET PAPER, M9	6665-01-226-5589	396,516	28,249	0	0	
ICADS	6665-01-340-1693	28,557	10,000	0	0	
M21 RSCAAL	6665-01-334-6637	197	125	0	0	
NBC MARK SET, M274	9905-12-124-5955	1,704	112	0	0	
NBC RECON SYSTEM	6665-01-323-3582	10	10	0	0	Will be Replaced with Lt/Wt Recon Sys
WATER TEST KIT, M272	6665-01-134-0885	413	129	0	0	

\* No individual mask requirement breakout available. A total of 277,000 of the six different masks are currently required.

**Table 4-5 Marine Corps Logistics Readiness NBC Report Data (continued)**

<b>NOMENCLATURE</b>	<b>NSN</b>	<b>WAR REQ</b>	<b>STOCKS ON HAND</b>	<b>ON CONTRACT</b>	<b>FY 97</b>	<b>COMMENTS</b>
<b>DECONTAMINATION EQUIPMENT</b>						
CALCIUM HYPOCHLORITE	6810-00-255-0471	512	109	0	0	
DECON APPAR, M11	4230-00-720-1618	496,201	19,159	0	0	Requirement is excessive, being recalculated
DECON APPAR, M13	4230-01-133-4124	1,697	11,663	0	0	
DECON APP M17	4230-01-303-5225	722	810	0	0	
DECON KIT, M258A1	4230-01-101-3984	92,256	95,214	0	0	Replaced by M291
DECON KIT, M291	4230-01-276-1905	439,643	120,860	0	0	
DS2, 1 1/3 QT	6850-00-753-4827	992,701	5,416	0	0	Requirement is excessive, being recalculated
DS2, 5 GAL	6850-00-753-4870	1,817	3,229	0	0	Requirement is excessive, being recalculated
PDDA, M12A1	4230-00-926-9488	281	457	0	0	
STB	6850-00-297-6653	1,631	3,142	0	0	
<b>COLLECTIVE PROTECTION</b>						
PCPS	4240-01-346-2564	223	223	0	0	
<b>MEDICAL PRODUCTS</b>						
2-PAM CHLORIDE, AUT	6505-01-125-3248	205,344	205,344	0	0	
ATROPINE AUTOINJ	6505-00-926-9083	291,216	291,216	0	0	
CANA	6505-01-274-0951	93,336	93,336	0	0	
PYRIDOSTIGIMINE TAB	6505-01-178-7903	93,336	93,336	0	0	

**APPENDIX 2**  
**FIELDDED NBC DEFENSE ITEMS - ISSUES AND CONCERNS**

NBC defense items are generally used in combination to form a system or subsystem for a particular function. Therefore, this report will address items used as a system. These systems are categorized into five functional areas.

- Contamination Avoidance
- Individual Protection
- Collective Protection
- Decontamination
- Medical

**1. Contamination Avoidance**

Contamination Avoidance programs generally include those programs that conduct NBC agent reconnaissance, detection, and identification. This area represents approximately half of the annual DoD NBC defense RDT&E budget. Due to recent type-classification of several modernization programs, this area has a number of moderate risk and high risk programs. As procurements of the Improved Chemical Agent Monitor (ICAM), M21 RSCAAL, and the M93A1 Fox NBC Reconnaissance System continue, this area should improve. This assumes a constant level of funds with respect to past profiles of DoD funding.

The M8A1 Chemical Agent Alarm moved to the high risk category, due to a backlog of orders, the age of the systems, and the M43A1 detector no longer being in production. Deliveries of the new XM-22 Automatic Chemical Agent Alarm Detector (ACADA) (planned production to begin in FY97), supplemented by depot maintenance of older M8A1 alarms, should eliminate the shortages in this critical area over the next five years. The M93A1 NBCRS moved to the low risk category and the ICAM/CAM moved to the moderate risk category based on fill compared to requirement. The fielding of the NDI M31 Biological Integrated Detection System (BIDS) significantly improves the biological detection capabilities of the Army.

The M256A1 Detection Kit remains a high risk due to shelf life status and inventory shortages. Other manual detection materiel, to include M8 and M9 paper, are rated as a low risk.

**2. Individual Protection**

Currently fielded NBC defense equipment items were primarily designed for use in the European environment against a Soviet threat. Equipment in this functional area provides protection against all known CB threat agents. Past service unique requirements have led to Service-specific procurements and some duplication in capability in this functional area. As a consequence, this has resulted in procurements of six different chemical protective suits and six different masks. In the recent past, this has caused difficulties in meeting Service needs and

exacerbated logistics planning. In FY97, the introduction of the JSLIST protective suits should begin to resolve much of these past difficulties.

The Battle Dress Overgarment (BDO) continues to pose a moderate risk as this item is reaching its maximum extended shelf life limit (14 years), and the Services plan no new production. The Joint Services Lightweight Integrated Suit Technology (JSLIST) Advanced Battle Dress Overgarment (ABDO) and Advanced Chemical Protective Garment (ACPG), respectively, will begin procurement in FY97.

The Services continue modernizing their chemical protective mask inventories. Different versions of the protective mask were developed to meet the requirements of different military occupational specialties (*e.g.*, air crew, tank crew, etc.). For the Army and Marine Corps, the M40 and M42 series masks are replacing the M17 and M25 series masks. The M43 series masks are used in Army Apache equipped aviation units and will be replaced by the M48 mask. These newer masks provide increased protection, improved fit and comfort, and compatibility with most of these Services' weapons systems' optics and sights. Remaining Army aviation units are still equipped with the old M24 mask, which will be obsoleted upon replacement by the M45 mask. The M40 and M42 masks are assessed as low risk; however funding constraints have delayed total replacement of the old masks. The M43 series mask is assessed as moderate risk, but will improve to low risk upon receipt of quantities on contract.

The MCU-2A/P is designed to meet the needs of the Air Force ground crews and Navy shipboard and shore-based support missions.

### **Battle Dress Overgarment (BDO)**

There are no companies currently manufacturing the BDO. The Defense Logistics Agency's largest customer, the Army, has 2.9 million suits on hand in war reserves to sustain its requirements until 1999. The Services are beginning to buy the JSLIST suits, as a replacement for the BDO and other chemical protective suits, beginning in FY97. Related to the BDO, Duro, Inc. is the sole source for the inner layer of the charcoal slurry impregnated fabric (a key capability) used within the BDO suit. DLA presently has an industrial base maintenance contract (IBMC) with Duro to maintain this capability until production of the JSLIST suit can ramp up. This IBMC contract was renewed until September 1997.

### **Chemical Protective (CP) Gloves**

The CP glove is made out of butyl rubber. Butyl rubber is the most cost effective material capable of withstanding all chemical agents with desirable mechanical properties over a wide range of environmental conditions. There are two current producers of the CP gloves—Siebe North, Inc., Charleston, SC, and Guardian Corp., Willard, Ohio. The Services have adequate stocks on-hand for contingency use. Recent DoD surveillance tests have validated the protective qualities of the existing stocks. The health of the Services on-hand inventories has allowed DLA to pursue an IBMC with both current manufacturers to sustain the industrial base

with “War Stopper” funding. The JSLIST program will replace the current glove with an improved glove.

### **3. Collective Protection**

There are two general categories of collective protection: stand-alone shelters and integrated systems. Integrated collective protection equipment is component equipment designed to provide protection against CB agents through the use of filtered air under positive pressure to a variety of facilities, vans, vehicles, aircraft and ships. Collective protection programs continue to be an unsupported program sector. The increased emphasis on individual protection and contamination avoidance programs has resulted in a corresponding decrease in this area. Until the various military users establish a requirement for this capability, this sector will not show signs of improving in the near future. The entire sector is assessed as high risk. Filters for these integrated collective protection systems are in critical supply due to low peacetime demand and low production quantities.

The M51 shelter is being replaced by the new Chemical and Biological Protective Shelter (CBPS), with the M20A1 shelter to be used as an interim replacement; however, the M20 series shelter is assessed as a high risk system due to currently low inventory levels. Continued difficulties in obtaining a strong industry leader in this field compound these problems.

### **4. Decontamination**

Current decontaminants are highly effective against all CB agents, but most present environmental hazards and are manpower intensive. The services are attempting to find environmentally safe decontaminants which are less labor intensive.

The M258A1 Skin Decontamination Kit is the primary item used in personnel decontamination. The replacements for the M258A1 are the M291 Skin Decontamination Kit and the M295 Equipment Decontamination Kit. All three kits are effective against nerve and blister agents, with the M291 and M295 kits relying on a dry resin technology.

The M295 Decontamination Kit is not currently in production. The sole supplier of the resin, Rohm & Haas, Co., sold its mixing and packaging equipment used to manufacture the M291 Kit. They will continue to produce components for the key component, XE-555 resin, after completion of the current contract (scheduled for completion in 1997). Pine Bluff Arsenal, Arkansas, set up a production line and began to manufacture the M291 Kit in October 1996. Rohm & Haas continues to provide the XE-555 resin components. True Tech is blending the components to make the XE-555 resin. Alternatives to produce a different kit that does not use the XE-555 resin are being studied. There are a number of options being explored to retain this “at risk” technology. Although the M291 and M295 would be assessed as high risk, the availability of M258A1 decontamination kits still in the inventory helps steady overall readiness stocks. True Tech will produce the M295 kits in FY97/98.

In the Army, the M12A1 Power-Driven Decontamination Apparatus (PDDA) is the primary piece of equipment in chemical companies used to decontaminate equipment and terrain. The M12A1 is assessed as moderate risk. Although the M12A1 on-hand stocks would result in an assessment as low risk, the maintenance requirements due to the age of this item limits full utilization as a decontamination device. The M17 series Lightweight Decontamination System (LDS), is used to provide operational equipment decontamination in many battalion-level units and dual-purpose (smoke/decontamination) chemical companies. It is assessed as moderate risk due to a low inventory and high demand. This risk should drop as more systems are produced. Basic soldier skills for decontamination of vehicle and crew-served weapons are accomplished using the Portable Decontamination Apparatus, M11, and Decontamination Apparatus, Portable, M13. These are assessed as posing a low risk, based on improved reported inventory for these two items.

## **5. Medical**

Medical NBC defense items are used to counteract the effects of exposure to chemical or biological agents through pre-treatments, vaccines, or post-treatments. Nerve Agent Antidote Kits (NAAK), Convulsant Antidote Nerve Agent (CANA), and Nerve Agent Preventive Pyridostigmine (NAPP) tablets appear to be at high risk due to the Army's Division Ready Brigade Set initiative (see para 4.5) which dramatically reduced the quantities of individual issue items kept on hand at unit level. Active duty Army units are assumed to have their SKO components on hand, as required by Army regulations. Changes in previous inventory figures and FY96 figures are based on year-end reconciliation of stocks at depots, disposal of stocks located at Meridian Medical Technologies (formerly Survival Technology, Incorporated (STI)) that failed extension approval by the Food and Drug Administration (FDA), and increase in stocks due-in to the Army owned account as a result of year-end buys.

The sole supplier to DoD for nerve agent antidote kits is Meridian Medical Technologies whose manufacturing plant is located in St. Louis, Missouri. Although Meridian is a U.S. company, both the atropine and pralidoxime chloride drugs used to fill autoinjectors are obtained from German suppliers. Currently, there are no domestic sources for these drugs.

The U.S. Army Medical Materiel Development Agency (USAMMDA) added Meridian to their New Drug Application (NDA) for producing the Convulsant Antidote, Nerve Agent (CANA) autoinjector. The Army continues to requisition CANA from the Defense Personnel Support Center to replenish and maintain stocks, and to support the industrial base. Meridian's nerve agent antidote production line is being maintained with an industrial base maintenance contract (IBMC). USAMMDA's centralized management initiative for medical chemical defense materiel should also aid in maintaining the health of Meridian's line. The shelf-life extension for nerve agent antidote kits is part of this initiative and will help keep Meridian viable.

Medical research continues to explore medical countermeasures to deter, constrain, and defeat the use of biological warfare agents against U.S. forces. The Medical Biological Defense Research Program (MBDRP) was established to develop medical countermeasures against validated biological agent threats. These medical products transition from research programs to

the Joint Program Office for Biological Defense (JPO-BD) for acquisition management. JPO-BD is currently developing a request for proposal for a prime systems integration contract for the development, FDA licensure, and production of vaccines.

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