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To: Joint Chiefs of Staff, J-8, Joint Requirements Office  
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Subj: JOINT CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR  
DEFENSE (CBRND) FUTURE CAPABILITY CONFERENCE

Ref: (a) J-8A 00040-04  
(b) CG MCCDC ltr to JRO dtd 1 Mar 04

Encl: (1) USMC CBRND Prioritized Capability Gaps

1. Per the references, our top ten prioritized capability gaps  
are provided in the enclosure.

2. Our point of contact is CWO4 Jeffrey Curry, (703) 784-6210,  
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A handwritten signature in black ink that reads "L. A. Blasiol".

L. A. BLASIOL  
By direction

**USMC CBRND Prioritized Capability Gaps**

12 Apr 2004

The following NBC capability gaps and recommended actions were identified by the USMC NBC Operational Advisory Group. These gaps are numbered in the order that reflects the USMC's priorities.

No.	Gap	Discussion	Action
1	Biological Detection	The Marine Corps lacks an employable capability for Biological detection. The MAGTF (II MEF, III MEF, and MARFORRES) currently lacks any capability to detect biological agents. Prior to OIF, Hand Held Assays (HHAs) were purchased and distributed to I MEF. This was a one-time buy and the Assays have since expired. A Biological Detection System (BDS) was fielded to I MEF in response to an OIF Urgent UNS. Forty BDS (\$539K) were fielded. The BDS uses a Dry Filter Unit (DFU) and the HHA to detect and ID biological agents. All HHAs were rendered useless before they were delivered to I MEF. The DFU status is currently unknown.	MCCDC/MRD will generate a message to MARFORPAC IOT determine the BDS status and the Concept of Employment. Based on the MARFORPAC response, MCCDC will revise the BDS COE and determine how many systems are required to support the entire operating force.
2	Robotic Detection	The Marine Corps lacks the ability to detect CBRN agents in confined/high risk spaces. A robotic detection capability will allow the operating force to conduct NBC recon of spaces/areas that may not be safe for NBC recon team members.	MARFORPAC is generating an UNS (immediate need to support OIF II).
3	Low-Level Chemical Detection	For any given chemical agent, the terms "operationally relevant performance decrements" and "potential delayed adverse health effects" represent different points along the dose-response continuum - not separate problems. Our current chemical detectors were developed to detect at levels associated with "operationally relevant performance decrements". The	MCCDC/MRD

		USMC does not have the ability to detect at the low-levels associated with "potential delayed adverse health effects". The threat of exposure to low-level agents comes from 1) downwind or on the periphery of an actual CWA attack and/or CWA release, 2) entry into an area after a CWA attack, and 3) exposure to agent from partially decontaminated materiel, supplies, or surfaces.	
4	Biological Sampling and Evacuation Kit	The Marine Corps lacks: - The ability to collect samples of biological and/or unknown agents. - The ability to preserve the samples for evacuation to a confirmatory lab.	MCCDC/MRD
5	Hydration in a Contaminated Area	The MAGTF requires the ability to keep personnel adequately hydrated while working in a contaminated area.	MCCDC/MRD will review the JCRS program to ensure that it will provide an adequate materiel solution.
6	Standoff NBC Detection	The MAGTF requires a hand-held standoff detector. CBIRF currently employs a standoff chemical agent detector that may provide an adequate materiel solution. Biological and Radiological detectors are also desired (depends on technology).	MCCDC/MRD
7	Aircraft Decontaminant	There are currently no standard decontaminants approved for use on Marine Corps aircraft.	The JSFDS program should provide a decontaminant.
8	Decontamination Apparatus	The MAGTF currently employs the M17 Lightweight Decontamination System for both operational and thorough decon ops. The M17 is not reliable, and it does not produce sufficient water volume and pressure. Some NBC personnel	MCCDC/MRD will continue to participate in the Joint programs to ensure that decontamination

		<p>consider commercially available pressure washers as a substantial improvement over the M17. The MAGTF requires a decon apparatus that is capable of supporting Expeditionary Maneuver Warfare (EMW). The system must be capable of operating from a mobile ground platform and supporting operational, and fixed site decontamination operations. Ideally, the same system would be used for through/clearance decontamination operations.</p>	<p>systems offer an acceptable materiel solution.</p> <p>MCCDC/MRD will work with MARCORSSYSCOM PM NBC to determine if there is a near term solution available.</p> <p>E.g., replace M17 at Bn level with pressure washer. M17s and pressure washers go to MSC decon sections.</p>
9	Individual Radiation Dosimeter	<p>The current dosimeters (IM-143 and DT-236) do not support EMW. The IM-143s provide false readings when dropped or jarred and require a separate device to charge the dosimeter. The DT-236 is not self-reading and has a 24 hour delay from the time of exposure to the time an accurate reading can be obtained. The MAGTF requires an accurate dosimeter for squad/section and NBC team use (IM-143 replacement). The DT-236 will be retained if required for medical surveillance.</p>	MCCDC/MRD
10	Radiological Detection (DU)	<p>The MAGTF does not have the ability to detect DU. Ammunition and damaged armor containing DU are a hazard to the MAGTF.</p>	MCCDC/MRD
11	Chemical Agent Protective Equipment Covers	<p>A large quantity of equipment is staged on APODS/SPODS and other fixed sites during combat operations. This equipment is highly vulnerable to a chemical</p>	MCCDC/MRD

		agent attack. The MAGTF requires a disposable Chemical Agent Protective Equipment Cover capable of providing a minimum of 2 hours breakthrough protection. The final material solution may be as simple as commercially available plastic sheets or very large trash bags (dependent upon testing).	
12	Chemical Detection (TIC)	The MAGTF does not have the ability to detect common threat agents associated with Toxic Industrial Chemical agents (TICs).	MCCDC/MRD
13	Chemical Detector Paper	The MAGTF requires a detector paper with the detection capabilities of M-8 paper and the self-adhesive capability of M-9 paper. One of the most effective means of detecting chemical agents is by pre-positioning Chemical Detector Paper on the various surfaces of concern. Pre-positioned chemical detector paper, provides commanders the ability to rapidly determine the limits of contamination. The Marine Corps currently possesses both M-8 and M-9 Chemical Detector Paper. The only M-8 paper currently rated in the Marine Corps is contained in the M256A1 Chemical Detector Kit that is not fielded in sufficient quantity to support area surveillance. M-9 paper does not identify the agent, is not cost effective due to its short shelf life, and is not fielded in sufficient quantity to employ for area surveillance.	MCCDC/MRD
14	Automated NBCD Operation Planning Tool	NBC SMEs must be able to advise their commanders/staff on all aspects associated with NBCD Operations. Numerous NBC publications provide the source	MCCDC/MRD

		data needed to support the SMEs when planning NBC operations and/or advising on the effects on other operations. The source data is so detailed, voluminous, and spread out that even the most skilled NBC SME cannot adequately plan for NBCD operations.	
15	Automated ORM Guide	NBC SMEs must be able to rapidly interpret data and advise the commander on varying levels of risk. Current doctrine provides worst-case (or no) solutions to NBC operational problems.	MCCDC/MRD
16	NBCD Capability Sets	The MAGTF does not have the ancillary items, expendable supplies, or materials required to setup and sustain NBC decon operations. Capability sets must be created to support each type of decon operation conducted by the Major Subordinate Command NBC decon teams. Sets will be standardized and stored in the NBC Centralized Storage Facility (CSF).	MCCDC/MRD
17	CBRN Battle Management	The MAGTF currently uses the Joint Warning Reporting Network (JWARN) to model/predict NBC hazards. Planned improvements to the JWARN (including JEM and JOEF) program do not answer either our immediate or future battle management needs. The operating force needs to be able to move info from JWARN to C2PC, this capability exists now. It is not clear if JWARN alone will provide the NBC Centers with the ability to communicate directly with other NBC Centers. Additionally, the NBC Centers must be able to communicate with their NBC Teams. The NBC Center has not been included in the design of our current and future command posts.	MCCDC/MRD will continue to participate in the Joint programs to ensure that battle management systems offer an acceptable materiel solution.  MCCDC/MRD has formally asked MARCORSYSCOM to field the C2PC Injector, which will allow JWARN and C2PC integration.

			<p>MCCDC/MRD must develop a MAGTF CBRN Battle Management COE. The COE will clearly outline how the NBC Center will operate and its relationship with the NBC teams (to include all C2 and applicable Joint CBRN Programs). The COE will be staffed for approval and the final product will be reflected in MCWP 3-37.</p>
18	MOPP Drop	<p>MCWP 3-37.3 provides the TTPs used by the MAGTF for conducting Detailed Troop Decontamination (DTD) and MOPP Exchange. These TTPs were developed to support the Army's warfighting concepts and structure, and do not support EMW. Both DTD and MOPP Exchange take to long, are logistically intense, and do not allow the application of Operational Risk Management (ORM). The MAGTF requires an alternative method (MOPP Drop) that will allow commanders to rapidly get personnel out of their contaminated NBC Personal Protective Equipment. MOPP drop will replace DTD and nearly eliminate the need for conducting MOPP Exchange. The most likely MOPP Drop method is based on rapidly cutting down the back of</p>	<p>MCCDC/MRD</p>

		an individual's overgarment so they can step out of it. This method has the potential to reduce the time required to undress a company from hours to minutes.	
19	Radiological Detection (Alpha)	The MAGTF possesses insufficient Alpha radiation detection devices. The current inventory is antiquated and needs replaced.	MCCDC/MRD: The COE needs to be revised to determine how many detectors are required.
20	Radiological Detection (TIR)	The MAGTF does not have the ability to detect common threat agents associated with Toxic Industrial Radiological agents (TIRs).	MCCDC/MRD
21	Contaminated Personnel and Vehicle Tracking System	The MAGTF needs an automated system that will document, mark, and track the location of contaminated personnel, vehicles, and equipment. Decon operations conducted in support of EMW will reduce contamination to a low-level that is considered operationally safe. These operations will not reduce contamination to a level that prevents potential delayed adverse health effects to exposed personnel. Personnel who have been exposed to NBC warfare agents must be identified for future medical assessment / treatment. Marking vehicles and equipment that have been exposed to NBC warfare agents must be accomplished to prevent low-level agent exposure and support retrograde / Clearance Decon Operations.	MCCDC/MRD
22	TIC/TIR Personal Protection Equipment (PPE)	The MAGTF does not have the PPE required to support TIR and TIC detection operations.	MCCDC/MRD

23	Chemical Remote Detection	<p>Our ability to resume operations on a fixed site (Port/Airfield) following a chemical attack is directly dependant upon our ability to rapidly determine what, if any, areas have been contaminated. The MAGTF requires a chemical agent detector that can automatically alert the JWARN of the presence of an operationally significant level of chemical agent in the immediate area. The detector does not need to identify or quantify the agent.</p>	MCCDC/MRD
24	Personal Equipment Decontamination (PED)	<p>The TTPs currently outlined in MCWP 3-37.3 require teams of personnel to manually decon personal equipment (Individual weapons, 782 gear, masks etc.) using buckets, trashcans, and scrub brushes. Personnel must be rotated frequently resulting in the need for a large number of personnel to sustain the operation. This large number of personnel further complicates the decon operations as these personnel must go through decontamination themselves. Disposing of the equipment is not an option due to the cost associated with replacing the equipment, the availability of replacement equipment, and the increase logistical burden created by stocking items that are generally considered a one-time issue item. The MAGTF requires a PED system that supports EMW. The system will be employed in support of operational decon (MOPP Drop) and must eliminate the need for a team of Marines doing manual scrubbing. The PED System should reduce the footprint currently</p>	MCCDC/MRD

		required to support PED.	
25	Decontamination Vacuum	The current thorough/clearance radiological decontamination procedures do not adequately support the decontamination of vehicle/aircraft interior spaces. The most effective means of removing radioactive contamination from interior spaces is by using a vacuum cleaner equipped with a HEPA (or similar) filter capable of trapping the contamination.	MCCDC/MRD
26	Radiological Protective Ensemble (RPE)	The current NBC PPE is designed primarily to protect the wearer from field concentrations of chemical agents. This equipment is not well suited for conducting radiological recon/surveillance, radiological decontamination operations, and/or other operations where dry/dusty particles are the contaminant. The MAGTF requires an RPE set that is designed specifically for this purpose. The RPE set would be used by NBC teams when conducting NBC unique operations.	MCCDC/MRD
27	Chemical Agent Resistant Coating (CARC)	There are several deficiencies related to the MAGTF's current use of CARC. - The Ground Support Equipment (GSE) used in combat by the MAWs has not been painted with CARC. - Aircraft is not CARC painted. At a minimum, the current paint (s) must be evaluated for its ability to prevent agent penetration and decontaminability (Agent Fate). - Indications are that the CARC currently used on tactical vehicles will not withstand the application of DS2 during decon operations. - Not all equipment used by	MCCDC/MRD

		<p>Divisions and FSSGs is painted with CARC.</p> <p>- One or more variations of CARC may currently be on vehicles. The type and duration of protection provided, ability to decon, and other factors that affect our ability to determine the actions necessary following a chemical attack are not know/available.</p> <p>The MAGTF needs a CARC standard for all major end items used in support of combat operations. This will reduce the need for decontamination and time needed to reconstitute the force.</p>	
28	Other Personnel Decontamination	<p>Our current doctrinal personnel decon procedures were designed for either well trained military personnel and casualties who are wearing NBC PPE. These procedures are not applicable for DoD civilians, dependants, support contractors, foreign nationals, POWs, etc., who are not equipped with NBC PPE. We need to establish/validate procedures to decontaminate unprotected personnel.</p>	<p>MMCDC/Doctrine will:</p> <ol style="list-style-type: none"> <li>1. Formally identify this to the J-8, JRO for appropriate Jt &amp; Multi-Service publication revision.</li> <li>2. Coordinate with PP&amp;O and develop interim TTPs pending a revision to MCWP 3-37.3.</li> </ol>
29	Collective Protection	<p>The current collective protection system is not suited for use in the MAGTF. We move too fast, the system is too large to haul, does not come as a complete integrated package, and most importantly, its configuration and TTPs make its use counterproductive to use in tactical operations. Furthermore, collective protection for C2 use is complicated due to the fact that most commanders are fabricating and modifying their own unique shelters for C2 use; therefore,</p>	<p>MCCDC/MRD will continue to participate in the Jt programs to ensure that future shelter and ECU systems offer NBC protection.</p>

		<p>they can't operate from ICPS. As long as Collective Protection remains an additional component to our existing shelters, it will continue to be more of a burden than value added. The ideal vision, which is currently being pursued in the Joint CBD program, was that ALL fielded shelters would have integrated Collective Protection capabilities without modification, and that all ECUs would be NBC capable.</p>	
30	<p>Chemical Protective Overgarment (CPOG) Cutter</p>	<p>The current casualty decon procedures call for the use of bandage scissors to remove the CPOG and/or clothing from contaminated casualties. This is a time consuming task that greatly reduces throughput on the casualty decon site. Depending upon the condition of the casualty, the time required to remove CPOGs may mean the difference between life and death. The MAGTF requires a CPOG Cutter that can be used to rapidly cut the CPOG for removal.</p>	<p>MCCDC/MRD</p>