

MOPP Decision Matrix

By LTC Don W. Killgore

Prior to the 3d Infantry Division's Warfighter exercise, there was no formal decision "tool" which addressed the threat and considerations for MOPP changes. The Division Chemical Section decided to develop a one-page MOPP decision matrix.

The desired result was a matrix that could be reduced in size, acetated, and then carried and used by commanders and chemical staff personnel. The design of the matrix card also allowed us to place additional MOPP information on the reverse side of the card.

After discussion and coordination with staff elements, the following six criteria were agreed on as the priority NBC intelligence requirements:

- Have either persistent or nonpersistent chemical agents been used in theater, in corps, or against a division (does not have to be 3ID) or not used?
- Have chemical agents been used against NATO airfields, maneuver units, terrain (for example, a chokepoint), as a barrier, lines of communication, C² elements, units or facilities in a corps support area, units or facilities in a division support area (does not have to be 3ID)?
- Are there chemical weapon-capable missiles at Front, at Army, or in Range?

Is the threat probability of operational success high or low? As the threat fails, the probability of the use of chemical weapons increases. The decision to use chemical weapons is an operation decision.

• Have chemical weapons been verified with threat forces at the guns? This must be verified intelligence.

• Has intelligence verified that artillery is massed and in range of the division, that threat chemical units or decon assets are forward or massed, or that the threat commander has intent to use? Again, this must be verified intelligence.

Once the matrix criteria was developed, quantitative values were assigned to the matrix elements and a criteria for consideration for MOPP changes was added.

Based on the relative scale for consideration for MOPP changes—

- An assessed risk of less than 6 would not require MOPP change considerations.
- An assessed risk of 6 to 12 would indicate that MOPP changes must be considered.
- An assessed risk of 13 or above would indicate that MOPP changes may be required.

It can be noted that, based on the relative scale, any one of the following would require consideration for MOPP changes (6 points):

- Persistent chemical agents used against a division.
- Any chemical agent used against a unit or facility in a division support area (DSA).
- Chemical rounds verified with artillery units.
- The threat commander's verified intent to use chemical weapons.

The 3d Infantry Division emphasizes that MOPP is a commander's decision and must be based on METT-T. The matrix is not used to require commanders to change their unit's MOPP posture, only as another tool to assist the commander in making his decision.

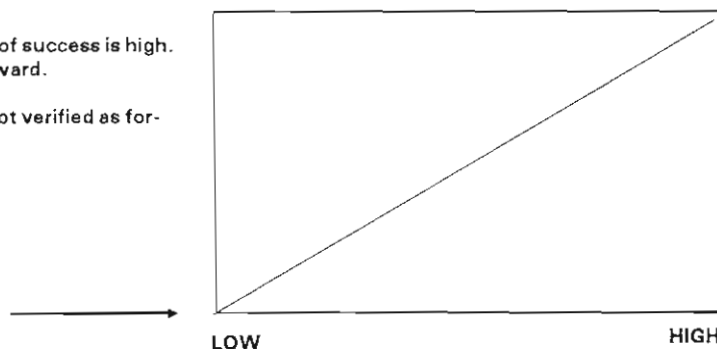
The matrix is additive. If persistent chemical units had been used in a corps support area (CSA) and the threat had chemical-capable missiles in range of the division, the additive value would be 13: persistent agent used in corps, 4 points; chemical agents used in the CSA, 5 points; and chemical-capable missiles in range, 4 points.

Additional information was developed and placed on the back of the matrix card. This information included—

- Probability of chemical attacks.
- Rules of thumb for MOPP degradation (based on CANE tests and experience).
- The definition of MOPP.
- MOPP levels.
- Service time chemical protective overgarments/battle dress overgarments.
- Mask-only criteria.
- Guidance on divisional minimum MOPP1.

The MOPP decision matrix was developed, coordinated, and approved by MG Shoffner. After the CG's approval, MOPP decision matrix cards were distributed to commanders and chemical staff personnel. The MOPP

1. Threat probability of success is high.
2. Unit is located forward.
3. Unit is mobile.
4. Chemical assets not verified as forward.



1. Threat probability of success is low.
2. Unit is located in DSA.
3. Unit is immobile.
4. Verifiable chemical assets
5. Chemical weapons have been used.

RULES OF THUMB FOR MOPP DEGRADATION (% DEGRADATION)							
LEVEL	C ²	COMMO	SYNCHRONIZATION	FIREPOWER	FS	CS	CSS
MOPP ZERO	0	0	0	0	0	0	0
MOPP1	10	0	0	0	0	10	10
MOPP2	10	0	0	0	0	15	15
MOPP3	50	50	20	50	50	50	50
MOPP4	50	50	20	50	50	50	50

MOPP — mission-oriented protective posture. A flexible system that proves maximum NBC protection for the individual with the lowest risk possible and still maintains mission accomplishment.

SERVICE TIME		
	CPOG	BDO
Hours when contaminated	6	24
Days when uncontaminated	14	30

DIVISIONAL MINIMUM MOPP 1	
Advantage	Soldier puts on CPOG/BDO and carries gloves, boots, mask & hood. Soldier is postured for NBC protection.
Disadvantage	The first time minimum MOPP1 is instituted, all soldiers must open one CPOG/BDO contingency pack. Once the plastic bag is opened, a service clock starts on the suit.

MASK ONLY — Protective posture that provides some relief from MOPP gear for personnel who must work in a contaminated environment. Personnel must be within protective shelters, some kinds of vans, tanks, or buildings where danger of transfer hazards is minimal. A soldier in mask-only posture can tolerate exposure to vapor hazards but not transfer hazards. Mask-only permits longer work periods, but personnel must assume full MOPP level before exiting their shelter area.

MOPP Equipment	MOPP Levels				
	MOPP Zero	MOPP1	MOPP2	MOPP3	MOPP4
Mask	Carried	Carried	Carried	Worn*	Worn
Overgarment	Available	Worn*	Worn*	Worn*	Worn
Chemical Protective Undergarment	Carried	Worn**	Worn**	Worn**	Worn**
Vinyl Overboot	Available	Available	Worn	Worn	Worn
Gloves	Available	Carried	Carried	Carried	Worn
* In hot weather, coat or hood can be left open for ventilation. ** The CPU is worn under the BDU (primarily applies to SOF, Armor, vehicle crewmen, and aviators.)					

MOPP DECISION MATRIX

1. HAVE CHEMICAL AGENTS BEEN USED:

	NO	THEATER	CORPS	DIVISION
NONPERSISTENT	0	1	2	4
PERSISTENT	0	2	4	6

2. HAVE CHEMICAL AGENTS BEEN USED AGAINST:

AIR-FIELDS	MANEUVER UNITS	TERRAIN	AS A BARRIER	LOC	C ²	CSA	DSA
1	2	3	4	4	5	5	6

3. ARE THERE CHEMICAL-CABLE MISSILES:

AT FRONT	AT ARMY	IN RANGE
1	2	4

4. IS THE THREAT PROBABILITY OF OPERATIONAL SUCCESS:

HIGH	EVEN	LOW
0	1	3

5. CHEMICAL ROUNDS ARE VERIFIED AT:

NOT VERIFIED	WITH FORCES	AT GUNS
0	3	6

6. INTELLIGENCE HAS VERIFIED:

ARTILLERY MASSED IN RANGE	CHEMICAL UNITS FORWARD	DECON ASSETS FORWARD OR MASSED	THREAT COMANDERS INTENT TO USE
5	4	5	6

7. CONSIDER MOPP CHANGES:

NO CHANGE	CONSIDER	CHANGE PROBABLE
0-5	6-12	13 AND UP

DTG: _____ ASSESSED RISK: _____

decision matrix was used during the division's Warfighter Exercise and later exercises. The MOPP decision matrix provided several advantages:

- It provided the division chemical officer a tool to initially track significant NBC-related events.
- It helped the division chemical NCOs to ask the right questions (the matrix was used primarily at DMAIN NBCC).
- It helped the ACofS G2 to orient on significant NBC-related events.
- It permitted the division chemical officer to better assess risk and recommend the initial increase in the division's minimum MOPP posture.
- It provided a quantitative measure (number) to communicate potential chemical threat.

The MOPP decision matrix has been used successfully in the 3d Infantry Division. Although one may argue with the criteria used and values assigned, a MOPP decision matrix is a good tool for the division chemical officer.

At the time this article was written, LTC Don W. Killgore was the division chemical officer for the 3d Infantry Division. His previous assignments include Chief of Staff for Task Force Victory in Kuwait; assistant chemical officer, V (US) Corps; assistant G3 plans officer, V (US) Corps; and Director, Office of the Secretary, USACMLS. LTC Killgore is a graduate of the Infantry Officer Candidate School, Chemical Officer Basic Course, Ordnance Officer Advanced Course, and CGSC. He has a BS in chemical engineering from the University of Texas and an MS in systems management from the University of Southern California.