

Automatic Masking Criteria

—establishing criteria for tactical operations

By CPT Ralph F. Kerr

The requirement for the NBC staff at battalion and/or brigade level to establish automatic masking criteria guidance is an essential task to offset casualties from the use of chemical munitions. It is an integral part of the staff planning process which needs clarifying.

Automatic masking criteria (AMC) guidance is a commander's decision to judge a situation based on NBC threat, vulnerability analysis, and mission as requiring his/her soldiers to immediately put on their protective masks.

AMC guidance is the end result of an analytical process applied to a specific operation and not simply a generically established criteria as "mask or assume MOPP4 upon receipt of enemy artillery." The intent of establishing AMC guidance is to prevent soldiers on the battlefield from over-reacting to a possible or perceived chemical threat. If soldiers automatically mask and upgrade their MOPP status each time artillery is received, the initiative can be swiftly taken by the enemy as friendly soldiers are disrupted from the mission.

The process to determine the requirements for and establish this guidance follow three steps:

1. Analyze the NBC threat.
2. Conduct a vulnerability assessment.
3. Apply the analysis of the NBC

threat and vulnerability assessment to the unit's mission.

NBC threat analysis is a detailed look at the enemy which answers the following questions:

- What is the enemy's employment doctrine for chemical agents? Is their chemical fires doctrine force-oriented, terrain-oriented, or a combination of the two, and to what extent?

Is there substantial reason to believe the enemy is prepared... to fire chemical munitions?

- Has the enemy employed chemical agents (confirmed) recently and/or during this campaign? How were chemical agents employed and were there special or significant circumstances concerning this use? Was this chemical employment considered an isolated event and/or do we have reason to believe otherwise?

- What weapons systems does the enemy have that fire chemical munitions; are these in sector committed to

firing against our unit in particular; and are we in range of these? Is there substantial reason to believe the enemy is prepared or is preparing to fire chemical munitions?

- Do friendly forces' actions call for the employment of enemy chemical fires within the realm of their doctrinal employment and do they have the capability to determine this?

NBC threat analysis is important for several reasons. First, this analysis should provide the unit an idea of what types of chemical agents the enemy may use and where these will most probably be employed on the battlefield. Second, this can be incorporated into the intelligence preparation of the battlefield (IPB) process and be included in the S2s reconnaissance and surveillance (R&S) plan. Having an idea of what type of chemical agents may be used and where these may be employed can then allow for planning and coordinating NBC contamination avoidance and protective measures.

Vulnerability assessment provides the unit with an estimate of the probable impact of enemy chemical attacks. It's conducted so commanders can reduce risks associated with enemy chemical attacks and maximize force effectiveness on the integrated battlefield.

This assessment should be conducted in accordance with FM 3-4,

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NBC Protection. (FM 3-4 is the doctrinal manual referenced here and used for the purpose of integrating vulnerability assessment into the process for establishing AMC guidance.) Vulnerability assessment addresses casualty effects estimates, times and locations vulnerable to chemical downwind hazards, chemical barriers, and persistency.

The analysis of the NBC threat and vulnerability assessment must finally be applied to the unit's mission. Combining pertinent items of interest such as series of events that have led to enemy employment of chemical munitions, periods of high risk, and types of agents the enemy will most probably use, and the probable attack areas provide the basis for establishing AMC guidance.

An application of the process to establish AMC guidance is explained in the following scenario using a fictional enemy force, the Casperians. Our unit has been assigned the mission of attacking against a well-established defensive position.

An analysis of the Casperians' chemical employment doctrine shows it to be both terrain- and forces-oriented. They will use both persistent and nonpersistent chemical agents on key terrain features to deny access. Persistent agents will be used on key terrain features if they do not determine that terrain as essential to their mission and do not intend to occupy it.

Nonpersistent agents will be used on key terrain features to degrade the effectiveness of troops occupying that terrain should the Casperians plan to

occupy it. Their doctrine also states that they will use nonpersistent agents against identified deliberate defenses that they intend on attacking; massed troop movements in the open; and reconnaissance, surveillance, and target acquisition (RSTA) elements.

We confirm with the S2 that the enemy has not employed chemical munitions during this conflict, but during a border war with their neighbors five years ago the Casperians used chemical agents as per their doctrine.

They have reportedly stockpiled GB nerve agent and HD/Mustard blister agent. Their chemical munitions have been delivered using Soviet-purchased artillery pieces. Intelligence reports state that the previous use of chemical munitions by the Casperians only supported tactical operations and that similar future chemical use could be expected.

The FSO confirms and expands on some of the information we received from the S2. The Casperian division has a battery (six guns) of Soviet 2S1 self-propelled 122mm howitzers organic to each of its three regiments. It also has a battalion (eighteen guns) of the Soviet D-20 152mm howitzers under division's command and control in support of their defense.

The maximum effective range of the 2S1 SP howitzer is 15,300 meters and for the D-20 152mm howitzer it is 17,230 meters. The ranges of each system are included on the S2's situational template once the firing positions are determined.

After completion of the initial NBC

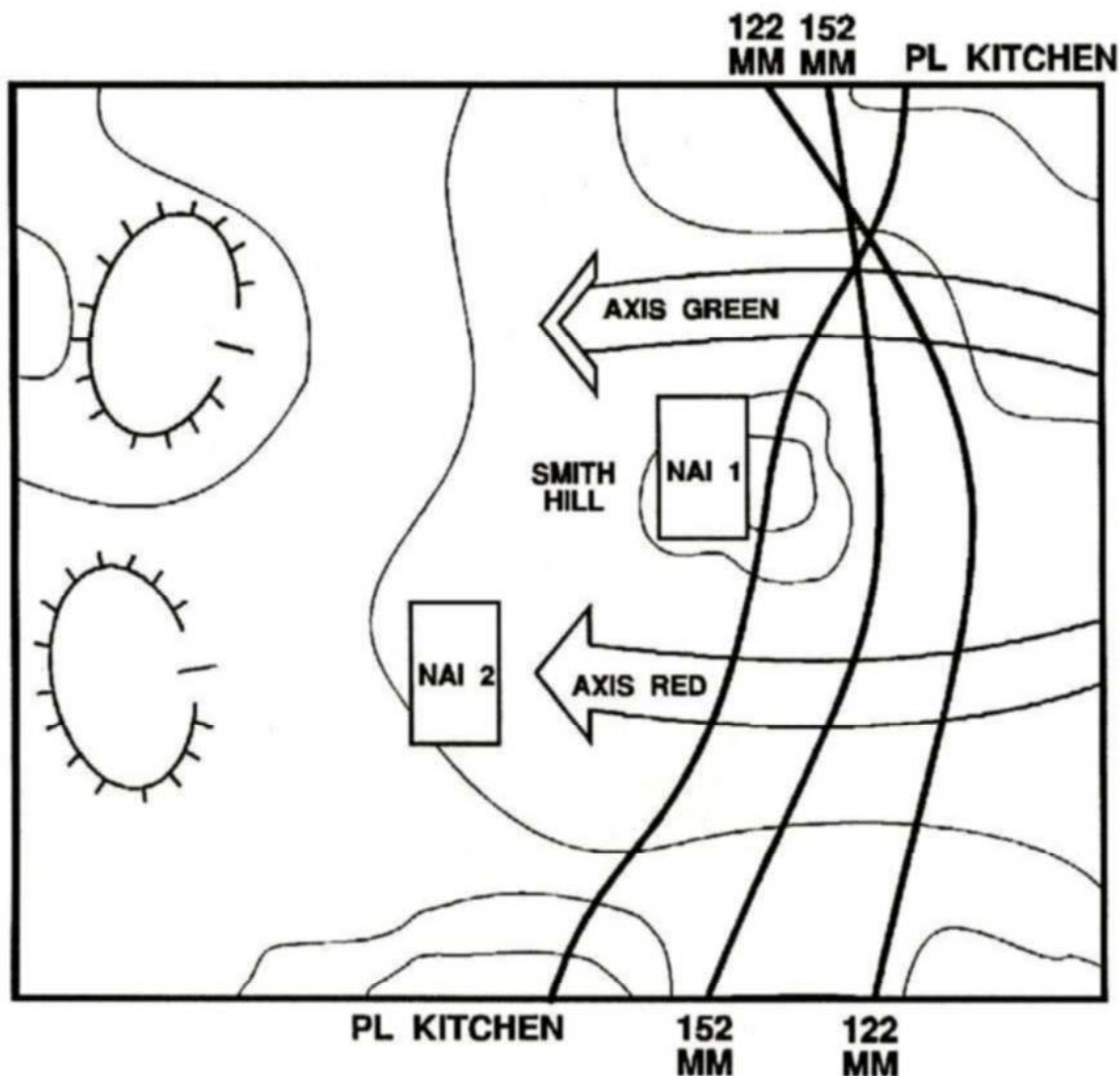
threat analysis, we conduct our chemical vulnerability assessment. The significant information from this assessment is the generated effects information (see Chapter 3, FM 3-4). We determine that the enemy does, in fact, have the capability (number of available rounds) to effect casualties.

Applying the NBC threat analysis and vulnerability assessment to the mission, we determine that there are two probable chemical attack areas that may affect our mission. These are determined in close coordination with the S2 and are based on the enemy's doctrine and previous use.

The figure on the next page shows these probable chemical attack areas as named areas of interest (NAIs). We assume that the most effective casualty producing agent will be used, which is GB in this case, but must keep in mind that the enemy has the capability to use HD/Mustard. This is significant because HD/Mustard is a persistent agent.

If there is no threat of a persistent agent being employed, then you do not consider the periods of high risk in establishing automatic masking criteria because there would be no downwind hazard to worry about (see Chapter 3, FM 3-4). Although a chemical downwind message for our area of operations is not available for the time period of interest, it is estimated that the wind direction is 132 degrees and the windspeed is 6 kmph. Both NAIs are within range of artillery and because the Casperians will have reconnaissance forces forward of their defenses, it is assumed that they will be able to determine our intent to some degree.

For the purpose of this operation, we establish AMC guidance to include the immediate area of NAIs 1 and 2, and phrase this guidance to support the scheme of maneuver. This may be included under the coordinating instructions to the operations order and stated in the following manner:



"AMC guidance: Upon receipt of artillery forward of PL Kitchen along Axis Red and/or upon receipt of artillery on Smith Hill."

Our AMC guidance is established as stated because PL Kitchen is already defined in the operational graphics and we are in artillery range in the vicinity of this line. We specify Axis Red because this runs the southern sector where we have templated the probable chemical attacks (NAIs 1 and 2). With the wind direction of 132 degrees and no probable attack areas in the north, we do not establish AMC guidance along or

effecting Axis Green.

The period of high risk determined from our vulnerability assessment is not mentioned in the stated AMC guidance, but should be of concern to us and may be included, if desired. Although we predicted the worst-case scenario using the nonpersistent nerve agent GB, referring to FM 3-8, *Chemical Reference Handbook*, we find in Section IV (Characteristics of Chemical Agents, Chemical-Filled Munitions, and Chemical Equipment) that GB has a persistency from 10 minutes to 12 hours. Any forces moving along Axis Red will want to

know this characteristic.

The established automatic masking criteria guidance should serve to provide definitive guidance to combat the NBC threat preventing over-reaction to chemical employment by the Casperians. But most importantly, it will prevent unnecessary casualties from the enemy's use of chemical munitions.

At the time this article was written, CPT Ralph F. Kerr was assigned to Fort Irwin, California.