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In the mid-1980's I served as the intelligence officer for a Marine Artillery Battalion. Stationed in Twentynine Palms, Calif., I would often find myself deployed in the field, on exercises where thousands of live artillery rounds were fired down range.

In keeping with the Marine artillery motto of "shoot, move, communicate," we were always mobile, moving from one firing location to another in an effort to simulate the fluid nature of modern war. This mobility had us, more often than not, passing through live-fire impact areas. One thing you quickly learned was not to touch anything lying on the ground, because modern artillery shells had a high "dud" rate, meaning they didn't always function the way they were intended. Tens of thousands of these "duds" were scattered across the desert terrain, not unlike that found in Iraq.

What makes all of this relevant today is the ongoing speculation about the source of the Sarin chemical artillery shell found rigged as an improvised explosive device (IED) last week by the US military in Baghdad.

If the 155 mm shell was a "dud" fired long ago – which is highly likely – then it would not be evidence of the secret stockpile of weapons of mass destruction (WMD) that the Bush administration used as justification to invade Iraq. As a United Nations weapons inspector in Iraq from 1991 to 1998, I know that the Iraq Survey Group (ISG), the US-led unit now responsible for investigating WMD in Iraq, could quite easily determine whether this shell had been fired long ago or not. Given the trouble the administration has had in documenting its past allegations about WMD, releasing the news of last week's Sarin shell without the key information about the state of the shell itself seems disingenuous.

As a former UN inspector, I'm also familiar with the level of disarmament achieved concerning Iraq's banned weapons of mass destruction (WMD). And I'm comfortable with the fact that during my time in Iraq, 95 percent of the WMD produced by Iraq was verifiably accounted for. But I've always contended that Iraq is a WMD archeological site, and that if one digs long enough, vestiges of these past WMD programs will be uncovered.

Determining whether or not the discovery of the Sarin artillery shell represents such an archeological discovery, or is part of Saddam Hussein's alleged stockpile of WMD, rests with a full forensic examination of the shell.

The key to whether the Sarin artillery round originated in a covert cache or was a derelict dud rests in the physical characteristics of the shell itself. The artillery shells in question were fitted with two aluminum canisters separated by a rupture disk. The two precursor chemicals for the kind of Sarin associated with this binary artillery shell were stored separately in these containers. The thrust of the shell being fired from the artillery piece was designed to cause the liquid in the forward canister to press back and break the rupture disk, whereupon the rotation of the shell as it headed downrange would mix the two precursors together, creating Sarin. Upon impact with the ground – or if using a timed fuse, in the air – a burster charge would break the shell, allowing the Sarin gas to emerge.

Many things can go wrong when firing an artillery round: the propellant charge can be faulty, resulting in a round that doesn't reach its intended target; the fuse can malfunction, preventing the burster charge from going off and thus keeping the round intact; the rupture disk can fail to burst, keeping the precursor chemicals from combining. The fuse could break off on impact, leaving the fuse cavity empty. To the untrained eye, the artillery shell, if found in this state, would look weathered, but unfired.

The dead giveaway as to whether or not the shell had been fired is the base-bleed charge at the bottom of the shell, which unlike all its other physical features, will show evidence of being fired (or not). Iraq declared that it produced 170 of these base-bleed Sarin artillery shells as part of a research and development program that never led to production. Ten of these shells were tested using inert fill – oil and colored water. Ten others were tested in simulated firing using the Sarin precursors. And 150 of these shells, filled with Sarin precursors, were live-fired at an artillery range south of Baghdad. A 10 percent dud rate among artillery shells is not unheard of – even greater percentages can occur.

So there is a good possibility that at least 15 of these developmental Sarin artillery shells failed and lie forgotten in the Iraq desert, waiting to be picked up by any unsuspecting insurgent looking for raw material from which to construct an IED.

Given the known data about the Sarin shells, it would be logical to expect the US to offer a careful recital of this data to accompany the news of the shell found last week. But the facts that should have accompanied the story – the type of artillery shell, its condition, whether or not it had been fired previously and the age and viability of the Sarin and associated precursor chemicals– were absent. And that has opened the door to irresponsible speculation that the shell was part of a live WMD stockpile.

The data – available to the ISG – would put this development in proper perspective, allowing for responsible discussion of the event and its possible ramifications.

Given the fact that Americans find themselves in the midst of a contentious presidential election season, it is essential that accurate data about the situation in Iraq be made available to the electorate. The handling of the Sarin artillery shell incident should serve as the greatest justification yet for shutting down the ISG, and immediate return to Iraq of UN weapons inspectors – if for no other reason than to restore a vestige of credibility to a disarmament effort that long ago lost its moral compass.

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