For Want of a Nail …

Tactical successes or failures can often accumulate to determine strategic outcomes, but too often we ignore the linkages between tactics and strategy. A case study of US vehicles in Iraq.

WE E CAN LOOK BACK WITH SOME CERTAINTY to the reality that the great maritime nations' unwillingness to understand and address the causes of scurvy transformed the history of the modern industrial world.

Britain, by the end of the 18th Century, had conquered scurvy, helping the Royal Navy to win the Battle of Trafalgar in 1805, dramatically altering the course of European and world history. But not before literally hundreds of thousands of mariners of all the major maritime nations had perished from the scourge.[1]

> For want of a nail the shoe was lost.
> For want of a shoe the horse was lost.
> For want of a horse the rider was lost.
> For want of a rider the battle was lost.
> For want of a battle the kingdom was lost.
> And all for the want of a horseshoe nail.
>
> — old English rhyme.

Sustained, dominant power projection remained perhaps the sole preoccupation of Their Lordships of the Admiralty through the 17th and 18th centuries, and yet manpower losses through disease — primarily scurvy — took at least eight times' more lives than combat casualties during that period. Knowledge of the manpower loss expectations, even in peacetime, affected recruiting, not to mention operational efficiencies on ships which often embarked double the number of sailors needed in the knowledge that the homecoming crew would be, at best, half the embarking number. And yet, the commitment to finding an appropriate response to scurvy was never a priority for the military planners.

The example of the impact of scurvy on strategic outcomes is not isolated. It reflects priorities still prevalent today: the desire to deliver "teeth" to fighting forces, and minimizing the attention to the "tail": the logistical, support, training, non-combat operational doctrine, and human welfare end of the scale. And yet all military planners recognize that, to some extent, for example, "logistics [in the broadest sense of support] is strategy".

Just as the accretion of activities at squad level determine outcomes at a theater, and ultimately political level, so decisions taken at a strategic level determine outcomes at a tactical level. We persist in studying battlefield doctrine and strategic policy as separate entities, without sufficiently emphasizing the tactical-strategic interface.[2] We have now developed the technology of the tactical-strategic interface: it is, to a great degree, the systems which enable "net-centric warfare". But we have yet to evolve the philosophies and doctrines which keep strategists from micro- managing the tactical events, often seeing staff officers in headquarters using the technologically-granted battlefield situational awareness to dictate tactics at squad levels. Unmanned aerial vehicles (UAVs), operated from posts thousands of miles behind the lines, are already evidence that the tactical-strategic hierarchy has become blurred. Yet complex technology has not crowned its owners with decisive success.

The current conflict in Iraq has shown the damage to US and Coalition interests of the lack of cohesion or structure between national policy and battlefield practice. This applies to more than merely the US, although the credibility of the US has been damaged most by its failure to successfully marry sound strategic and anthro-political intelligence of the target area and its context with the tactical intelligence and operational realities posed by the threat to be addressed. The first years of the US-led Coalition activities in Iraq were dominated by the statement of then-US Defense Secretary Donald Rumsfeld, to the effect that "you fight the war with the army you have", implying that no changes could be made to force structure and doctrine "on the move".

US forces did, in fact, adapt to realities on the ground, but were constrained from holistically addressing a threat environment in the best possible sense, and as rapidly as necessary, due to the goals and management style set by the Rumsfeld dogma of "fighting with what you have".

"Fighting with what you have" meant, initially, a conventional confrontation between Coalition and Iraq forces, with

1 See, for example, Brown, Stephen R.: *Scurvy: How a Surgeon, a Mariner and a Gentleman Solved the Greatest Medical Mystery of the Age of Sail*. London, 2003: Summersdale Publishers.

2 See also, Copley, Gregory: *Grand Strategy in an Age of Tactics*, in *Defense & Foreign Affairs* ***Strategic Policy***, 1-2008.

the obvious advantage to the Coalition. But, as countless observers have noted, the post-conventional phase was different, and the early Coalition advantage was never able to be brought to a successful conclusion. The result was an ongoing asymmetric war in which US casualties mounted fairly rapidly, while goals remained unmet, even at the most tactical level. The impact on political and public support for the Coalition in the US and among Coalition states fell in direct proportion to the stalemate at the tactical level.

This, of course, begs the question: "What if Coalition casualty levels were, say, halved, and the stabilization of Iraq achieved in, say, one year?"

Would, then, US prestige have plummeted? Would, then, Iran have regained the strategic initiative in Iraq and the region, and been able to sustain its clerical oligarchical hold over the Iranian people? Would, then, the US political and economic environment have turned to malaise and angst?

And yet, while the Rumsfeld dogma prevailed, nothing was done to address the real cause of many of the casualties in the asymmetric war in Iraq (as well as Afghanistan, and so on). And the war plunged deeper into stagnation. The old English rhyme, then, became *à propos*:

For want of a nail the shoe was lost.
For want of a shoe the horse was lost.
For want of a horse the rider was lost.
For want of a rider the battle was lost.
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And all for the want of a horseshoe nail.

There are those who would argue that gradual changes in US military operational doctrine and equipment in Iraq since Rumsfeld's departure on November 8, 2006, as US Secretary of Defense enabled the US to regroup and recover some of the military and strategic initiative. But it is clearly recognized that in the longer-term, the mere extraction "with honor" of US — and coincidentally, Coalition — forces from Iraq has merely turned the theater over to the Iranian clerics, who remain undefeated and with renewed vigor and power. Nonetheless, some of the problems of recalcitrant "nails" — such as the main causes of battlefield casualties — were finally being addressed in the late stages of US involvement in Iraq.

Tests ordered and financed by the US military in January and February 2008 confirmed the viability of low-cost, life-saving systems to protect troops in military vehicles facing insurgent attacks. This meant that vehicles being shipped to combat forces in Iraq and Afghanistan without the vital upgrades would face the necessity for in-theater retrofitting of the technology, and the removal of systems which actually compounded the dangers being faced by the troops.

Nonetheless, the same mentality which caused the Admiralty to resist the obvious remedies to scurvy in the 18th Century continues to reign in the Pentagon. There was a refusal to accept the test results because they implied that the new mine-resistant, ambush-protected (MRAP) vehicles being deployed were not perfect in every way. This mentality seemed to be more about protecting the jobs of senior US Defense officials than about protecting US troops. And, anyway, with the decline in improvised explosive device (IED) attacks on US forces, as a result of political accords between the US and Iran in late 2007,[3] why bother?

Studies by the International Strategic Studies Association (ISSA) — the publisher of *Defense & Foreign Affairs* — through 2007 highlighted the potential of new systems to protect troops against the two-stage effects of blast, and the 2008 tests now confirmed absolutely the accuracy of the ISSA analysis.[4]

Despite later US Defense Department attempts to minimize the results, and thereby minimize any suggestion that MRAP vehicles were not fully taking advantage of life-saving technologies, US Army and US Marine Corps (USMC) officials in late January and early February 2008 validated, through a mandated series of scientific tests, internal military vehicle systems which would help save ground force personnel from grievous injury and death, and substantially mitigate the level of injuries, from enemy attacks using improvised explosive devices (IEDs) and rocket-propelled grenades (RPGs) against vehicles.

One seating and harness system was shown to dramatically improve chances of survival and reduce injury levels in vehicle accidents and blast situations. However, the tests also showed that most systems being fitted in US military vehicles actually *exacerbated* the danger to troops and compounded the prospect of death or injury when their vehicles were subjected to blast or crash.

Despite this, many new armored vehicles, and particularly the MRAP vehicles, and lighter HMMWV ("Hummer") vehicles, were still, as of mid-February 2008, being shipped to US forces in Iraq and Afghanistan without the now-validated safety system. The only system to pass the two sets of tests was the CCOPS *Cobra* system,[5] which had been highlighted by independent analysis of the ISSA through 2007 and 2008.

Analysts at ISSA contended that reductions in deaths and in the seriousness and pervasiveness of injuries received in Iraq and Afghanistan combat situations would have profoundly altered the strategic framework of the US-led "war on terror". In that study, this writer noted that the possibility of perhaps halving US military deaths and catastrophic injury in the wars — which may have occurred had the life- saving technology been deployed from the beginning of combat operations in 2003 — would have had a profound impact on US political and public support for the wars and would have thus hastened its successful conclusion.

The scope of potential savings of lives and the prospect of massive reductions in both the occurrence and levels of injuries to troops was of "truly strategic proportions". There is little doubt that had such savings in lives and reductions in the frequency and levels of injuries occurred during the early stages of the Iraq deployment, in particular, then the US would have been politically empowered to have undertaken the type of decisive tactical and doctrinal approach to urban conflict subsequently taken during the "surge" led by Gen. David Petraeus, commander of the Multi-National Force - Iraq (MNF-I), much earlier in the war. This would have led to a very different outcome for the US, the Coalition, and for Iraq.

ISSA had been conducting an investigation into the lack of safety systems for US Army and USMC vehicles deployed in urban warfare systems since early 2007, and major omissions in survivability systems, highlighted in ISSA White Paper Reports had begun to be addressed by the US Army and USMC by October 2007. It took until February 2008, however, for scientific tests to be completed to validate the problems as outlined by the ISSA re-

3 See: Bodansky, Yossef: "Washington's Deal With Iran"; *Defense & Foreign Affairs* ***Strategic Policy***, 1-2008.

4 For further background, see: *Defense & Foreign Affairs Special Analysis*, June 19, 2007: "Iranian, Jihadis Prepare Doctrine to Defeat New US MRAP Vehicles". *Defense & Foreign Affairs Special Analysis*, June 11, 2007: "New Study Highlights Ongoing Dangers to US Troops With Major New Vehicle Programs". *Defense & Foreign Affairs Special Analysis*, July 4, 2007: "US Defense Force Personnel Remain Vulnerable as New Vehicle Systems Enter Production Without Appropriate Survivability Systems". *Defense & Foreign Affairs Special Analysis*, October 8, 2007: "Some Progress, But Major Failings, in Getting Viable Survivability Systems into New US Armed Forces Vehicles"

5 The CCOPS *Cobra* seating system was developed under contract with the US Army National Automotive Center at the Detroit Arsenal and is currently produced by Global Seating Systems LLC, of Exton, Pennsylvania. See earlier ISSA White Papers on Personnel Survivability for more complete details.

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Tests on the seating and restraint systems for the MRAP were conducted at the highly-regarded Calspan Corporation test facility in Buffalo, New York, during the week of January 28, 2008, and at Penns Park, Pennsylvania, by the equally highly-regarded ARCCA Incorporated crash safety engineering test facility during the week of February 11, 2008. Testing for the HMMWV seats and restraint systems took place during the weeks of January 28 and February 4, 2008, at the NIAR Horizontal Accelerator test facility in Wichita, Kansas.

The crash portion of the testing on seats for the MRAP was undertaken by Calspan using a Hyge Horizontal Accelerator, and the blast and slam-down testing was performed at the ARCCA facility using a state-of-the-art drop tower. All tests were conducted using a 50th percentile Hybrid III anthro- morphic test device (a test dummy).

The new tests validated earlier ISSA allegations that most of the seating and restraint systems used in the MRAP and HMMWV were lethally dangerous to vehicle occupants, often posing as great a threat to the life of troops in combat or training operations as occurs from enemy-initiated blast action. Moreover, the test results sent many of the MRAP vehicle manufacturers rushing to correct the problem, even though they had, in many instances, ignored the ISSA warnings that their failure to act was exacerbating the situation.

These test results not only validate the ISSA finding that only one seat and restraint system being fielded was up to the task of minimizing battlefield losses of personnel to death and injury, but also validate the view that just up-armoring vehicles is an insufficient response to the fluid threat from insurgent-initiated blast.

The official test results had not been published by the US Army and US Marine Corps by the end of February 2008, but sources close to the tests said that, for example, the tests on the seats used in the Force Protection, Inc. MRAP vehicles — seats made by Seats Inc. — produced "the worst results ever seen" in such tests, and resulted in three simultaneous hardware failures. As well, the seats made by MasterCraft used on the Armor Holdings MRAP vehicles saw the failure of a key component during the tests.[6] Significantly, the Seats Inc. and MasterCraft seats and restraint systems used by some MRAP manufacturers were not built for military vehicles or a combat environment, and appear to have been chosen by MRAP manufacturers on cost grounds alone.

Tests were conducted for frontal (30 mph), lateral, and rear (just under 20 mph), and drop situations, as well as for blast. The Seats Inc. and MasterCraft seats both failed catastrophically in the tests,[7] with the exception that the Master Craft seat passed the lateral test. Only the CCOPS Cobra seating, made by GSS specifically to address the two- stage effects of blast, as well as crashes and rollovers commonly occurring in military vehicles, passed all of the tests, and did so unequivocally. A new seat from each vendor was provided for each of the three tests.

ISSA, on October 8, 2007, urged that:

1. US Congressional oversight functions begin to enquire more closely into manufacturer compliance with the intent and letter of MRAP specifications for seating and restraint systems which demand attention to blast attenuation and crash survivability, and to consider the legal liability of manufacturers whose systems place vehicle occupants at unnecessary risk;

2. The US Department of Defense (DoD) should priotiize in-theater retrofitting of M1114 HMMWV vehicles to the same level as the provision of new MRAP vehicles; and

3. DoD and the MRAP program office insist on full testing of all seats — driver, commander, and personnel seating — to be installed in MRAP and other military vehicles, to ensure that the seating meets the anticipated threat levels, not only with regard to direct effects of blast, but also addressing two-stage blast attenuation, frontal collision, and roll-over.

These recommendations led to ongoing pressure for testing to validate the internal systems of US military vehicles.

Significantly, the MRAP vehicles made by BAE Systems,[8] and currently being deployed in Iraq, all carry the CCOPS *Cobra* system in the front seat positions, although the company is now being urged to consider the seating for all positions in the vehicles to afford the same safety levels for all occupants.

I also noted in the study that there is now absolutely no excuse for continued shipment of MRAPs or HMMWVs into combat or training operations unless they have the CCOPS *Cobra* system fitted. It is clear that some vehicle manufacturers persisted in the fitting of unsafe seats merely to improve profit margins, even though the MRAP specifications clearly stated that the seats and restraint systems had to be blast resistant. Some of the seats would not have even passed normal, civilian FMVSS (US Federal Motor Vehicle Safety Standards) requirements, and even those standards are totally inadequate to address the threat posed to life and limb by blast and crash situations.

The long delays in getting defense forces to consider the vital role of appropriate seating and restraint systems in addressing the two-stage impact of blast, and in saving lives and the health of occupants during combat accidents and incidents, is reminiscent of the reluctance of navies in the Age of Sail to accept proven remedies for scurvy.

Delays, for reasons of bureaucratic obstinacy or for money-saving, in accepting life-saving approaches to dealing with scurvy, literally transformed the global strategic environment in the 18th Century, causing massive and unnecessary loss of life and dramatically slashing operational effectiveness. The failure to address scurvy in a timely and logical manner shaped modern history.

Today, we have seen the loss of life and the levels of injuries in the Iraq conflict — and elsewhere — mount to the point where the strategic picture has been impacted, quite apart from the massive human and financial cost entailed by failing to adopt now-proven approaches to dealing with combat blast on troops in military vehicles. With the recent tests, there is now no valid excuse for deploying military vehicles which incorporate components which *increase* risks to personnel in combat and training operations.

Who would deny the logic, save, perhaps, a scurvy knave? ★

6 The seat made by MasterCraft (which also provides seats for many military vehicles throughout the world) suffered significant failure in the front vertical and rear tests. This seat was, for the tests and in its use on MRAPs, installed on a commonly used blast box which failed during the frontal and rear tests, bringing into question the use of a blast box and whether or not the many blast boxes in existence today are suited or properly tested for their environment. During the frontal test, the blast box and the seat tracks failed and the test dummy slid underneath the seat belts, which were improperly anchored. Had this been a human in the seat, the injuries would have been catastrophic. During the rear test, the blast box also failed, causing the dummy to slide up the seat back and strike its head. Had this crash occurred in a moving vehicle, the driver would have been forcibly shifted away from the driving position and unable to control the vehicle.

7 The seat made by Seats Inc. (which provides seats for many military vehicles throughout the world) failed the frontal test (at only 30mph) so emphatically that officials at the test facility ranked it as the ugliest test that they had ever seen. It was reported that the dummy was completely ejected from the seat in the frontal test, and that there were a large number of parts that just simply broke. During the rear test, the seat structure collapsed backwards causing partial ejection of the dummy. The side test could not be run on this seat due to fear of damaging the test facility.

8 BAE Systems in 2007 acquired Armor Holdings, and now produces MRAP and other vehicles under both the BAE and Armor Holdings brands.