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Russia Reaffirms its Long Reach Intent

Based on public statements and ongoing analysis, it is now clear that Russia intends to maintain high operational tempo of its Long Range Aviation (LRA) [*Dal'nyaya Aviatsiya*], or the strategic bomber force (the 37th Air Army), continuing a trend which began in mid-2007. While speaking at a press-conference on April 4, 2008, Russian Federation Air Force (RFAF) Commander Colonel-General Aleksandr Zelin noted that the RFAF plans to increase the number of aerial combat patrols performed by the LRA to 20-30 deployments per month, an increase from 2007 operations when the 37th Air Army resumed long-range deployments.

The April 4, 2008, press-conference was a joint briefing of General Zelin and the Commander-in-Chief of the Russian Navy Admiral Vladimir Vysotskiy. In particular, Vysotskiy discussed Russian medium- and long-term naval modernisation programs aimed at a complete overhaul of the navy's combat potential by 2050-60. Vysotskiy also noted that the 2020 naval program will be adopted in April 2008. He reaffirmed Russia's commitment to field the new strategic naval system, based on the fourth-generation *Borey* class nuclear-powered ballistic missile submarine (SSBN) platform, and the *Bulava-M* sea-launched ballistic missile (SLBM). The head unit, *Yury Dolgorukiy*, is 94 percent complete and is expected to commence sea trials later in the year. Is it envisaged that at least half, if not all, of the eight *Boreys* will be based in the Pacific, where they will replace the ageing *Delta III* class SSBNs.

Admiral Vysotskiy has also noted that plans to acquire 5-6 next-generation aircraft carriers are in place and that the Russian Navy will retain high operational tempo and will intensify "out-of-area" deployments.

Overall, the press-conference of the Chiefs of two fighting services, responsible for out-of-area operations, aimed to highlight Russia's strategic intent to maintain high levels of visible globalised military activity, in support of national interests.

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The election of Dmitriy Medvedev, as the new head of state, will not see the reverse of President Vladimir Putin's approach to use the military factor as a tool of promoting Russia's international influence and prestige. In the near future, the display of the nation's global power projection capability will take the form of periodical naval deployments to the north-eastern and central Atlantic, the Mediterranean, western Pacific, and the Indian Ocean.¹ Russian forward naval activity will be reinforced by the LRA's ongoing "out-of-area" operations.

Between August 17, 2007, when Pres. Putin ordered the resumption of strategic bomber force patrols, and December 31, 2007, Russia's LRA executed over 100 sorties. In 2008, to date, over 40 sorties have been completed. To retain its high operational tempo, in all major theatres of operations, the 37th Air Army utilises its entire combat potential based around two principal combat formations:

- The 22nd Guards Donbass Heavy Bomber Division based at the Engels air base, Saratov region, Central Russia; and
- the 326th Ternopol' Heavy Bomber Division based at the Ukrainka air base, Russian Far East.

The out-of-area operational activity of these divisions is supported by the 203rd Guards Orel Aerial Tanker Regiment based at the Engels air base.

The main areas of patrol include the northern Atlantic where LRA deploys pairs of Tu-160 *Blackjack*, Tu-95MS *Bear H*, and Tu-22M3 *Backfire C* strategic bomber, the Black Sea (Tu-22M3s), and western and north-western Pacific (Tu-95MSs).²

In the week beginning March 31, 2008, the LRA staged yet another exercise in the Arctic and Pacific Oceans, which involved units of both heavy bomber divisions and logistical elements. The exercise was carried out under the leadership of the Commander of the 37th Air Army, Major-General Pavel Androsov.

Commencing in 2008, the long-range combat aerial patrols in the Pacific will be carried out jointly by the LRA and long-range maritime strike (Tu-22M3) and anti-submarine warfare aircraft (Tu-142 *Bear*) of the Russian Pacific Fleet. In 2008-09, RFAF plans to extend aerial combat patrols to the Indian Ocean theatre.

See Weekly Global Report, February 18, 2008, Russian Navy Reclaims its Blue-Water Force Status

Weekly Global Report, March 3, 2008, Russian Strategic Bombers Test Pacific Nations

Weekly Global Report, March 3, 2008, CIS Leaders Galvanise Around Russia's Transition to Medvedev, and the Threat Posed by the Kosovo UDI

-Dr. Alexey D. Muraviev³, FDI Associate

¹ For a detailed report on the Russian Navy's latest deployment to the Atlantic and the Mediterranean see *Weekly Global Report, IV(6)*, February 2008, pp. 1-3.

² For more details about operations of Russian strategic bombers in 2008 see *Weekly Global Report, IV (8)*, March 3 2008, pp. 4-5.

³ Dr Muraviev is a Strategic Affairs analyst based at Curtin University of Technology, Perth, Western Australia.

Indonesia to See Additional Su-30s by October 2008

Indonesia will receive three additional Russian-made Sukhoi Su-30 combat aircraft later in 2008, supplementing the initial delivery of three Su-30s. The Indonesian Air Force [*Tentara Nasional Indonesia-Angkatan Udara*: TNI-AU] had acquired four Sukhois in 2003: two Su-27SKM and two Su-30MK2s. TNI-AU agreed in late August 2007 to acquire six Su-27/30s, but the new deliveries were apparently not part of that tranche, which was still being negotiated.

Air Force Chief of Staff Air Marshal Subandrio said the three Su-30s were expected to arrive in the country before the National Armed Forces Day on October 5, 2008. Air Marshal Subandrio, who like many Indonesians goes by only one name, said the three Su-30s would become part of the Air Force's Sukhoi Squadron V based in Makassar, South Sulawesi.

The US\$300-million (\$322-million) contract stipulates the delivery of three Su-27SKM and three Su-30MK2 to the TNI-AU, in addition to two Su-27SK single-seat and two Su-30MKK twin-seat fighters, supplied under a 2003 contract worth US\$192-million (\$206-million).

Significantly, the first four Sukhois entered TNI-AU service essentially without any weapons systems, so were only valuable as a technology and doctrinal development tool. The TNI-AU moved only recently to begin acquiring weapons systems to transform the Sukhois into a combat force.

Defense Ministry Director-General for Defense Facilities, Air Vice Marshal Erik Herryanto, said that the Ministry and Russian defence export organisation Rosobornexport would soon finalise negotiations on the supply of six Su-30s tentatively agreed in August 2007. He noted: "The process to purchase the six Sukhois is almost completed and we are now only waiting for the issuance of a letter of credit by the Finance Ministry." The letter-of-credit issuing process would take three to six months so it was still difficult to say when exactly the additional Sukhois would be delivered.

Meanwhile, a lecturer of Study of War in International Relations at the University of Indonesia has called for the TNI to embrace net-centric warfare (NCW) and start its own Revolution in Military Affairs (RMA). Lecturer Andi Widjajanto, who holds a post-graduate degree from the London School of Economics, and the US National Defense University, published a report in Jakarta on April 9, 2008, making the call. He cited examples of the spread of NCW thinking in Asia, and particularly in the People's Republic of China (PRC), where he noted that the People's Liberation Army (PLA) was also implementing its own version of the RMA. He noted: "The PLA's RMA strategy of a 'generational leap' is based on two simultaneous transformations: mechanization and informatization. This double construction of RMA represents a practical approach to a new style of military engineering."

He added that all cases showed that RMA worked best in countries which were willing to make necessary adjustments to capture advancements in IT into modernisation programs. The ultimate challenge for any state, to adopt current RMA, is the process of internalisation of new technological innovations. He went on to note: "To implement an IT-RMA for Indonesia, two important questions should be raised: First, who would be key drivers for defense transformation embracing IT-RMA? Second, how do we escape

[the] legacies of a system, especially within a military organization, which would hinder the adoption of a disruptive innovation?"

"In dealing with the first question, we are struggling to find a defense system integrator which should deal with our military industrial complex to move it closer to an IT-RMA. The integrator's main responsibility would be to create an integrated architecture for our future force. The integrator could reside at the Ministry of Defense or in the National Development Planning Agency (*Bappenas*) and use this position to incorporate strategic industries in defense modernization efforts. The integrator should be able, for example, to find ways of maximizing business innovations and the 'Revolution of Business Affairs'. If this can be achieved, our industries could become one of the key drivers in initiating an IT-RMA."

He concluded: "If we want to modernize our military, we must critically examine all the legacies of systems which hinder the creation of our future digitalized force. We must initiate our own RMA not only to adapt the latest advances in military technology but also to increase the consistency between military modernization processes for the 21st century, and our national defense conceptions at all levels of strategy."

-Defense & Foreign Affairs Special Analysis, April 10, 2008

Australia and the NPT: New Directions?

In current Australian nuclear policy terms, immediate prospects for change could be encapsulated in the phrase "back to the future". When the centre-left Labor Government, led by Prime Minister Kevin Rudd, came to power in the November 24, 2007, election, Australia's approach to global nuclear weapons proliferation had been both stable and clear for a decade. However, even before the defeat of the centre-right Liberal-led Coalition Government, things had begun to change.

In August 2007, then Prime Minister John Howard made it clear that his government had shifted ground by agreeing, in principle, to supply uranium to India, following an approach from his counterpart, Manmohan Singh.⁴ Certainly, several pre-conditions were attached to the offer, including a full Safeguard Agreement with the International Atomic Energy Agency (IAEA), Nuclear Suppliers Group approval of dual use nuclear technologies to India's civil program and a completed "123" agreement between India and the United States.⁵

Without the successful completion of the US-India Civil Nuclear Cooperation Initiative (CNCI), Australia would not be bound by former Prime Minister Howard's initially positive response. However, US-India negotiations languished, as a range of disputes between New Delhi and Washington combined with the Singh Government's internal issues, resulting in domestic political opposition of the deal from the left leaning parties within the governing coalition. The CNCI deal remains incomplete at the time of writing.

⁴ India's known uranium reserves are currently insufficient to support its planned civil nuclear expansion program.

⁵ A "123" agreement refers to Section 123 of the United States Atomic Energy Act, 1954 entitled "Cooperation With Other Nations". It establishes an agreement for cooperation as a prerequisite for nuclear deals between the US and any other nation.

In 2008, with a new Australian Government in Canberra, all this appears irrelevant. The fact is that India is not a Nuclear Non-Proliferation Treaty (NPT) signatory and, as Australia's new Minister for Foreign Affairs Stephen Smith has made clear, this rules it out as a recipient of Australia's uranium. The question then arises whether, should the CNCI finally be resolved and passed and ratified by both the US and India, Australia would reconsider its non-supply position. The fact that Australia may not work to obstruct the CNCI in the Nuclear Suppliers Group is a long way from assuming that Prime Minister Rudd's Government will eventually reach a decision to supply uranium to India. By the same token, India is just as far away from any pragmatic move towards signing the NPT, especially while any chance remains to salvage its US, *de facto* NPT option.

The broader context of these issues is the new Australian Government's return to "middle power" nuclear non-proliferation activism, within an explicitly United Nations framework. Echoes from an earlier era of multilateralist nuclear policy, with an eye on regional stability for national security, are growing louder as the new government settles in.

All of these adjustments are to be expected as Australia's changed political reality releases new policy potentials and options across the full spectrum of government, and not least in the foreign policy sphere. While Australia will not (at least in the short-term) continue its national conversation on the pros and cons of a nuclear power generation industry at home, Prime Minister Rudd has ensured that uranium exports can and will continue to grow.

The Australian Labor Party's (ALP) "three mines policy" was skilfully buried at its National Conference in April 2007, although by a wafer-slim margin. Meanwhile, Anglo-Australian resource company BHP-Billiton has been preparing to quadruple uranium output from its Olympic Dam mine in South Australia, a project which will result in this single mine accounting for 20 percent of global uranium production. The sheer scale of the project in terms of the value of uranium exports has proven simply too large for the ALP to ignore.⁶

In summary, two of the three Australian uranium policy pillars remain viable and will grow in strength and relevance in Australia's foreign policy development:

- a return to independently conceived nuclear non-proliferation activism across the globe; and
- even more closely safeguarded uranium exports.

The third pillar, domestic nuclear energy generation, will, for now, stay on a distant back-burner. Even so, as Australia engages the world in the practicalities of achieving new greenhouse gas emission targets, it is not beyond imagining that it will re-visit the nuclear energy option.

**-Dr. Chris Hubbard⁷,
FDI Associate**

⁶ This fact has caused policy problems for the ALP South Australian Government and the increased calls for renewable power generation.

⁷ Dr Hubbard is a Senior Lecture in Politics and International Relations at Curtin University of Technology, Perth, Australia.

The Strategic-Tactical Relationship

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 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 from all the major maritime nations had perished from the scourge.⁸

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 minimise 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 recognise that, to some extent, for example, "logistics [in the broadest sense of support] is strategy". Just as the accretion of activities at squad level determines outcomes at a theatre, 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 emphasising the tactical-strategic interface.

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 because of the lack of cohesion or structure between national policy and battlefield practice. This applies to more than merely the US, although

⁸ See, for example, Bown, 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.

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 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 stabilisation 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.
For want of a battle the kingdom was lost.
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 recognised that in the longer-term, the mere extraction "with honour" of US — and coincidentally, Coalition — forces from Iraq has merely turned the theatre over to the Iranian clerics, who remain undefeated and with renewed vigour 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-theatre 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 2007,⁹ 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.¹⁰

Despite later US Defense Department attempts to minimise the results, and thereby minimise 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 armoured 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,¹¹ which had been highlighted by independent analysis of ISSA through 2007 and 2008.

⁹ See: Bodansky, Yossef: "Washington's Deal With Iran"; *Defense & Foreign Affairs Strategic Policy*, 1-2008.

¹⁰ For further background, see: *Defense & Foreign Affairs Special Analysis*, June 19, 2007: "Iranians, 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".

¹¹ 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.

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 already-available 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 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 reports.

US Marine Corps-authorized 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 anthropomorphic 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-armouring 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.¹² 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,¹³ 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 prioritise in-theatre 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

¹² 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.

¹³ 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.

made by BAE Systems,¹⁴ 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.

The study also noted that there was 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 defence forces to consider the vital rôle 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?

**-Gregory R. Copley, Director & Chairman of
the Research Committee**

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¹⁴ BAE Systems in 2007 acquired Armor Holdings, and now produces MRAP and other vehicles under both the BAE and Armor Holdings brands.