



Institute of Defence and Strategic Studies



Future Systems Directorate

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CONTEMPORARY CONFLICT

[Countering Afghanistan's Insurgency: No Quick Fixes](#)

International Crisis Group – 2 November 2006

Fierce battles rage in southern Afghanistan, insurgent attacks in the east creep towards the provinces surrounding Kabul and a new campaign of terrorist violence targets urban centres. The country's democratic government is not immediately threatened but action is needed now. This includes putting more international forces into the battle zones but insurgencies are never beaten by military means alone, and there are no quick fixes. Diplomatic pressure on Pakistan is needed, and the government of President Karzai must show political will to respond to internal discontent with serious efforts to attack corruption, work with the elected National Assembly and extend the rule of law by ending the culture of impunity. Afghanistan needs a renewed, long-term effort to build an effective, fair government that provides real security to its people.

[The Future of Lebanon](#)

Foreign Affairs – November 2006

Hezbollah's July 12 raid into Israel, backed by Iran, was intended to entangle Israel in a limited skirmish on its northern border and a drawn-out prisoner exchange at a time when Iran was facing mounting pressure over its nuclear program. Israel, backed by the United States, responded with a large-scale war meant to deliver a knockout blow to Hezbollah and thereby remove the missile threat to northern Israel, weaken Iran in any upcoming showdown, and eliminate what the United States considers a major opponent in the war on terrorism. Washington also hoped to give a boost to the Lebanese government, which it considered a potential democratic success story.

[Beijing's Safari: China's Move into Africa and Its Implications for Aid, Development, and Governance](#)

Carnegie Endowment for International Peace – November 2006

China's economic and cultural relationship with Africa provokes serious questions in the West about international aid, human rights and energy security. On the eve of the Forum on China-Africa Cooperation (FOCAC) in Beijing this November 3-5, how should Western nations view China's burgeoning relationship with Africa, and what does it suggest about China's new approach to global diplomacy? In a new Carnegie Policy Outlook, *Beijing's Safari: China's Move into Africa and Its Implications for Aid, Development, and Governance*, Carnegie Visiting Scholar Joshua Kurlantzick argues that Beijing has quickly become a major donor and investor across Africa, and has savvily used multilateral forums like FOCAC to cultivate African elites. As a result, China now rivals the United States, France, and international financial institutions for

influence on the continent. Chinese loans and grants to African nations, which now reach nearly \$3 billion, have become much more enticing than condition-laden aid from international institutions. Beijing also has wooed African nations with aid for infrastructure, a ban on export tariffs for the poorest nations, and its status as a market for African goods and services.

COUNTER-TERRORISM

[Incoming Fire: Sniper-Detection Systems Support Counter-Insurgency Operations](#)

Jane's International Defence Review – 26 October 2006

When it comes to detecting and locating snipers, purists will argue that technology will never be able to compete with the 'Mk I' eyeball, but with industry consistently improving on existing products, boundaries are constantly being pushed further back. Industry's goal is systems capable of detection, location and engagement of fire sources to defeat threats such as small-arms fire, rocket-propelled grenades (RPGs), anti-tank guided missiles, direct-fired mortars and manportable air-defence systems, all in sufficient time to allow automatic and man-in-the-loop response options. Acoustic and radar-based systems continue to dominate the detection market. Acoustic systems - 'passive' detection solutions reliant on microphones - are concentrated on the identification of muzzle blast from a weapon, and shockwaves and disturbance of air as rounds travel towards a target.

[Special Operations Forces and Counter-Terrorism](#)

IISS Strategic Comments Volume 12 Issue 7 - August 2006

The Pentagon has continued to stress the importance of Special Operations Forces (SOF) as a principal counter-terrorism asset and devoted a rising share of the US defence budget to these capabilities. By the end of the 2006 fiscal year, US SOF are expected to number 52,846 – the strength of three or four infantry divisions. Special Operations Command's (SOCOM) baseline budget has increased by 81% since 2001, and for fiscal-year 2006 will total \$6.6 billion. Over the next five years, the Pentagon plans to increase its personnel by more than 13,000 (15%), and to add \$9bn to SOCOM's budget.

DEFENCE INDUSTRY

[Boeing Airborne Laser Team Rolls Out Modified Aircraft and Prepares for Flight Tests](#)

Space War – 30 October 2006

Boeing, along with industry teammates and the U.S. Missile Defense Agency, rolled out the Airborne Laser (ABL) aircraft today from a modification facility in Wichita, Kan., during a ceremony marking major program achievements on several fronts. Boeing presented the aircraft to a crowd of hundreds of government customers, industry partners and Boeing employees gathered at its Integrated Defense Systems facilities in Wichita.

[US Industry Forecasts Long Decline in DoD's Buying Power](#)

Jane's Defence Weekly – 27 October 2006

The buying power of the US Department of Defense (DoD) will decline by USD92 billion over the next 10 years, according to a US defence industry consensus forecast. The DoD budget in Fiscal Year 2007 (FY07) is USD565.6 billion, which includes USD130 billion in supplemental spending. After adjusting for inflation, the DoD's raw spending power is expected to decline by about USD80 billion over the next five years before stabilising for five years after FY12, according to the 'DoD Top-Line Forecast' presented on 18 October at the Government and Electronics Industry Association's (GEIA's) 2006 Vision Conference.

DEFENCE TECHNOLOGY

[Boeing to Begin Ground Testing of X-48B Blended Wing Body Concept](#)

Space Daily – 30 October 2006

In cooperation with NASA and the U.S. Air Force Research Laboratory, Boeing Phantom Works soon will begin ground testing of its X-48B Blended Wing Body (BWB) concept in preparation for flight testing early next year. The X-48B ground and flight testing will take place at NASA's Dryden Flight Research Center at Edwards Air Force Base in California, where two high-fidelity 21-foot wingspan prototypes have been delivered. The prototypes were produced to explore and validate the structural, aerodynamic and operational advantages of the BWB concept. They were designated the "X-48B" by the U.S. Air Force based on its interest in the design's potential as a future military aircraft.

[Breakthrough Could Lead to New Warhead Technologies](#)

Space War – 30 October 2006

An Air Force Research Laboratory Munitions Directorate science and engineering team has made a significant breakthrough in its hypersonic computational research, which could lead to new warhead technologies. Funded by the Air Force Office of Scientific Research here, the team is studying the aerodynamic characteristics of projectiles that deform at hypersonic speeds at sea level conditions, which is a high-speed flight regime not commonly studied.

[Defense Department Fails to Capture Available Technologies](#)

National Defense Magazine – November 2006

In the race to secure the latest and greatest technologies from the private sector and university labs, the Pentagon often comes up short, experts contend. The fault stems, not surprisingly, from beltway politics and the Pentagon's intransigent procurement bureaucracy. As the government's biggest spender, the Pentagon is a natural magnet for technology entrepreneurs. In recent years, the Defense Department has actively courted businesses and academia to come forward with innovative technologies that it needs urgently on the frontlines, such as bomb neutralizers, protective gear for troops and lightweight truck armor.

[Camouflage Wrap Useful in Combat](#)

National Defense Magazine – November 2006

Camo Form, made by McNett Corp., of Bellingham, Wash., is a self-clinging camouflage wrap that can be used to disguise almost anything, said a company vice president, Tanya Brooks. "You can wrap it around all kinds of stuff — weapons, scopes, binoculars, flashlights knife handles and sheaths, ammunition clips, you name it." The wrap conceals, insulates against heat and sound, reduces glare and increases grip, she said. It contains no adhesive, so it sticks to itself and not to the gear. It comes in the new Army and Marine digital camouflage patterns, as well as the standard woodland and desert patterns.

[Disappear Into Thin Air? Scientists Take Step Toward Invisibility](#)

Christian Science Monitor – 20 October 2006

Flip a switch and make something disappear? It's been the stuff of science fiction for decades. Now, two Duke University scientists and their colleagues have built the world's first device to render an object invisible. At least, it's invisible to microwaves. But researchers say the work demonstrates that, in principle, objects could be made to disappear from radar, cameras, and other detection devices. The trick? A new class of engineered substances called metamaterials.

M80 Stiletto

Time Best Inventions 2006

The Stiletto, a Twin M hull vessel, is 80 ft in length with a 40 ft beam providing a rectangular deck area equivalent to a conventional displacement craft 160 ft in length. The vessel's draft fully loaded is 3 ft and is designed for a speed of 50-60 kts. Its superior performance is based on M Ship Co.'s proprietary, globally patented technology, recapturing the bow wave using its energy to create an air cushion for more efficient planing. M Ship Co. was responsible for the design and construction of the vessel made solely of carbon fiber for reduced weight and increased stiffness, the largest vessel ever built in the U.S. of this advanced material. It will be delivered to the Office of Force Transformation to establish scalability of the M hull technology.

ENERGY SECURITY

Important Advancement in Unraveling Mysteries of Fusion Energy

Terra Daily – 30 October 2006

Unraveling one of most grandiose and heady problems in physics -- the creation of controlled fusion energy -- is still decades away. But thanks to research done recently on a smaller, less grandiose scale at the Nevada Terawatt Facility at the University of Nevada, Reno and in the University's College of Science, an important step has been made in the understanding of some fundamental processes required to achieve fusion energy. And it all came thanks to work done on the shoulders of Z-pinches that are more "midget" in stature than the "giant" lasers at national laboratories that can generate up to 40 trillion watts of x-ray power. The Z-pinch is a type of plasma confinement system that uses a fast electrical current in the plasma to generate a magnetic field. "Shots" of fast, 100-nanosecond pulses exceeding 20 million amps are fired through tungsten wires on the order of tens of microns, at the Sandia National Laboratory Z-pinch.

Norway and Russia Eye Arctic Energy

Jane's Foreign Report – 26 October 2006

The Arctic Ocean may contain 25 per cent of the world's undiscovered energy resources, according to Norwegian authorities and the US Geological Survey. In response, the government in Oslo has pronounced the development of its high north region as their main strategic priority. Kjetil Skogrand, state secretary at the Ministry of Foreign Affairs, says: "The global demand for energy is growing, and the instability in the Middle East has fuelled an interest for new areas where to find energy." However, the shift to the Arctic region will also move control of the resources out of Europe's comfort zone and into an area within Russia's sphere of influence. The development of the region is therefore of major strategic interest to Europe and also a potential source of both confrontation and possible

co-operation with Moscow. How this relationship develops will be crucial in the character of future energy supplies to Europe and even the US.

MILITARY OPERATIONS

[USAF Predators Come of Age in Iraq and Afghanistan as Reaper Waits in the Wings](#)

Jane's International Defence Review – 26 October 2006

The General Atomics-Aeronautical Systems Inc (GA-ASI) Predator has already become the first unmanned aerial vehicle (UAV) to be adopted on a large scale by the US Air Force (USAF), the first operational UAV to be armed and the first to fire weapons in combat, and the first system to permit precision strike missions to be controlled from anywhere on the planet. From July 2005 to June 2006, the USAF's Predators participated in more than 242 separate raids; engaged 132 troops in contact-force protection actions; fired 59 Hellfire missiles; surveyed 18,490 targets; escorted four convoys; and flew 2,073 sorties for more than 33,833 flying hours. Meanwhile, the MQ-9A Reaper (formerly known as Predator B) is well under way. It is not just a bigger Predator. It is not only a different aircraft but does a different job. It is aimed directly against time-sensitive, fleeting targets, and Reaper squadrons will be attack squadrons. In short, the USAF wants an aircraft that can perform all the steps in its attack doctrine - find, fix, track, target, engage and assess - with no outside support except its datalink, and to move through those steps with a speed that matches that of the target.

[ACC Declares IOC for Small Diameter Bomb](#)

Air Force Link – 5 October 2006

ACC Commander Gen. Ronald Keys declared initial operational capability for the GBU-39/B Small Diameter Bomb Oct. 2. The IOC announcement comes six months ahead of schedule, only weeks after it was initially delivered to the warfighter in early September for Air and Space Expeditionary Force 3/4. Boeing, the GBU-39B manufacturer, describes the bomb as "the next generation of low-cost and low-collateral damage precision strike weapons for ... employment from fighters, bombers and unmanned aerial vehicles," on their Web site at <http://www.boeing.com>. The F-15E Strike Eagle is the only aircraft currently equipped to carry the SDB. However, future potential platforms include the F-16 Fighting Falcon, B-1 Lancer, B-2 Spirit, F-22A Raptor and F-35 Lightning II.

NUCLEAR PROLIFERATION

[How North Korea's Diplomacy May Win Out](#)

Time Asia – 31 October 2006

North Korea's surprise decision to return to the suspended six-party talks over its nascent nuclear program may be the first positive glimmer from the Korean peninsula in nearly a year, but any celebration by the U.S. or its allies would be way too premature. The multilateral negotiations have been replete in the past with false starts and dashed hopes. And it's not clear that all six parties — North Korea, South Korea, Russia, China, Japan and the U.S — are on the same page. Diplomats from China, North Korea and the U.S. announced the agreement Tuesday after informal talks in Beijing, and it came only a day after the top American general in South Korea warned that Kim Jong Il would likely conduct further nuclear and missile tests before the end of the year. Christopher Hill, the chief U.S. envoy to North Korea, told reporters in Beijing that talks could resume "in November or possibly December," and that Pyongyang had reaffirmed its commitment to a preliminary agreement that had been reached last September, shortly before the talks fizzled when the U.S. cracked down on illegal North Korean bank accounts in the Chinese city of Macau.

[Making Uranium While the Sun Shines](#)

The Economist – 5 October 2006

WHEN it comes to throwing dust into the eyes of competitors, and rosewater over a favourite, the Iranians are world-beaters. On October 3rd, as the five permanent members of the UN Security Council steeled themselves to think about imposing sanctions on Iran for failing to suspend its uranium-enrichment programme, the Iranians proposed, out of the blue, that one of the five, France, lead a consortium to enrich uranium on Iranian soil. In Iranian theory, such a scheme would allay the suspicions, shared by America, the European Union, Israel and many others, that Iran plans to use enrichment technology to make bombs. In practice, distrust of Iran's intentions runs far too deep for such a scheme to work.

NON-CONVENTIONAL THREAT

[New Bird Flu Threat](#)

Time Asia – 31 October 2006

Avian flu surveillance is hard, dirty, unpleasant work—and no one does it better than Dr. Guan Yi and his team at the University of Hong Kong (HKU) and Shantou University in Guangdong province, China. Every day, Guan's technicians scour live-animal markets in cities throughout southern China, taking throat and rectal swabs and blood samples from chickens, ducks and geese that

will later end up as someone's dinner. The samples are taken back to the labs in Shantou and Hong Kong, where they are analyzed and catalogued. Guan's team has tested tens of thousands of birds over the years, and their work, often done in conjunction with Guan's mentor Robert Webster at St. Jude Children's Research Hospital in Memphis, has mapped the spread and evolution of the H5N1 virus.