



Institute of Defence and Strategic Studies



Future Systems Directorate

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## **CONTEMPORARY CONFLICT**

### [Palestinians, Israel and the Quartet: Pulling Back from the Brink](#)

*International Crisis Group – 13 June 2006*

Throughout years of uprising and Israeli military actions, siege of West Bank cities and President Arafat's de facto house arrest, it was hard to imagine the situation getting worse for Palestinians. It has. On all fronts – Palestinian/Palestinian, Palestinian/Israeli and Palestinian/ international – prevailing dynamics are leading to a dangerous breakdown. Subjected to the cumulative effects of a military occupation in its 40th year and now what is effectively an international sanctions regime, the Hamas-led Palestinian Authority (PA) government cannot pay salaries or deliver basic services. Diplomacy is frozen, with scant prospect of thaw – and none at all of breakthrough. And Hamas's electoral victory and the reactions it provoked among Fatah loyalists have intensified chaos and brought the nation near civil war.

## **Counter-Terrorism**

### [Suitcase Bombs: Separating Fact from Fiction](#)

*National Defense Magazine – July 2006*

Is a nuclear warhead small enough to fit in a suitcase fact or Hollywood fiction? Ambassador Linton Brooks, head of the National Nuclear Security Administration, said during a trip to Russia his counterparts there were kind enough to show him models of suitcase bombs that were small enough to be carried by one person. "You'd have to be strong, but you could carry it," he told military reporters. And if the Soviet Union's designers could make such a thing, U.S. engineers could undoubtedly do the same, he said. Harkening to the adage that "close" only counts in horseshoes, hand grenades and nuclear bombs, Brooks said the real threat is a group of terrorists sitting in their basement, constructing a large, crudely made nuclear bomb and transporting in the back of a rental truck or aircraft. They don't have to get too close to their target, or make a sophisticated bomb, for it to be effective, he said.

### [Irregular Warfare Underscores Equipment Shortcomings](#)

*National Defense Magazine – July 2006*

While U.S. military commanders in the Middle East generally are satisfied by Pentagon efforts to move needed technologies to the front lines, much remains to be done. This is the assertion of Army Maj. Gen. Lloyd Austin III, chief of staff of U.S. Central Command, who added that technologies to counter improvised explosive devices are at the top of his wish list. He identified other needed technology advances, such as managing the electronic spectrum, accelerating

linguist training, upgrading sensors so their “unblinking eyes” can provide full-motion video to fighters on the ground, developing data-fusion systems that can improve tactical intelligence, advancing automated security systems to minimize the number of troops required for base defense, and addressing the need for compact mobile command posts.

## **DEFENCE INDUSTRY**

### [Boeing Working on New Large UAV](#)

*Jane's Defence Weekly – 5 July 2006*

Boeing and a team of partners have been working for more than two years on a large, hydrogen-fuelled, high-altitude, long-endurance (HALE) unmanned aerial vehicle (UAV), according to George Muellner, president of advanced systems for the company's Integrated Defense Systems unit. "We are almost ready to build a full-scale prototype and could take a decision in the next six months," he said. The project is a candidate for an advanced concept technology demonstration (ACTD) programme. The new UAV would have a 10-day endurance, which Muellner said will "gain the majority of benefits in fleet size". The 10-day endurance makes it possible to maintain non-stop coverage at a substantial range with two vehicles. It would be similar in size to Boeing's 61 m-span Condor UAV, built in the 1980s. The major thrusts of the new programme have been to develop lightweight insulated liquid hydrogen (LH2) tankage - work that Boeing has been carrying out under contract to the US Air Force Research Laboratory - and an LH2-fuelled propulsion system.

### [Finland Moves to Create 'Network-Enabled Defence'](#)

*Jane's Defence Weekly – 12 July 2006*

The Finnish Defence Forces (FDF) have selected Siemens and Juniper Networks to create a 'next-generation' backbone communications network. The two companies have been contracted to create a network that will integrate the data and voice communications for reconnaissance, surveillance and military systems. Finland will spend EUR800 million (USD961 million) by 2012 to create what the FDF has dubbed a network-enabled defence (NED) and plans to replace all legacy networked communications systems by 2010. This latest contract calls for the use of Juniper Networks M320 and M10i routers to serve as the backbone of the network, which will enable the delivery of IP-based services and provide greater robustness and flexibility. Siemens Osakeyhtiö will also supply Dorado Software's Redcell network and service configuration suite of products.

## US Military Demands for Satellites Skyrockets

*Jane's Defence Weekly – 12 July 2006*

The US military will fuel a quadrupling of commercial satellite service revenues over a 10-year period, according to a recently released market survey report. The study, by NSR, a consultancy based in Cambridge, Massachusetts, projected that global annual government and military purchases of commercial satellite bandwidth will surge from USD1 billion in 2003 to USD4.8 billion in 2012. Total revenues from government and military customers over a decade will equal USD25 billion, the report said. Jose del Rosario, a senior analyst at NSR and author of the report, said the needs of the US Department of Defense (DoD) will be the driver of the projected revenue growth.

## UK Looks to Introduce Reconnaissance UUV

*Jane's Navy International – 5 July 2006*

The UK is moving ahead with plans to procure an unmanned underwater vehicle (UUV) with a mine countermeasures (MCM) reconnaissance (Recce) capability to enter Royal Navy (RN) service from 2009. Industry observers expect the programme to cover the acquisition of between two and four vehicles, plus associated control and ancillary systems and provision of contractor logistic support for a minimum of five years. The primary role of the vehicles will be the execution of MCM reconnaissance operations, hydrographic surveys and environmental monitoring in support of other RN operations; it will have a secondary role in support of search and salvage operations.

## Global Military Spending Hits \$1.12 Trillion

*Reuters – 12 June 2006*

U.S. spending in Iraq and Afghanistan helped push up global 2005 military expenditure by 3.5 percent to \$1.12 trillion, a research body said on Monday. Several countries, including Saudi Arabia and Russia, benefited from the rise in prices for minerals and fossil fuels to boost their military spending, the Stockholm International Peace Research Institute (SIPRI) said in its latest yearbook. "The USA is responsible for 48 percent of the world total, distantly followed by the UK, France, Japan and China with 4 to 5 percent each," the Swedish government-funded institute added. It said U.S. spending was behind about 80 percent of the gain in 2005.

## **DEFENCE TECHNOLOGY**

### [US Seeks to Switch Body Armour](#)

*Jane's Defence Weekly – 5 July 2005*

The US Army is looking to replace its Interceptor Body Armour (IBA) with a new individual armour system that would increase a soldier's manoeuvrability and flexibility.

In May, the service began a market-research effort, issuing a formal request for information from potential suppliers. In that solicitation, the army said it was studying options for a next-generation body armour system that would "reduce weight, improve comfort, facilitate fighting load carriage and improve weight distribution of ballistic and fighting load components".

### [Pentagon Set Its Sights on Social Networking Websites](#)

*New Scientist Tech – 9 June 2006*

*New Scientist* has discovered that Pentagon's National Security Agency, which specialises in eavesdropping and code-breaking, is funding research into the mass harvesting of the information that people post about themselves on social networks. And it could harness advances in internet technology - specifically the forthcoming "semantic web" championed by the web standards organisation W3C - to combine data from social networking websites with details such as banking, retail and property records, allowing the NSA to build extensive, all-embracing personal profiles of individuals.

### [Bomb Disposal Teams Deliver Blunt Talk on Robots](#)

*National Defense Magazine – July 2006*

Every day in Iraq, explosive ordnance disposal teams crisscross the country in a mission to disarm hundreds of roadside bombs, booby traps and cars laden with explosives. It's difficult, hot and dangerous work. But it also saves lives. To help the teams with their mission, the Defense Department sped into theater three kinds of commercial-off-the shelf, lightweight robots designed to lessen their exposure to improvised explosive devices. Five EOD specialists who served in Iraq recently had a chance to address the robot manufacturers, and tell them in sometimes brutally honest terms, what they liked and didn't like about the systems, and describe the often deadly hazards they faced daily. "They most definitely saved people's lives," Navy Aviation Ordnanceman 1st Class Bryan Bymer said of the robots, at an Institute for Defense and Government Advancement conference. His team responded to 500 calls from April to October 2005 and rendered 328 IEDs safe. They used two of the robots, the Talon, manufactured by Foster-Miller Inc. of Waltham, Mass., and the PackBot, designed by iRobot Corp. of Burlington, Mass. Bymer described a hectic pace with four or five calls per day in areas surrounded by insurgents. Because of

these circumstances, “time on target” is crucial, Bymer and the other specialists said.

### [Next-Generation Robots: Bigger and Better?](#)

*National Defense Magazine – July 2006*

The exploits of bomb-sniffing robots in Iraq and Afghanistan have solidified their role as useful combat tools, but the technology needs to be pushed much further, say robot designers and engineers. The military services currently operate nearly 4,000 battlefield robots — mostly to help detect concealed explosives, search buildings and clear caves. The next generation of robots, however, could do much more, says John Bares, director of the Carnegie Mellon National Robotics Engineering Center in Pittsburgh, Pa. The center recently unveiled a sophisticated robotic truck that would be way too big for explosive detection or cave work, but could take over reconnaissance duties in dangerous areas where commanders may not want to expose human scouts.

### [Snipers Cannot Hide From Laser Sensors](#)

*National Defense Magazine – July 2006*

Until recently, the only way to detect snipers was after a shot had been fired. A new laser sensor can detect shooters before they pull the trigger, and can provide information on the shooter’s location. The Mirage, a hand-held binocular device provided by the San Diego-based company Torrey Pines Logic Inc., sends out a defocused, eye-safe laser up to 1.2 kilometers. The laser bounces off all objects in view, but when it hits the layered optics of a gun scope or other similar devices, it sends back an image in real-time that highlights the exact location of the shooter or observer.

### [Sensor-Fusion Software Technology Replacing Traditional Security Systems](#)

*National Defense Magazine – July 2006*

As more and more security cameras are being installed around the globe, companies are developing software solutions and other technologies that increasingly advance the intelligence of such monitoring systems. While analysts contend that cameras do not necessarily prevent crimes, industry experts say that making them smarter will allow security specialists to be more proactive in stopping wrongdoers. Closed-circuit television systems first appeared in the early 1960s. Today, they are ubiquitous. Though the exact number of deployed cameras is unknown, estimates show that in the United Kingdom — the world’s leading user of video surveillance — there are as many as four million cameras in operation.

### [On Space Station, Droids Get a Workout](#)

*Christian Science Monitor— 11 July 2006*

Cue the John Williams theme and roll the vanishing intro - Obi-Wan Kenobi's Jedi-training droids have arrived on the International Space Station (ISS). Or at least David Miller's versions have arrived. The free-floating spheres are set to test new concepts for "smart" satellites. Able to fly in precision formation, the robots may one day hold the key to building everything from huge space telescopes that can peer deeply into the universe to constellations of small, cheap satellites that can monitor changes on Earth. The shuttle Discovery last week brought the second of three droids that are undergoing experiments as they arrive.

## **MILITARY OPERATIONS**

### [Navy's Smallest Fighting Ships Prove Littoral Warfare Concepts](#)

*National Defense Magazine – June 2006*

The Navy's smallest fighting ships — Cyclone-class patrol boats — are blazing the way for a future fleet of littoral combat ships. Little Creek is slated to receive as many as 22 LCSs in coming decades, according to base spokesman Scott Mohr. But until the LCS ships arrive, these 180-foot vessels may be one of the Navy's most useful assets for littoral warfare, officials say.

### [Surveillance Drone Operators Find Ways to Outsmart Enemy](#)

*National Defense Magazine – July 2006*

A burgeoning fleet of unmanned aircraft is among the Army's key weapons against Iraq's insurgency. But the technology alone is not enough to gain an edge over this enemy, experts say. While not a tactical panacea, these unmanned platforms are providing an unprecedented degree of situational awareness. Tactical surveillance drones — particularly those with high endurance and long-range sensors — can be valuable as information-warfare weapons. But to really benefit from the technology, operators must not only be proficient at piloting the aircraft, they also need to be deft at developing tactics on the fly.

### [Pilots Showcase New Optical Landing System](#)

*US DoD News – 30 June 2006*

During World War II, pilots landing their Corsair fighter planes on the deck of a ship in the tossing ocean relied on the crew to signal them in with arm gestures. Today, pilots still require a little help when landing on the bucking deck of a ship in the middle of the ocean; however, now they can rely on an optical landing system to help ensure a safe landing. One such system was recently installed at

le Shima and will ensure Harrier pilots have a safe place to practice day and night landings prior to landing on a ship, said Master Sgt. Jay Mossier, the 1st Marine Aircraft Wing airfield services chief. The system had been used on the now decommissioned amphibious assault ship USS Belleau Wood.

## **NUCLEAR PROLIFERATION**

### [Axis of Evil Survivors Play by the Same Book](#)

*SpaceWar News - 9 July 2006*

Hours after North Korea defiantly shot seven missiles into the sea last week, Iran said it was postponing talks in Brussels on its nuclear program for fear of hit squads. Rewind to January. Tehran announced it would resume uranium enrichment, ripping up a previous deal, just two months after Pyongyang suspended negotiations on its own nuclear program. North Korea and Iran, the two survivors of the "axis of evil" denounced by US President George W. Bush in 2002, have turned cycles of delays and provocations into a diplomatic art form.

### [Singapore to Improve Defences Against Ballistic Missiles](#)

*SpaceWar News - 3 July 2006*

Singapore will improve its air defence systems as it lies within the range of ballistic missiles possessed by an increasing number of countries, its defence minister said in remarks published Saturday. "We are inside the range rings of more and more countries that have missiles of various kinds, so we have to take that into account when we design our future air defence systems -- our radars, our missiles, our air defence fighters," Teo Chee Hean said in an interview with the Straits Times. "We don't expect that they will be a direct threat to us. But the fact of the matter is that we are now within their range rings when, prior to that, we were not," he said without naming any countries.