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## **A Time Bomb for Global Trade: Maritime-related Terrorism in an Age of Weapons of Mass Destruction.**

**By Michael Richardson**

THE FULL REPORT. This report is EMBARGOED. It is not to be published or broadcast before 8pm Singapore time (noon London/7am New York/Washington) on Wednesday 25 February, 2004.

### **Terrorists & Shipping**

The world has not experienced a major terrorist attack using ships or containers – at least not yet. But it is clear that terrorists can see the potential of using the maritime trading system to conceal weapons or agents for attack purposes or to provide funding or support for their operations. Terrorists have also used small, high-speed craft, packed with conventional explosives several times in recent years to cause serious damage to, and deaths on, much larger vessels.

Documents in Arabic seized from one of Osama bin Laden’s senior aides six years ago show how Al-Qaeda evidently intended to use cargo shipping containers packed with sesame seeds to smuggle highly radioactive material to the US.

(ABC news of the US 11 September 2003, “How safe are our borders,” by Brian Ross, Rhonda Schwartz and David Scott.)

### **Trojan Box**

The fear that terrorists could exploit the container transport system was confirmed barely a month after the Al-Qaeda hijackers crashed civilian airliners into the World Trade Centre twin towers and the Pentagon.

In October 2001, authorities in the southern Italian port of Gioia Tauro discovered an unusually well-equipped and neatly dressed stowaway locked inside a shipping container. It was furnished as a makeshift home with a bed, water, supplies for a long journey and a bucket for a toilet. Italian police named the stowaway as Rizik Amid Farid, 43, and said he was born in Egypt but carried a Canadian passport. Unlike most stowaways, he was smartly dressed, clean-shaven and rested as he emerged.

He was found to be carrying two mobile phones, a satellite phone, a laptop computer, several cameras, batteries and, ominously given recent events in the US, airport security passes and an airline mechanic's certificate valid for four major American airports. He was carrying a return airline ticket from Montreal, Canada, to Egypt via Rome. Italian investigators said that the air ticket could be an "insurance policy" enabling him to reach Canada by air in case he was discovered in the container but managed to escape.

(OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003, pages 7 & 8; The Atlantic Monthly, September 2003, "Anarchy at sea" by William Langewiesche page 64; The Times (UK) 25 October 2001, "Terrorist in a box" by Richard Own and Daniel McGrory; Financial Times.com 21 February 2002, "Agencies fear extent of Al-Qaeda's sea network" by Andrea Felsted and Mark Odell.)

Gioia Tauro is a leading trans-shipment hub for cargo in the Mediterranean. The container fitted out as a makeshift home had been loaded in Port Said, Egypt. Had the stowaway not been trying to widen ventilation holes when workers in Gioia Tauro were nearby, the box may well have passed unhindered to its final destination in Canada via Rotterdam. After he was discovered, Farid was investigated by Italian prosecutors who suspected that he was an Al-Qaeda operative. He was charged with illegal entry into Italy and detained. But a court released him on bail and he disappeared before further information about him and the purpose of his unorthodox means of travel could be gathered.

(The Economist, Special report on Container Trade, April 6, 2002)

Since then, the suspected use of cargo containers by stowaway-terrorists has been a matter of official concern in the US and Europe. Senator Bob Graham, chairman of the US Senate Intelligence Committee has said that he knew of 25 "extremists" who sneaked onto ships bound for the US, hid in the cargo containers during the voyage, and then left the vessels when they docked and disappeared into population.

(Reuters 20 May 2002, "Other groups, with Al-Qaeda, said to threaten US," by Niala Boodhoo.)

### The Rag Trade

More recently, in August 2003, reports emerged that Al-Qaeda's director of global operations Khalid Shaikh Mohammed was involved in a plot to gain regular access

to containers used to ship garments from Karachi to New York harbor before he was captured in Pakistan in March 2003 in a raid directed by the US Central Intelligence Agency, the CIA. At the time, US officials said that Mohammad, the alleged mastermind of the attacks on New York and Washington in September 2001, was planning new attacks on America but would not elaborate.

(New York Daily News, Friday August 22, 2003, by Greg B Smith.)

Days before he was arrested, Khalid Shaikh Mohammed met in Karachi with Uzair Paracha, the son of the owner of a company in New York that imports clothing. Al-Qaeda's number 3 man, after Osama bin Laden himself and his deputy Ayman al-Zawahri, reportedly offered to invest US\$200,000 dollars in the firm, International Merchandise Group, in exchange for access to IMG's shipping containers bound for Port Newark in the New York harbor complex. IMG is an export-import company that ships clothing in containers to the US for clients, including Kmart.

(North America Regulations Shipper August 22, 2003, posted in Containerization International Online, on the same date; CNN, 9 August 2003, "Pakistani in US aided al Qaeda," by Phil Hirschhorn; and the Jang Group of Newspapers, Pakistan, 6 August 2003, "Uzair Paracha – FBI's new scapegoat.")

Jang reported from New York that "authorities do not believe the company that employed Paracha is connected to al-Qaeda or terrorism-related activities. They are also not certain if he was actually plotting attacks in the US or abroad, one source said.

"However, the source also said, authorities do believe Paracha may have been closely connected to Khalid Shaikh Mohammed, Usama bin Laden's senior operational commander. Mohammed, who was captured in Pakistan last spring, is suspected of having organised the September 11 (2001) terrorist attacks. US authorities also believe he smuggled or attempted to smuggle Al Qaeda operatives into the United States even after the attacks.

"Meanwhile, Paracha's father, who also works in the shipping industry, is in US custody as well. Saifullah Paracha runs a clothing export business in Pakistan that ships goods to the United States.")

Details of the alleged plot came to light in the case brought by the US government against Uzair Paracha, the 23 year-old son of IMG's co-owner, Saifullah Paracha. Paracha Jr. has been detained by the US Federal Bureau of Investigation, the FBI, since being picked up on March the 31<sup>st</sup> at the IMG office in New York, shortly after he arrived from Pakistan. He was charged in a criminal complaint filed on 8 August 2003 with acting as cover for one of Khalid Shaikh Mohammed's associates, an Al-Qaeda operative identified in press reports as Majid Khan although neither Mohammed or Khan was identified in the indictment.

(US Department of Justice, Federal Bureau of Investigation, press release 8 October, 2003, "US indicts Pakistani man on charges of providing support to Al Qaeda.

The release states that "Paracha is accused of agreeing to help an Al-Qaeda associate obtain documents that would allow him to re-enter the United States and

conduct financial transactions with the associate. To accomplish this, Paracha also agreed to pose as the associated while in the United States, and to take other actions to assist the Al Qaeda associate.”)

US Attorney General John Ashcroft said that the case involving Uzair Paracha “demonstrates that Al Qaeda will go to great lengths to enlist support here in the United States. Our efforts are focused on identifying and dismantling those rings of support on which our terrorist enemies seek to rely.”

(Department of Justice presse release, 8 August 2003, “Statement of Attorney General Ashcroft regarding the filing of charges against Pakistani man for agreeing to assist an Al-Qaeda operative.”)

Court papers filed by the FBI in the case against Paracha say that he met with two unnamed Al-Qaeda operatives in Karachi at least twice in February and that Paracha was told they “wanted to invest approximately US\$200,000” in IMG. From the time of the arrests, US Federal authorities monitored containers carrying IMG cargo to New York harbor but no weapons or destructive devices are known to have been found.

(New York Daily News, Friday August 22, 2003, by Greg B Smith; and FBI criminal complaint filed before Judge Andrew J. Peck, Southern District of New York, on 8 August, 2003.

The complaint states that: “Paracha is a citizen of the Pakistan with lawful permanent resident status in the United States. Paracha arrived in the United States most recently in mid-February 2003, and had been staying with relatives in Brooklyn.

“Paracha is employed by a business in New York, which also has an office in Karachi, Pakistan. Approximately two weeks before Paracha left Pakistan for the United States, Paracha met an individual whom he learned wanted Paracha to perform tasks for him in the United States. Paracha met this individual (hereinafter “CC-1”) at the Karachi office of the business by which Paracha is employed. CC-1 was with another person (hereinafter “Subject-1”).

“Paracha was advised that CC-1 and Subject-1 wanted to invest approximately US\$200,000 in the business for which Paracha worked in Karachi. Paracha was advised not to ask any questions about the money because CC-1 and Subject-1 were supporters of Usama bin Laden. Paracha believed the funds to be Al-Qaeda money, and CC-1 and Subject-1 wanted to keep the funds liquid and to be able to retrieve them on short notice. Paracha believed that if Paracha did not perform the tasks that CC-1 was requesting him to undertake in the United States, then CC-1 and Subject-1 might not invest the money in the business.”)

The US government filed a 5-count indictment of Paracha on 8 October 2003 in which he was accused of “accepting up to US\$200,000 of al Qaeda funds to be held as an investment in a business by which Paracha was employed, until such time as the funds were needed by al Qaeda.”

(United States of America v Uzair Paracha, Defendant, indictment 8 October, 2003.)

The indictment filed by US Attorney James Comey expanded the charges from one in the initial complaint to five: conspiracy to provide material support or resources to a foreign terrorist organisation; providing and attempting to provide material support to a foreign terrorist organisation; conspiracy to make or receive a contribution of funds, goods, or services, to and for the benefit of Al-Qaeda; making or receiving a contribution of funds, goods, or services to, and for the benefit of, Al-Qaeda; and identification document fraud.

(CNN, 9 October 2003, "Pakistani faces more terror charges," by Ronni Berke.)

Although neither Khalid Shaikh Mohammed or Majid Khan were named as the two Al-Qaeda operatives in the US government's criminal complaint against Uzair Paracha on 8 August, 2003, Paracha's lawyer Anthony Ricco was quoted as saying that information from Mohammed to his US interrogators was behind the indictment. What Mohammed revealed led indirectly to Paracha's arrest.

(CBS news, 8 August 2003, "Qaeda Suspect Charged in New York, and CNN, 9 August 2003, "Pakistani in US aided al Qaeda," by Phil Hirschhorn.)

A US government source confirmed that the other Al-Qaeda operative implicated in the conspiracy is Majid Khan, a former Baltimore resident who authorities say conducted surveillance for the terrorist group in the US. Among other things, Paracha allegedly help Khan obtain travel documents and posed as Khan when telephoning the US Immigration and Naturalization Service. FBI agents said that in Paracha's residence they found Khan's Maryland driver's license, his Social Security card, his Bank of America ATM card, and a key to his post office box.

Lawyers for Paracha, who has pleaded not guilty, said that his defence will hinge on their ability to have Khalid Shaikh Mohammed, the top Al-Qaeda captive in US custody, brought to court for questioning. They also want to question Majid Khan and Paracha's father. Judge Sidney Stein has given the defence six weeks from Paracha's arraignment in court on 14 October 2003 to present their motion. Paracha's father has been detained at the US airbase in Baghram, Afghanistan, since July. The detention locations of Mohammed and Khan outside the US have not been publicly disclosed by US authorities.

Paracha's lawyers predict that his case is headed for the same legal standoff that caused an indefinite delay in the trial of Zacarias Moussaoui, the only US prosecution so far that is directly related to the terrorist attacks in the US in September 2001. Federal prosecutors are likely to oppose access to Khalid Shaikh Mohammed, as they have in the Moussaoui case, on national security grounds. Paracha's lawyers argue that without such access, Paracha's constitutional right to call available witnesses of his own choosing will be breached and he won't get a fair trial.

(CNN 14 October, 2003, “Lawyers predict another Moussaoui case,” by Phil Hirschhorn.)

### Tamil Tiger Shipping

The Liberation Tigers of Tamil Eelam, the LTTE, provide a case study of how terrorist groups can use ships. Indeed, some analysts believe that the Tamil Tigers and Al-Qaeda have learned from each other. They say that the Sri Lankan guerillas trained in Al-Qaeda camps in Afghanistan while the attack on the USS Cole in October 2000 and the French tanker Limburg two years later, both near Yemen, copied the LTTE’ strikes against shipping. The Sri Lankan government lost at least a dozen naval vessels, both in harbour and at sea, during its long war with the Tamil Tigers. They used high-speed boats filled with explosives to ram the naval vessels. There have also been reports that members of Jemaah Islamiyah, a Southeast Asian terrorist group with close ties to Al-Qaeda, have been trained in the seaborne guerrilla tactics developed by the LTTE.

(BBC, The World Today, 22 January 2003, interview with Tanner Campbell, Vice-President of the Maritime Intelligence Group in Washington, DC; Peace Forum Essays April 2003, Terrorist Sea Strategy: the Kamikaze Approach, by Vijay Sakhuja, maritime security analyst and research scholar at Jawaharlal Nehru University, New Delhi.)

Founded in 1976, the LTTE is the most powerful group among the Tamil minority in a country with a Sinhalese majority. It used both overt and illegal methods to raise funds, get arms, ammunition and explosives and publicise its cause in fighting since 1983 for a separate state for Tamils in the northeast of the island. The LTTE frequently used suicide bombers in their operations against the Sri Lankan government and have exploited commercial maritime shipping for years, both to make money and bring in arms, ammunition, and other war-related material for attacks in Sri Lanka. Before Norway brokered a ceasefire between the government and the Tamil Tigers that took effect in February 2002, the LTTE had developed into a prototype terrorist organization with a potentially global reach.

(Page 9, Liberation Tigers of Tamil Eelam’s (LTTE) International Organization and Operations – a Preliminary Analysis by Peter Chalk, published March 17, 2000, as Commentary No. 77, a Canadian Security Intelligence Service publication. It notes, however, that use of an article in the Commentary series does not imply CSIS authentication of the information or CSIS endorsement of the author’s views.

Writing well over 18 months before the devastating Al-Qaeda attacks on New York and Washington, Chalk, then an analyst for the Rand Corporation in Washington, wrote prophetically that the LTTE’s “international support network has ensured that the group is at the cutting edge of contemporary terrorist lethality and sophistication, possibly providing the prototype for the type of insurgent organization that the world is likely to witness in the next decade.”)

Unlike Al-Qaeda, the Tamil Tigers did not strike extensively outside their home base but had the capability to do so. The LTTE is the only group to have successfully assassinated two national leaders – Rajiv Gandhi of India in 1991 and Ranasinghe Premadasa of Sri Lanka in 1993. Both were well-orchestrated suicide strikes that evaded the tight security cordons of the Indian and Sri Lankan intelligence services. Sri Lanka's current President Chandrika Kumaratunga narrowly survived a Tamil Tiger suicide bomb attack in 1999. She precipitated a political crisis in November 2003 that threatened to undermine the ceasefire after she accused the government of Prime Minister Ranil Wikremesinghe of jeopardising national security by conceding too much to the LTTE.

(Asian Wall Street Journal, November 5, 2003 SPELL OUT. Financial Times and International Herald Tribune, Thursday 6 November)

Up to August 1998, the LTTE had conducted 155 battlefield and civilian suicide attacks, compared to the 50 carried out by all other groups worldwide, including Hamas and Hizbollah in the Middle East, the Kurdish Worker's Party (PKK), in Turkey and the Sikh Babbar Khalsa in South Asia.

(Liberation Tigers of Tamil Eelam's (LTTE) International Organization and Operations – a Preliminary Analysis by Peter Chalk, published March 17, 2000, as Commentary No. 77, a Canadian Security Intelligence Service publication, page 9.)

The key to the LTTE's fighting strength was its international support network. It collected money from large Tamil communities in North America, Europe and Australia. There is also some evidence, though it is not definitive, that the LTTE officially sanctioned drugs smuggling as well as arms smuggling to support its independence struggle.

(Liberation Tigers of Tamil Eelam's (LTTE) International Organization and Operations – a Preliminary Analysis by Peter Chalk, published March 17, 2000, as Commentary No. 77, a Canadian Security Intelligence Service publication, pages 5 and 6.)

Since the mid-1980's, the Tamil Tigers have controlled an extensive and profitable network of freight forwarders and up to a dozen or so cargo ships. The latter were not registered in Sri Lanka. To help disguise their ownership, they flew Panamanian, Honduran or Liberian flags. Indeed, the heart of the LTTE's military procurement was a highly secretive shipping network which, by 1999, included at least ten freighters, all equipped with sophisticated radar and Inmarsat communication technology. Most of the time, the Tamil Tiger ships made money carrying legitimate cargo like timber, tea, rice, cement and fertilizer. But in some cases, the Tamil Tigers are reported to have carried weapons and ammunition for other paying terrorist groups, among them the Harkat-ul-Mujahideen of Pakistan which is a member of the Al-Qaeda-linked International Islamic Front. And when needed, Tamil Tiger ships and traders played a vital role in supplying explosives, weapons, ammunition and other war-related material to the LTTE in Sri Lanka.

(OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003, pages 14 and 15.)

In one of the largest such shipments, in August 1994, an LTTE freighter, the Swene, loaded 60 tons of RDX and TNT bought from a factory in Ukraine. The transaction was arranged through a Tamil Tiger front company in Dhaka that had produced a forged end-user certificate showing the Bangladesh armed forces as the approved recipient. The shipment was landed on the northeast Sri Lankan coast controlled by the LTTE and transferred to jungle bases. Some of the explosives, between 300 and 400 kilograms, were used in the massive truck-bomb attack against the Central Bank building in Colombo in January 1996 that killed 60 people and injured as many as 1,500.

(Liberation Tigers of Tamil Eelam's (LTTE) International Organization and Operations – a Preliminary Analysis by Peter Chalk, published March 17, 2000, as Commentary No. 77, a Canadian Security Intelligence Service publication, page 8.)

On May 23, 1997, a Greek-registered freighter, the Stillus Limassul, left the port Beira in Mozambique for Sri Lanka carrying 32,400 81mm mortar bombs intended for the Sri Lankan army. The deal, worth US\$3 million, had been arranged between officials of the Sri Lankan Defence Ministry and the state-owned Zimbabwe Defence Industries and shipped by train to Beira. But the Sri Lankan military never received the munitions. This was the result of a well-organized and well-concealed “sting” operation by the LTTE that deeply embarrassed the Sri Lankan government at the time.

The Tamil Tigers claimed that on July 11 they had hijacked the Stillus Limassul while it was on its way to Colombo. But subsequent investigations revealed that the Stillus Limassul was not among the vessels on Lloyds International Shipping Register but was, in fact, owned by the LTTE itself. Further enquiries uncovered a paper trail that led to Ben Tsoi, an Israeli arms dealer who had arranged the mortar supply and apparently been bribed by the Tamil Tigers to let one of their own freighters collect the consignment. Tsoi's company, LBJ Military Supplies, reportedly persuaded some officials of the Zimbabwe Defence Industries to provide false information to the authorities in Sri Lanka that the shipment had been loaded, as scheduled, in Beira.

LBJ Military Supplies then informed the Sri Lankan government that the munitions were en route but via Walvis Bay in Namibia and Madagascar. This gave the LTTE time to complete the sting. By the time Colombo learned the full extent of what had happened, the mortars had been unloaded and transhipped by smaller Tamil Tiger vessels to LTTE jungle bases in Sri Lanka. Within weeks, the weapons were being used by the Tamil Tigers to cause serious setbacks to government troops.

(The Sunday Times, June 27, 1997, “Mortar Ship Mystery Still Baffles Defense Officials.” The Sunday Times, August 3, 1997, “Arms Ship Mystery Deepens, Possibility of LTTE Ploy: Zimbabwe Official Here for Probe.” The New York Times, March 7,



1998, “The Arms Trade.” International Herald Tribune, March 10, 1998, “A Tamil Tiger Primer on International Arms Bazaar.”)

The operating environment for the LTTE outside Sri Lanka has changed since the late 1990’s, especially since the US and other countries launched their global campaign against terrorism following the attacks against America in September, 2001. Even if fighting resumes in Sri Lanka’s civil war, the LTTE will find it more difficult than before to rebuild its international support and supply lines. Since 1997, a number of countries that were important parts of the network, including the US, Canada, Britain, India and Australia, have outlawed the Tamil Tigers and sought to disrupt their funding and operations. These countries have made it clear they will only lift the terrorist proscription if the LTTE agrees to negotiated autonomy.

And many of the arms markets and pipelines that the Tamil Tigers once used, among them Pakistan-Afghanistan and Southeast Asia, are now being actively suppressed by governments anxious to support the global war on terrorism and protect themselves from attack.

#### Al-Qaeda’s “navy”

A terrorist alert in October 2003 triggered yet another search in the worldwide hunt for one of the ships and some of the crew that have been widely reported to be part of Al-Qaeda’s undercover shipping line. Following an intelligence tipoff – said to be from the US - that some of the crew were linked to Al-Qaeda, New Zealand authorities raided a Greek-owned cargo ship, the Athena, in Lyttelton, the port of Christchurch in the south island of New Zealand. The freighter regularly carries logs, fertiliser and cement between New Zealand and Asia. It had arrived in Lyttelton on 2 October and was due to leave for South Korea two days later when customs officials gave it an unusually thorough inspection, including checks on the identities of all crew and a full search of the vessel. Nothing of concern was found, according to a customs spokeswoman.

(The New Zealand Herald, 31 October 2003, “Ship searched after Al Qaeda tip.”)

When the 17,000-ton Athena and its cargo of logs reached the port of Kunsan in on the southwest coast of South Korea on 30 October it was checked again by Korean authorities who said they searched for weapons and forged passports but found nothing unusual on board. Some 37,000 US troops are based in South Korea and there are many American military facilities in Kunsan, including an airbase.

(AFP, 30 October, 2003, “South Korea on alert for possible Al Qaeda ship,” and The New Zealand Herald, 1 November 2003, “No Al Qaeda clues on ship.”)

There have been many such searches for Al-Qaeda-connected ships and crew since the terrorist attacks on the US in September 2001 using hijacked planes made the US and many other countries aware of just how vulnerable the largely unregulated and secretive global maritime industry is to abuse by terrorists. These concerns were

underscored on 21 December, just a few weeks after the attacks on New York and Washington, when British anti-terrorist officers and naval commandos intercepted and boarded the Nisha, an Indian-owned bulk carrier, in the English Channel. The vessel was carrying raw sugar to a refinery on the River Thames, near London's Canary Wharf financial and residential district. British authorities said they were acting on an intelligence tip-off that the ship was carrying "terrorist material". But three days of searching found nothing suspicious and the Nisha was allowed to dock and unload at the Thames terminal in early January.

(The Observer, 23 December 2001, "The Armada of Terror," by Martin Bright, Paul Harris and Nick Paton Walsh; and Financial Times, 21 February 2002, "Agencies fear extent of Al Qaeda's sea network," by Andrea Felsted and Mark Odell.)

A year later it was reported that US intelligence officials had identified approximately 15 cargo ships around the world that they believed were controlled by Al-Qaeda or could be used by the terrorist network to ferry operatives, bombs, money or commodities over the high seas. American spy agencies were monitoring some of the suspicious ships by satellites or surveillance planes and with the help of allied navies or informants among overseas port managers, shipping agents, crew manning supervisors and seafarers unions. But US authorities sometimes lost track of the vessels, which were continually given new fictitious names, repainted or re-registered using invented corporate owners.

Tracking suspected terrorist vessels is difficult. Intelligence agents have to watch the world's 120,000 merchant ships, many of which hide their ownership under layers of corporate subterfuge – a longstanding practice in a trade that thrives on lax regulation and anonymity. Intelligence officers also must collate the names and mariner's licence numbers of tens of thousands of seamen from around the world, a sizable percentage of whom carry fake documents and use false names.

(Washington Post, 31 December 2002, "15 freighters believed to be linked to Al-Qaeda," by John Mintz.

"This industry is a shadowy underworld," a senior US government official was quoted as saying in the article. "After 9/11, we suddenly learned how little we understood about commercial shipping. You can't swing a dead cat in the shipping business without hitting somebody with phony papers.")

US officials and security analysts fear that Al-Qaeda could use any ships it owns, leases or controls not just to make money from carrying commercial cargo, but for group logistics or in terrorist operations to ferry bombs, operatives, money and materials. Smuggling a weapon of mass destruction – the ultimate doomsday scenario – could be one approach. Another might be to blow up an oil tanker, an action that might wreak devastation on petroleum ports. Or a large vessel could be used to destroy a major bridge or block a shipping channel.

(The Christian Science Monitor, 15 May 2003, "How Al Qaeda might strike the US by sea," by Peter Grier and Faye Bowers; and CBS news, 31 December 2002, "Bin Laden's Navy.")

The first reports of Al-Qaeda-linked ships emerged in late 2001. Several shipping companies were owned or managed by people with ties to the Al-Qaeda network, US intelligence officials were quoted as saying at the time. America's CIA and the Norwegian security service, with the help of international shipping registries, had combined to try to identify the suspect ships. While some were large ocean-going vessels, others were small nondescript freighters, Arab sailing boats, known as dhows, and yachts that were used to carry supplies, weapons and people around the waters of Southwest Asia, North Africa and the Middle East.

(CNN, 7 December 2001, "Navy ships searching for Al Qaeda in Arabian Sea," by David Ensor; and The Observer, 23 December 2001, "The Armada of Terror," by Martin Bright, Paul Harris and Nick Paton Walsh.)

One Al-Qaeda vessel delivered the explosives that its operatives used to bomb two US embassies in East Africa in August 1998, killing 224 people. Nearly all were Africans. But 12 Americans were among the dead. US investigators say they have evidence that Al-Qaeda was buying ships at least as early as 1994. Wahid El-Hage, who was sentenced to life imprisonment on terrorism conspiracy charges in 2001 for his role in the bombing of the US embassies in Nairobi, Kenya, and Dar es Salaam, Tanzania, bought a tramp freighter, the Jennifer, in April 1994. The ship appears to have continued carrying legitimate cargoes around the Red Sea before it reportedly sank off the coast of Oman in 2000. The wreck of the ship, by then renamed Sky 1, was never found.

(Washington Post, 31 December 2002, "15 freighters believed to be linked to Al-Qaeda," by John Mintz; and Financial Times, 21 February 2002, "Agencies fear extent of Al Qaeda's sea network," by Andrea Felsted and Mark Odell.)

### Al-Qaeda and Drugs

In December 2003, US and allied forces on patrol in the Persian Gulf tracked and boarded several dhow trading boats, confiscating three drug shipments worth more than \$US 15 million. US officials said that seven of the 45 crewmen detained had links to Al-Qaeda and the organisation was using drug smuggling to help finance its operations. The first shipment included nearly two metric tons of hashish, which is derived from the marihuana plant; the second, 67 kilograms of chemically-made methamphetamine stimulants; the third, 38 kilograms of heroin, although a much larger amount was believed to have been dumped overboard when the crew realised they were about to be searched.

Government officials and terrorism analysts have long believed that Al-Qaeda was getting funds through criminal enterprises, including the drug trade. Before the attacks on the US in September 2001, Al-Qaeda leader Osama bin Laden had been

sheltered in Afghanistan by the Taleban, which had clear links to the heroin trade through Afghanistan's opium poppy crops.

Ironically, since the US-led invasion of Afghanistan to get rid of Al-Qaeda and their Taleban allies, production of hashish, opium and the heroin refined from it, have risen sharply again, apparently under the protection of some regional warlords and their private armies whose support the US needs. About 3,400 metric tons of opium was produced in Afghanistan in 2002. The 2003 harvest was expected to be even greater: some 4,000 metric tons, accounting for approximately 75% of the world's supply. Iran and the Persian Gulf are major transit routes for drugs from Afghanistan to markets in Europe and the oil-rich Gulf states.

Smaller terrorist groups linked to Al-Qaeda, such as Ansar al-Islam in Iraq and Abu Sayyaf in the Philippines, also have been accused of involvement in the drug trade.

The seizures from three dhows in the Persian Gulf in December 2003 were described in some reports as the first hard evidence of Al-Qaeda's involvement in illicit drug smuggling. However, the US government had charged two Pakistan nationals and a US citizen in November 2002 with conspiring to exchange 600 kilograms of heroin and five metric tons of hashish for cash and four Stinger shoulder-fired anti-aircraft missiles. The US alleged that the defendants, who were arrested in Hong Kong, had admitted they intended to sell the missiles to Al-Qaeda forces in Afghanistan.

(Combined AFP, AP and Reuters report in Singapore's Straits Times, 22 December 2003, "Al-Qaeda boats with drugs seized."; BBC 19 December 2003, "US seizes Al-Qaeda drugs ship."; Financial Times 20 December 2003, "US Navy seizes Al-Qaeda smugglers dhow."; Newsweek 14 July 2003, "A deadly habit," by Ron Moreau and Sami Yousafzai.; US State Department 6 November 2002, "US arrests seven in two drugs-for-weapons deals.")

### Global Maritime Surveillance

Since September 2001, the US-maintained list of suspected Al-Qaeda ships has varied from a low of a dozen to a high of 50. Meanwhile, America and its allies have mounted one of the largest naval seahunts and shipping surveillance operations since World War II to track and, if necessary, inspect "ships of concern."

Shortly after the terrorist attacks on the US, NATO, the North Atlantic Treaty Organization that links the armed forces of America, Canada and European nations, including Britain, in the trans-Atlantic alliance, began naval and air patrols in the Mediterranean Sea to prevent possible terrorist activity on Europe's southern sea flank. The exercise is known as Operation Active Endeavour. Airborne Warning and Control Systems (AWACs) aircraft are involved. Some 36,000 merchant vessels have been monitored (as of 28 October 2003). Since the end of April, 2003, some of the vessels have been boarded to check that their cargo matched the items declared in their shipping

manifests. In March, 2003, NATO warships began escorting non-military ships travelling through the narrow Strait of Gibraltar to prevent possible terrorist attacks.

(Press statement issued by NATO's Regional Headquarters for Allied Forces Southern Europe, 17 November 2003, on Operation Active Endeavour, and an earlier release on 31 July, on Nato Ships Start Boarding Operations In Mediterranean.)

Similar patrol, search and escort activities have been carried out by the US and its allies in the Persian Gulf, the Red Sea and the Arabian Sea.

(US Navy newsite [www.news.navy.mil](http://www.news.navy.mil) , 26 November 2003, "NAVCENT Hosts Maritime Security Cooperation Conference," by Lt Joshua A. Frey.)

The US Pacific Command, based in Hawaii, wants to develop a surveillance arrangement, to be called a comprehensive Regional Maritime Security Program, for Pacific, Southeast Asian and perhaps Indian Ocean waters. The aim is to gain awareness of the maritime domain by extending and expanding knowledge about shipping and its status throughout region.

Such awareness is particularly important in Southeast Asia where the combination of overlapping jurisdictions, thousands of miles of coastlines, and a challenging environment provide a fertile area for terrorists, pirates and traffickers of drugs and humans to exploit. The US Pacific Fleet commander Admiral Walt Doran, working with other naval chiefs in the region, wants to address these problems in a Southeast Asia Maritime Security program. The US Pacific Command says that what is needed is an architecture with protocols that provides a clear and accurate tactical picture of the maritime domain, shares real time information and enables the authorities to counter illicit activities. The US Pacific Command said that Asia-Pacific militaries have expressed strong interest in the program and that it is working with the Pentagon and the State Department to make it a reality.

(Speech by Admiral Thomas Fargo, chief of the US Pacific Command, to the Homeland Security Conference in Hawaii, 21 November 2003.)

#### The Al-Qaeda/JI Connection

Al-Qaeda and its affiliates, including the Jemaah Islamiyah in Southeast Asia, have carried out or planned attacks on both military and commercial ships.

#### USS Cole

US officials blame Al-Qaeda - led by Osama bin Laden, who is of Yemeni origin - for the suicide attack in October 2000 against the American destroyer USS Cole and an earlier aborted plan to carry out a similar attack against another American destroyer, the USS The Sullivans, in January 2000 as it also refuelled in Aden harbour, Yemen. The

attack against The Sullivans failed when the suicide boat, overloaded with explosives, sank. It was salvaged and later used successfully against the Cole.

(US Department of Justice statement 15 May 2003, "Al Qaeda associates charged in attack on USS Cole"; BBC 15 May 2003, "Charges filed for USS Cole attack".)

The BBC reported that a total of 50 counts of various terrorist offenses were filed against two Yemeni fugitives, Jamal al-Badawi and Fahd al-Qusaa, who remain at large after escaping from a prison in Yemen with 10 others in April 2003. "Badawi and Qusaa are alleged to be longtime Al Qaeda terrorist associates who were trained in the Al-Qaeda terrorist camps in Afghanistan in the 1990s," US Attorney General John Ashcroft told a news conference.

The Department of Justice said that the indictment named bin Laden as an unindicted co-conspirator, saying that he had allegedly planned the attacks on the two US navy ships and later praised the suicide bombers. Bin Laden has been indicted by the US in connection with the 1998 bombings of two US embassies in East Africa that killed 250 people, including 12 Americans.)

The two terrorists who attacked the USS Cole used a modified dinghy packed with about 500 pounds of C-4 (Composite-4) explosives, nearly sinking one of the US navy's most sophisticated warships. The blast, which left a 40-foot hole in the side of the destroyer, killed 17 American sailors and wounded 40. It took more than 14 months and cost around US\$250 million to repair the ship.

(CNN 3 November 2000, "C-4 quantity may be clue in USS Cole bombing"; CBS 20 June 2001, "A claim for the Cole"; CBS 12 October 2001, "Chilling anniversary for USS Cole"; CBS 25 April 2002, "Homecoming for ship-shape Cole".)

### The Limburg

US officials say that the French-registered oil tanker, Limburg, carrying crude oil off the coast of Yemen, was crippled and set ablaze in October 2002 in another terrorist attack using an explosive-laden small boat that may have been remotely controlled. French investigators concurred with this conclusion. The blast ripped through the double-steel hull of the tanker. It stayed afloat and the fire was eventually put out. But one sailor drowned when the crew abandoned the flaming ship. Some 90,000 barrels of oil spilled into the Gulf of Aden.

The Limburg was under charter to the Malaysian state petroleum company, Petronas. It had loaded about 400,000 barrels of crude in Saudi Arabia, and was planning to load 1.5 million barrels more in Yemen to ship to an oil refinery in Malaysia, before the attack took place.

(Washington Post report in the International Herald Tribune, October 11, 2002, by Karl Vick, "Crew backs suspicions of attack on oil tanker"; CBS 11 October 2002, "Was tanker target of terrorist attack?"; Bloomberg 15 October 2002, "Yemen attack may have been remote-controlled bombing".)

The subsequent capture of a number of terrorist operatives in North Africa, the Persian Gulf and the Horn of Africa, as well as investigations into the attacks on the USS Cole and the Limburg, uncovered detailed training and planning procedures by Qaeda-linked terrorist networks specifically designed to target maritime interests. Although the arrest of some significant planners and operatives was seen as a setback to Al-Qaeda and its affiliates, the investigations revealed a terrorist network that is larger than previously thought and still capable of carrying out bombings and other attacks against maritime and other targets.

(Associated Press 25 November 2003, "US said to thwart terror attacks in Horn of Africa," by Chris Tomlinson; Singapore Straits Times 27 November 2003, "USS Cole bombing mastermind nabbed in Yemen"; Associated Press 26 November 2003, "Yemen pursuing second top Al-Qaeda figure after arrest of Cole attack mastermind"; The Asian Wall Street Journal, May 1, 2003, by Zahid Hussain, "Al Qaeda Leader is in Group of Six Men Arrested in Pakistan"; CBS 3 April 2002, "Bin Laden deputy profiled"; New York Times 18 November 2002, "Kuwait captures leader of tanker bombing".)

Al-Qaeda's former chief of naval operations, Abdul Rahim Mohammed Hussein Abda Al-Nasheri, captured in Yemen in November, 2002, has given investigators of the US Central Intelligence Agency, the CIA, information that reinforces concerns about plans for terrorist attacks against shipping. Al-Nasheri has reportedly admitted playing a key role in organising the attacks on the USS Cole and the Limburg. US officials have said that he gave telephone orders to the Cole bombers from the United Arab Emirates.

(US Department of Justice statement 15 May 2003, "Al-Qaeda associates charged in attack on USS Cole"; CBS 22 November 2002, "Suspected Qaeda chief cooperating".)

Al-Nasheri, nicknamed the Prince of the Sea, has reportedly confessed to planning attacks on shipping in the Strait of Gibraltar. Early in 2002, Al-Nashri sent a team of several Afghan-trained Saudis to Morocco to prepare for bomb-laden speedboat attacks on US and British warships as they passed through the Strait between the Mediterranean Sea and the Atlantic Ocean. The Moroccan intelligence service foiled the plot but a key operative escaped.

(New York Daily News, September 21, 2003, by Maki Becker with James Gordon Meek, "Terror lurks on high seas"; CBS 16 June 2002, "Bin Laden said behind Gibraltar plot".)

Al-Nasheri is also suspected of being behind plans to bomb US 5<sup>th</sup> Fleet Headquarters in Bahrain, a plot revealed in January 2002 by another top Al-Qaeda operative captured in Pakistan after he fled from Afghanistan. The 5<sup>th</sup> Fleet has responsibility for the Persian Gulf and its vital energy sealanes. It provides ships for the operations of the US Central Command, which was running the war effort against the Taliban and Al-Qaeda at the time.

Al-Nasheri - who is said to be a citizen of Saudi Arabia in his 30s – is described as a ruthless professional terrorist. He had been associated with bin Laden since they met in the 1980s when they both went to Afghanistan to fight in the Muslim holy war against Soviet forces. Moscow sent troops into Afghanistan in 1979. They were forced out a decade later after suffering heavy losses.

(CBS 22 November 2002, “Suspected Qaeda chief cooperating”; Fox News 23 November 2002, “US captures Al-Qaeda’s Persian Gulf chief.”)

The three citizens of Saudi Arabia captured in Morocco in May and June 2002 in a joint Moroccan-CIA operation reportedly told interrogators that they had escaped from Afghanistan and came to Morocco on a mission to use speedboats packed with explosives for suicide attacks on US and British warships in the Strait of Gibraltar. The Saudis were among a group of Al-Qaeda loyalists, estimated by Western officials to have numbered as many as several hundred, who slipped out of Afghanistan via neighboring Pakistan after US forces captured Kabul. The US began bombing Afghanistan on 7 October 2001, less than a month after the terrorist attacks on the US, and by the end of November most of the country was in the hands of US forces and their allies.

According to senior Moroccan officials, the three captured Saudis said that just before leaving Afghanistan the loyalists assembled were ordered by Al-Nasheri, who told the men he was carrying direct instructions from bin Laden, to disperse to whatever areas of the world they have previously operated from, including Asia, the Persian Gulf, Africa, Turkey and Europe. Bin Laden’s decree directed them to launch terrorist attacks once they had become established in familiar areas.

Although some of the loyalists received very general orders, others such as the three Saudis, two of whom were married to Moroccan women, were given specific targets. They were to go to Morocco and attack NATO ships. Britain has a naval repair and supply base in Gibraltar, just 12 miles from Morocco across the Strait of Gibraltar. The strait contains some of the busiest sealanes in the world, through which US navy ships routinely pass.

When captured, the Saudis had US\$10,000 between them in cash and had begun inquiring about the purchase of Zodiac speedboats. After acquiring the craft, a logistics team, experienced in explosives and weapons, would have readied them for the operation. The Moroccan officials said that the operation bore all the Al-Qaeda hallmarks of slow, careful planning. They also said that the three Saudis were not mere foot soldiers but were educated, ideologically formed and technically proficient in the mechanics of terror attacks. The three were each sentenced to 10 years in jail by a Moroccan court in February 2003 for plotting to attack Western warships.

(Washington Post 16 June 2002, “Arrests reveal Al-Qaeda plans”, by Peter Finn; CBS 16 June 2002, “Bin Laden said behind Gibraltar plot”; BBC 21 February 2003, “Saudis jailed for Al-Qaeda plot.”)



There are four major elements in Al-Nasheri's strategy and they may still be moving ahead. First, use of Zodiac-type speedboats loaded with explosives to attack US warships and other targets. Second, use of medium-size ships that can be blown up near other vessels, including passenger liners if warships become too difficult to approach. Third, use of private planes bought or stolen from flying clubs and small airports and loaded with explosives. Fourth, training underwater demolition teams to attack ships.

(Newsweek, January 27, 2003, by Christopher Dickey, January 27, 2003, "High-Seas Terrorism.")

Shortly after Al-Nasheri was captured in Yemen in November 2002, the FBI issued an alert that terrorists might try to attack shipping, possibly using scuba divers to put explosives on vessels.

(CBS News 22 November 2002, "Suspected Qaeda chief cooperating.")

In August 2003, the Department of Homeland Security, the US government agency charged with protecting America from terrorist attack, warned that international terrorist groups might be planning to strike from under water.

The Department's bulletin to ship owners, port managers and maritime police organisations said there were indications that terrorists planned to use scuba divers to hit US ships or ports. Although there was no firm evidence of an actual plot, "there is a body of information showing the desire to obtain such capability." The bulletin said that in the past two years there were numerous things had happened involving suspicious individuals possibly conducting surveillance of port facilities, cruise ship docks, naval bases, dams, bridges and power facilities in the US. There had also been law enforcement reporting of suspicious individuals asking questions to marine shops and schools about equipment and training. The bulletin asked boat and submersible equipment dealers to report any volume purchasing inquiries related to Swimmer Delivery Vehicles (SDVs) and Diver Propulsion Vehicles (DPVs). These are underwater motor-propelled sleds that divers use.

While there was no specific information indicating that a swimmer attack of any kind was being planned in the US, the Department said that "such targeting would be consistent with Al-Qaeda's stated objective to disrupt and undermine vital economic interests in this country and to cause mass casualties and panic."

(Cyber Diver News Network 26 August 2003, "Al-Qaeda plans scuba diver, one-man submarine attack," by Charles R. Smith.)

Anti-terrorist investigators worry that divers trained by Al-Qaeda or its affiliates could plant explosives on the hulls of ships, act as seagoing suicide bombers or sneak aboard vessels and commandeer them for attacks. CIA Director George Tenet told the US Senate Committee on Intelligence in February 2003 that Al-Qaeda was developing new means of striking, including the use of "underwater methods to attack maritime targets."

(Reuters 21 February 2003, "Iraq war could spur Al-Qaeda sea attacks in Gulf," by Stefano Ambrogi.)

Late in 2002, Dutch counter-terrorism agents investigating a possible Al-Qaeda recruitment cell grew interested in a scuba school because a man suspected of recruiting terrorists had become a certified diver and studied to be an instructor there. Iraq-born Kasim Ali was one of between 50 and 150 Muslim men who had taken classes in recent years with the same Tunisian instructor at the school in the city of Eindhoven, about 70 miles southeast of Amsterdam. Many were visiting from North Africa and the Middle East. Two of the world's busiest ports are in Rotterdam, Netherlands, and Antwerp, Belgium, each a short drive from Eindhoven.

Dutch and US investigators, working together on the case, learned that several of the students in the Eindhoven classes were suspected Islamic extremists. An Algerian who was certified at the school and later deported by the Dutch was arrested in France in November 2002 along with an accused terrorist who had escaped from a Dutch jail. A third man, believed to be a Libyan who studied diving in Eindhoven, is being held by authorities in a non-European country because of his ties to extremist violence.

There were also leads linking the diving students with the Al-Qaeda network operatives who were directed by Al-Nasheri to return from Afghanistan to Morocco on a maritime terrorism mission and later convicted in a Moroccan court of plotting attacks on US ships in the Strait of Gibraltar.

However, professional divers with military experience say that mounting a successful underwater attack against a ship or offshore installation would be difficult than attacking it with an explosive-laden boat. Underwater strikes require specialized equipment, training and explosive charges. They can be complicated by adverse currents, tides and visibility. With port police approval, a group of professional diving instructors simulated a clandestine underwater approach to a moored cargo ship in Rotterdam harbour. The dark waters and deafening engine noise made it difficult for these experienced divers to maneuver. A comparative amateur strapped with heavy explosives – and probably battling stress and fear – would have even more trouble.

(Los Angeles Times, "Fears persist of Al-Qaeda terrorist link to dive center," by Sebastian Rotella.)

Omar al-Faruq, Al-Qaeda's head of operations in Southeast Asia who was captured in Indonesia late in 2002 and handed over to the US, has told interrogators that he planned scuba attacks on US warships in Indonesia. The site chosen was the port of Surabaya, Indonesia's second largest city and the home of an important Indonesian naval base.

(The Washington Post 31 December 2002, “US fears terrorists at sea: tracking ships is difficult,” by John Mintz; CNN 23 October 2002, “Maritime terror attack alert,” by Maria Ressa.)

The Abu Sayyaf group in the Philippines – who, like the Jemaah Islamiyah, are known to have had links with Al-Qaeda - kidnapped a maintenance engineer from a holiday resort in the east Malaysian state of Sabah in 2000. On his release in June 2003, the engineer said that his kidnappers knew he was a diving instructor and wanted instruction. Meanwhile, the owner of a diving school near the Malaysian capital, Kuala Lumpur, raised concern about possible suicide-dive bombers when he said he knew of a number of ethnic Malays who wanted to learn about diving but were strangely uninterested in learning about decompression.

(The Economist 4 October 2003, “Peril on the sea.”)

The Singapore government has said that when it cracked down on the Jemaah Islamiyah network in the island-state starting in December 2001, it discovered that the group had made preliminary plans to prepare for suicide attacks on US warships visiting Singapore, as well as mount multiple ammonium nitrate truck bomb attacks against Western and Israeli diplomatic and other targets in Singapore, including naval bases used by the American military in Singapore.

The plans to attack US warships with explosive-laden small boats manned by foreign suicide bombers were developed from around the mid-1990s and were fairly well developed, although never activated. The plans included a detailed targeting map for a seaborne bomb attack using a small vessel against US ships travelling eastwards from Singapore’s Sembawang Wharf via Tekong island. The markings on the map identified a strategic “kill” zone where the channel was narrowest and where the ship would have had no room to avoid colliding with a suicide boat. It also took advantage of the geography of the area to hide the attack boat from radar and visual detection until the very last minute. The route and patrol schedule of Singapore’s Police Coast Guard in the area had also been monitored.

In early 2001, the plans were revived when two unidentified Middle-Easterners approached Faiz bin Abu Bakar Bafana, the Malaysian JI leader, for information on US military vessels in Singapore. Faiz then instructed members of the JI in Singapore to survey Sembawang Wharf and Changi Naval Base, both of which were being used by visiting American warships. They video-recorded what they observed and a copy of the video was later given to the Middle-Easterners in Kuala Lumpur.

(Singapore Government White Paper 7 January 2003 on “The Jemaah Islamiyah arrests and the threat of terrorism,” pages 13 and 27-30.)

The planning for the attack on the USS Cole in Yemen in October 2000 reportedly began in Malaysia. One of the key suspects - Tafi Muhammad Saleh bin Roshayd bin Attash, also known as Khallad - is said by US officials to have directed the

Cole attack with Al-Qaeda maritime commander Al-Nasheri. Attash was plotting another attack on a US ship visiting a Malaysian port in 2000. Less than a year later, Malaysian intelligence foiled a plan to attack a second US ship.

(CNN 23 October 2002, "Maritime terror attack alert," by Maria Ressa.)

Meanwhile, Attash has been arrested and is now in US custody. He was captured by Pakistani military-intelligence agents in April 2003 in Pakistan's southern port city, Karachi. Five other men were arrested with him, including a nephew of Khalid Shaikh Mohammed, Al-Qaeda's director of global operations and the alleged mastermind of the terrorist attacks on the US in September 2001, who had been captured in Pakistan in March 2003. Authorities also seized arms, ammunition, explosives, detonators, transmitters and timer switches.

(BBC News 1 May 2003, "Pakistan arrests USS Cole suspect.")

According to US officials, Attash is suspected of playing a role in the September 2001 attacks. He met two of the hijackers in the Malaysian capital, Kuala Lumpur, in January 2000. Those terrorists, Khalid al-Mihdhar and Nawaf al-Hazmi, were on the plane that crashed into the US Defence Department in Washington. Attash is believed to have paid for some of the pair's travel before the US attacks.

(Asian Wall Street Journal 1 May 2003, "Al-Qaeda leader is in group of six men arrested in Pakistan," by Zahid Hussain.)

Can Al-Qaeda and its affiliates, including JI, still launch major attacks?

Since the terrorist attacks on the US in 2001, many Al-Qaeda leaders have been captured and the organization's financial system, communications networks and training camps in Afghanistan disrupted. Over 3,000 organisers, operatives and supporters in more than 95 countries have been arrested or killed. US officials say that nearly two thirds of Al-Qaeda's senior leaders, operational managers and key facilitators have been captured or killed, while the rest are on the run.

(White House, Office of the Press Secretary, remarks by US National Security Advisor Dr Condoleezza Rice to the National Legal Center for the Public Interest, Waldorf Astoria Hotel, New York, October 30, 2003; and Indianapolis Star, November 14, 2003, "Anti-terror efforts working, FBI chief says," by Fred Kelly.

"Going into Afghanistan disrupted Al-Qaeda and took away their training grounds," FBI Director Robert Mueller told a press conference in Indianapolis.)

In Southeast Asia, Jemaah Islamiyah, too, has been hounded by tougher law enforcement and better intelligence sharing among countries in the region and between them and counterpart agencies in the US, Australia and elsewhere. Over 130 JI members have been arrested in five Southeast Asian countries since late 2001. Yet the JI - described by the Singapore minister in charge of internal security as "Al-Qaeda's closest

ally in Southeast Asia” - is said to be planning more terrorist attacks in the region. Both Al-Qaeda and the JI appear to have been able either to maintain an effective command and operational structure or to renew it in a different form.

(Speech by Admiral Thomas Fargo, chief of the US Pacific Command, to the Homeland Security Conference in Hawaii, 21 November 2003; Associated Press report from Jakarta, November 19, 2003, “Purported New Terror Chief in Indonesia Plotting Attacks; The New York Times, 22 November, 2003, “Officials Fear New Attacks by Militants in Southeast Asia,” by Raymond Bonner; speech by Australia’s Defence Minister Senator Robert Hill to the RUSI Triennial International Seminar, Canberra, 9 October, 2003, “Regional terrorism, global security and the defence of Australia;” and Speech by Singapore’s Minister for Home Affairs Wong Kan Seng at the inaugural Asia Pacific Homeland Summit and Exposition in Hawaii, 20 November, 2002.

“Many of those involved in the Bali bombings of October 2002 have been arrested and prosecuted,” Mr Wong said. “The Al-Qaeda’s closest ally in South East Asia, the Jemaah Islamiyah, or JI, terrorist organizations has been under pressure from security scrutiny and its regional networks have, in varying degrees, been disrupted. Its key leaders like Hambali have been arrested. Operations have been mounted against elements in the JI network in Cambodia, Thailand, Malaysia, Indonesia, Philippines, Singapore and even Australia.

“However, the terrorist threat remains. This is because the JI as an organization is only disrupted. It is by no means eliminated. What is the reason for the JI’s resilience? It is because the JI is capable of re-generating itself...both at the leadership as well as the working or operational level. We continue, therefore, not only to live in troubled times but to also expect that such troubled times are going to last for a long time.”)

Moreover, there is a web of relationships that link the various militant Muslim groups within Southeast Asia and also connect them to Al-Qaeda. These links were forged over the last two decades, starting with those Southeast Asian Muslims who went to Afghanistan in the 1980s to fight with other mujahidin (warriors) and who experienced firsthand the glory of jihad (holy war) and its eventual victory over the Soviet Union. These international connections give the Southeast Asian militants greater reach and resilience.

The militants include hardline elements in the separatist Moro Islamic Liberation Front (MILF) in the Philippines, and a small breakaway faction of Filipino Muslim separatists, the Abu Sayyaf group, which kidnaps for ransom. Al-Qaeda provided funds and training to the Abu Sayyaf and the much larger MILF through a network of front organisations and legitimate Muslim bodies. Al-Qaeda forged similar links with several militant Islamic groups in Indonesia in addition to the JI which has members spread over Southeast Asia. Extremist factions in the MILF have for years provided training grounds and protection on Mindanao island in the southern Philippines for JI members from elsewhere in the region. And they continue to do so, despite denials by MILF leaders.

(Singapore Government White Paper 7 January 2003 on “The Jemaah Islamiyah arrests and the threat of terrorism,” pages 3-5; Washington Post 17 November 2003, “Al-

Qaeda affiliate training Indonesians on Philippine island,” by Alan Sipress and Ellen Nakashima; The Straits Times, Singapore, 19 November 2003, “JI trained hundreds of men in Philippine camp,” by Luz Baguioro; AFP 30 November 2003, “Indonesian militants training Philippine rebels in the south: official.)

Al-Qaeda is regarded by Western and Asian officials as being less capable than before of striking at American embassies, military targets and landmarks that were the hallmarks of its campaign until the September 2001 attacks in the US. But the terrorist threat has evolved into a much broader, more diffuse phenomenon than previously, with a new strategy of attacks by loosely affiliated groups against highly vulnerable targets. Such strikes that are even more difficult to guard against. There is also deep concern in the US, Europe and Asia that they are facing more – not fewer – terrorist foes than before. The killing and capturing of Al-Qaeda leaders is failing to keep pace with the number of angry young Muslim men and women willing to participate in suicide attacks.

(Foreign Affairs, July/August 2003, “The Protean enemy: what’s next from Al-Qaeda” by Jessica Stern; The New York Times, 21 November, 2003, “Analysts See Terrorism Paradox: A Weaker Al Qaeda Despite Attacks,” by Douglas Jehl and Don van Natta Jr.)

Al-Qaeda’s hands-on leadership role in terrorist attacks has diminished since the campaign against international terrorism was intensified. But the organisation has successfully franchised its brand of synchronized, devastating violence and suicide bombing to homegrown terrorist groups across the world, posing a formidable new challenge to counterterrorism forces. This worries many governments.

Attacks in 2003 in Turkey, Indonesia, Morocco, Saudi Arabia, Chechnya and Iraq show that the smaller groups, most of whose leaders were trained in Al-Qaeda camps in Afghanistan, have fanned out, imbued with radical ideology and the means to create or revitalise local terrorist groups. The main link among the groups appears to be their shared experiences in the Al-Qaeda training camps in Afghanistan. As many as 20,000 people from 47 countries passed through the camps from 1996, when bin Laden returned to Afghanistan from Sudan, until the US-led invasion of Afghanistan in October 2001. The camps served as a place where fighters were trained and indoctrinated, keys to building the future network as they returned to their homelands. The camps were also a place to make religious and ideological contacts.

(The Washington Post, 21 November 2003, “Al Qaeda’s terror style spreading,” by Douglas Frah and Peter Finn.)

Militants who trained in Afghanistan have returned to Indonesia, Malaysia, the Philippines, Turkey, Morocco, Saudi Arabia, Turkey, Chechnya and other countries in Asia, Europe and the Middle East, possibly including Iraq. The US and Canada have also arrested men allegedly trained in the Afghan camps. Some Australians and Britons, too, have undergone the training. As extremists graduated, they either pledged their allegiance to bin Laden and Al-Qaeda or carried his message and inspiration back to

their home countries to initiate more localised jihad, or holy war, efforts. Those who were trained are now training the next generation of terrorists. The terrorist exodus from Afghanistan has created a diaspora of destruction that the world is today struggling to contain.

(Associated Press, 23 November 2003, "Post 9/11 Terror Attacks Stem from Afghan Training Camps.")

This religious and ideological bonding provides the glue for Al-Qaeda's international reach. Al-Qaeda-style terrorism is new and unique because it is global. There is a shared fanatical zealotry among these different extremists around the world.

(Newsweek, 1 December, 2003, "We Need to Get The Queen Bees," by Fareed Zakaria based on an interview with Singapore's Senior Minister Lee Kuan Yew.

Mr Lee made it clear that the world was facing a foe it could not negotiate with. "Many Europeans think they can finesse the problem, that if they don't upset Muslim countries and treat Muslims well, the terrorists won't target them," he said. "But look at Southeast Asia. Muslims have prospered here. But still, Muslim terrorism and militancy have infected them.

Mr Lee was critical of both sides of the Atlantic alliance on Iraq. "When America and Europe are divided, when Japan is hesitant, the extremists are emboldened and think they can win against a divided group. The terrorists' tactics for the time being are to hit only Americans, Jews and America's strong supporters, the British, the Italians, the Turks, warning the Japanese but leaving others alone. They intend to divide and conquer.")

Al-Qaeda as an ideology is now stronger than Al-Qaeda as an organization. As a result, terrorists influenced by Al-Qaeda launch more frequent attacks on varied targets, many of them so-called soft targets like synagogues, churches, hotels, nightclubs, banks and public transport. The presence of US, British, Australian and other foreign forces and agencies in Iraq is being used by extremist Muslim leaders rally their followers to jihad, or holy war, around the world. The very name Al-Qaeda has become shorthand for a larger jihad fed by the Iraq war and Israeli-Palestinian conflict.

The resurgent global menace leads critics to assert that the US-led military operations in Afghanistan and Iraq have boomeranged by scattering Al-Qaeda's forces, making them harder to detect, and inspiring like-minded extremists. Yet some US and European officials see signs of weakness as inexperienced terrorists turn to soft targets.

(The Los Angeles Times, 19 February, 2003, "Experts see major shift in Al Qaeda's strategy," by Sebastian Rotella and Richard C Paddock, and Stratfor Global Intelligence Analysis, 21 November, 2003, "Al Qaeda: The Whole Vs the Parts.")

The terrorist bombings in Turkey in November 2003, like earlier attacks in Southeast Asia, are part of the new pattern of international terrorism, with Al-Qaeda

using local groups as proxies in its global network of connections. Al-Qaeda is using local terrorist organizations to carry out attacks in Asia, Africa, the Middle East and parts of Europe such as Chechnya. They will continue to occur in those regions rather than Western Europe, North America and Australia because of heightened public awareness and officials safeguards in the latter areas as well as unprecedented sharing of intelligence.

(AFP news report, 21 November, 2003. "Turkey blasts linked to Asian terror: analysts"; East-West Center Wire, Honolulu, 21 November, 2003, "Leading Al Qaeda expert says Al Qaeda shifting targets, strategy."

The expert quoted in the East-West Center Wire is Rohan Gunaratna, author of "Inside Al Qaeda: Global Network of Terror" and associate professor at the Institute of Defense and Strategic Studies in Singapore. He warned prophetically in January 2003 that as Al-Qaeda decentralised still further in response to the US-led crackdown on its former bases of operation, it would rely increasingly on like-minded groups in Southeast Asia, South Asia, the Horn of Africa, the Middle East and the Caucasus to strike at its enemies, mainly Western targets in those areas and operations against Muslim rulers and regimes supporting the US-led war on terror. He said that a wider range of targets would be selected and mass casualty attacks would grow, especially suicide bombings of economic targets and population centres.

Gunaratna also wrote that the "hardening of land aviation targets will shift the threat to maritime targets, particularly to commercial shipping." He added that because of the difficulty of hijacking aircraft to ram them into targets, Al Qaeda would acquire and use hand-held surface-to-air missiles (SAMs). "If appropriate and immediate countermeasures are not taken to target the Al Qaeda shipping network," he said, "SAMs under Al Qaeda control held in the Pakistan-Kashmir-Afghanistan theatre, the Arabian Peninsula, and the Horn of Africa will find its way to East Asia and to Europe, and possibly even to North America."

-IDSS Commentaries, January 2003, Al-Qaeda's Trajectory in 2003, by Rohan Gunaratna.)

### Travel warnings

Governments around the world are concerned not only that Al-Qaeda and like-minded terrorist groups will strike more frequently, but that they may strike with more powerful weapons in new ways, including via the sea.

The US government issued a worldwide caution to its citizens on 21 November 2003, that it sees increasing indications of Al-Qaeda preparing to strike US interests abroad. "Al-Qaeda and its associated organizations have struck in the Middle East in Riyadh, Saudi Arabia, and in Europe in Istanbul, Turkey. We therefore assess that other geographic locations could be venues for the next round of attacks We expect Al-Qaida will strive for new attacks that will be more devastating than the September 11 (2001) attack, possibly involving nonconventional weapons such as chemical or biological agents. We also cannot rule out the potential for Al-Qaida to attempt a second



catastrophic attack within the US. Terrorist actions may include, but are not limited to, suicide operations, hijackings, bombings or kidnappings. These may also involve commercial aircraft and maritime interests...”

(Public announcement, US Department of State, Office of the Spokesman, Worldwide Caution, issued 21 November, 2003, to expire on 21 April, 2004)

On November 6, the US government issued a more specific geographical warning to remind US citizens of the continuing threat of anti-American violence, “including terrorist actions that may involve commercial aircraft and maritime interests, specifically in the Middle East, including the Red Sea, Persian Gulf, the Arabian Peninsula and North Africa.

(Public announcement, US Department of State, Office of the Spokesman, Middle East and North Africa, issued November 6, 2003, to expire on May 5, 2004.)

### The Political Economy of Terror

Al-Qaeda and affiliated terrorist organizations, including the Jemaah Islamiyah in Southeast Asia, have shown that they understand the role of major chokepoints in global seaborne trade by mounting or planning maritime attacks in the past few years. The results of two of the attacks close to Yemen, on the USS Cole in October 2000 and the French tanker Limburg in October 2002, were dramatic but largely localised. Insurance rates shot up and ships avoided the area.

Al-Qaeda also understands the political economy of terror. It aims for an ever more costly impact on the US, its allies and friends in the Middle East and elsewhere, and countries that support the US and British-led coalition in Iraq. The US government says that Al-Qaeda’s central focus on economic targets is consistent with its stated ideological goals and longstanding strategy, to undermine what the terrorists see as the backbone of US power – the economy and the critical transportation infrastructure at home and abroad that sustains it. Striking a prominent US target for economic and symbolic reasons would have immediate worldwide impact.

(Maritime Advisory (MARAD) issued on 23 October 2002 by the US Government’s National Infrastructure Protection Centre to operators of US flag and effective US-controlled vessels and other maritime interests.

The advisory to ship operators noted that an audio message from Osama bin Laden, taped on an undetermined date and broadcast by Al Jazeera on 6 October 2002, refers to Al-Qaeda targeting key sectors of the US economy. Bin Laden’s chief deputy, Ayman al-Zawahri, reiterated the threat in the closing line of an audio taped interview released on 9 October 2002.

The advisory went on: “The focus on economic targets is consistent with Al-Qaeda’s stated ideological goals and longstanding strategy. The September 11(2001) attacks (on the US) and commentary on these attacks by bin Laden and others indicate how central economic targets are to this strategy: the group’s leaders have said that they

aim to undermine what they see as the backbone of US power, the economy. Our adversary is trying to portray American influence as based on economic might and therefore seeks to strike an economic target prominent enough for economic and symbolic reasons that it would have immediate resonance around the world.

“Recipients should review and implement additional prudent steps to detect, disrupt, deter and defend against potential attacks against our nation’s critical transportation infrastructure and installations at home and abroad.”)

Two audio tapes purportedly from Al-Qaeda’s leader Osama bin Laden that were broadcast in October 2003 by Qatar-based Arabic television station Al Jazeera said that the group would launch more attacks inside and outside the United States and said that all countries backing the US occupation of Iraq were targets. The broadcast specifically named Britain, Spain, Australia, Poland, Japan, Italy and Muslim states, especially Kuwait and other Gulf states.

(Bin Laden vows more attacks, Reuters from Dubai, October 18, 2003, by Ghaida Ghantous.)

US officials have warned repeatedly that shipping and trade are among Al-Qaeda’s prime targets and that a terrorist attack on the maritime transportation system would have a devastating and long-lasting impact on global shipping, international trade and the world economy.

(The Straits Times, Singapore, 29 November 2003, “Energy security new top priority,” by John Zarocostas.

The report quoted Admiral Thomas Collins, commandant of the US Coast Guard, as telling a Senate panel: “A terrorist incident against our maritime transportation system would have a devastating and long-lasting impact on global shipping, international trade and the world economy.”)

Banking and insurance losses from the attacks on the US in September 2001 have exceeded \$US55 billion. Bin Laden has proclaimed that if his forces succeed in taking over Saudi Arabia, the global oil price will hit US\$125 a barrel, a level that would cripple economies in the West and Asia. Bin Laden’s deputy, Ayman Al Zawahiri, has stated that US economic targets are high on Al-Qaeda’s hit list.

(Tech Central Station website, November 11, 2003, “The Political Economy of Terror,” by Ariel Cohen, a Research Fellow at The Heritage Foundation in Washington whose expertise includes international energy security. He writes: “Bin Laden and his henchmen understand well the political economy of terror. They aim for maximum ripple effect...”)

Following the Limburg attack, Al-Qaeda claimed responsibility in these terms: “If a boat that didn’t cost US\$1,000 managed to devastate an oil tanker of that magnitude, so imagine the extent of the danger that threatens the West’s commercial lifeline, which is petroleum,” said a communique issued by Al-Qaeda’s political bureau on 13 October,

2002. “The operation of attacking the French tanker is not merely an attack against a tanker, it is an attack against international oil transport lines...”

(Business Times, Singapore, shipping section, 3 December 2002, Associated Press report: “Tanker industry seeks anti-terrorism measures.”)

Many officials and security experts fear that Al-Qaeda-linked terrorists aim to:

- 1) sink, set alight or explode a huge tanker laden with inflammable material in a key port, strait, canal or internal waterway for international shipping, or
- 2) pack a ship with explosives, sail it into the harbour of a leading port-city and detonate it there to cause maximum casualties, destruction and panic.

While terrorists might use ships or cargo containers to smuggle chemical or biological agents into a country for an attack, these agents could not be effectively dispersed by ship or container and would need to be offloaded.

The most dangerous possibility in maritime terrorism – indeed it is a declared nightmare scenario for many Western officials and analysts – is that terrorists might sooner or later:

- 1) get and use a radiological bomb, in which conventional explosives disperse deadly radioactive poison, or
- 2) even a nuclear bomb, perhaps concealed in the one of over 230 million containers that move through the world’s ports each year.

Quote officials incl Bush

How could this nightmare scenario happen?

What would be the consequences of such an attack and the extent to which it could disrupt world trade?

And what is being done to prevent it?

The rest of this report seeks to answer these questions.

A Maritime-related Terrorist Strike: Where and How?

Where and how might well-organized terrorists strike against the seaborne trading system or its land-links in the global supply chain?

Bombing attacks against individual vessels have been the only method planned and carried out so far. But the frequency of pirate attacks, particularly in Southeast Asian waters, has shown that ships are vulnerable to boarding and seizure by armed raiders, including, potentially, by terrorist groups.

A study published in October 2003 by Aegis Defence Services, a security consultancy based in London, reported what it said were several new and disturbing developments for maritime terrorism in Southeast Asia.

In March 2003, the chemical tanker Dewi Madrim, was boarded off the coast of Sumatra in Indonesian waters by ten pirates from a speedboat. They were armed with machine guns and machetes and carried VHF (very high frequency) radios. They disabled the ship's radio, took the helm and steered the vessel, altering speed, for about an hour. Then they left, with some cash and the captain and first officer, who are still missing.

The Aegis report concluded that this was a case of terrorists learning to drive a ship, and that the kidnapping (without any attempt to ransom the officers) was designed to acquire expertise for carrying out a maritime attack. The Economist magazine described the takeover of the Dewi Madrim as "the equivalent of the Al-Qaeda hijackers who perpetrated the September 11 attacks going to flying school in Florida."

(The Economist, October 4, 2003, "Terrorism and business: Peril on the Sea.")

The Aegis report also identified ten cases of Southeast Asian pirates stealing tugs for no apparent reason. The worry is that they are for use to tow a hijacked laden super-tanker into a busy international port, such as Singapore, or the Malacca and Singapore Straits and scuttle it to create a major blockage and oil spil, or blow it up to start a massive blaze.

(Aegis Terrorism Report 2003, [www.aegisdef.com](http://www.aegisdef.com))

How could terrorists take control of a ship? Would they collaborate with pirates or criminal gangs involved in the robbery or hijacking of vessels. In 2003, the International Maritime Bureau, an arm of the International Chamber of Commerce, named Indonesia's waters adjacent to the Malacca/Singapore Straits as the most dangerous on the planet, accounting for 87 of the world's 344 pirate attacks in the first nine months of the year.

But it is more likely that Al-Qaida would use its own ships, or its own agents to take control of a vessel, for a major maritime terrorist attack. This would give the organisation better control over any operation. Otherwise it would have to rely on people from outside its circle of zealots, whom it might not be able to trust. Moreover, for pirates, and any criminal syndicates behind them, a serious terrorist attack would be bad for business-as-usual because it would almost certainly lead to a crackdown that would make future sea robberies more difficult.

Al-Qaida and its international affiliates could with relative ease infiltrate the ranks of over 1.2 million seafarers, most of them sourced from Asia, Eastern Europe and Russia. The main supply countries are the Philippines, Indonesia, Russia, Ukraine, Poland, China, India, Greece, South Korea, Croatia and Romania. Over 400,000 of these seafarers are officers while more than 800,000 are ratings. They serve on some 87,000 ships.

(International Labour Organisation press release on women seafarers 3 October, 2003; Page 6 of address on 1 October 2002 by Peter Morris, chairman of the International Commission on Shipping to the Apostleship of the Sea XXI World Congress in Rio de Janeiro.)

There is intense competition for employment on ships because wages are relatively high for many seafarers as a result of hard bargaining over many years by the the International Transport Workers' Federation (ITF) and its affiliated unions. In late 2003, the worldwide benchmark for a deckhand was \$US1,300 per month – much more than many seafarers from Asia, Eastern Europe and Russia could expect to earn in their home countries.

(The Economist 13 September 2003, "Flags of peace?" ; Business Times of Singapore shipping section 9 September 2003, "Asian owners reject proposed wage hike," by Beth Jinks.)

Demand for seafaring jobs exceeds supply. Regulation of recruitment and manning practices is lax. As a result, fraud and corruption are rife. Research in the past few years has shown that a large number of certificates held by seafarers are fraudulent and that fake papers for crew members can be bought and sold easily. Late in 1999, the International Maritime Organisation (IMO) asked the Seafarers International Research Centre (SIRC) at Cardiff University in Wales, Britain, to investigate the nature and extent of illegal practices associated with certificates of competency issued to seafarers. The report to the IMO in June 2001 concluded that fraudulent certificates, used by seafarers to get jobs on ships, were widespread. In all, 82% of the the respondents in the SIRC survey had detected forged certificates of competency in the last five years.

The SIRC researchers visited countries in South and Southeast Asia, Eastern Europe and Latin America that were either labour suppliers to the international fleet or operated large registers for ships. They reported that measures to prevent and penalise fraudulent practices existed in most of the countries surveyed but implementation of these measures was frequently ineffective. Their report said that in 10 of the 13 countries visited, it was evident that forgery was more than a backroom business. "It was typically well-organised with effective linkages into maritime administrations, employers, manning agents and training establishments. In several cases, forgers operated transnationally."

(IMO website report on the Maritime Safety Committee at its 74<sup>th</sup> session in June 2001 receiving the SIRC study; from same website, SIRC's abridged report.)

Seafarers have traditionally been granted relatively liberal landing and travel rights by governments when they present their seafarer identity documents. A significant proportion of the world's commercial fleet gets crews from manning agencies that match candidates with the requirements of ship owners and operators. While many of these agencies are reputable and ensure that the seafarers they represent fulfil international requirements and pass background checks, some do not.

(OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003, pages 13 & 14.)

Peter Morris, a former Australian transport minister who chairs the International Commission on Shipping which published its report "Ships, Slaves and Competition" in March 2001, says that some of the many private manning agencies that compete for business in developing countries are involved in the secret and illegal recruitment and transfer of people posing as seafarers to other countries, in many cases after providing them with forged and unearned qualification certificates. He says that certification fraud breaches ship security and underlines the need to authenticate the identity of seafarers.

(Pages 10 and 11 of address on 1 October 2002 by Peter Morris, chairman of the International Commission on Shipping to the Apostleship of the Sea XXI World Congress in Rio de Janeiro.)

In 2001, the ITF revealed that it had bought a First Officer's certificate for its General Secretary, David Cockroft, who is a "landlubber" with no shipboard training or experience, from Panama which operates the world's largest ship register. The ITF said it paid \$US4,500 for the certificate and seaman's book that authorised Cockroft to navigate a vessel and deputise for its captain, despite his complete lack of marine qualifications and skills.

The ITF says it is disappointed with progress since 2001 to tighten up certification of seafarers. There have been few responses to an IMO circular requesting reports from member states on fraudulent certificates found and prosecutions made. And the ITF says that as of mid-2003 fake certificates continue to be issued.

In such a situation, there is considerable scope for terrorists to pose as crew and then take over a ship to use it as a weapon of attack. Many large modern ships are highly automated and can be operated by crews of well under 20 officers and ratings. So it would only take a small number of well-trained and determined terrorists to seize command of a big ship.

(Pages 18 and 19 of the ITF's Flags of Convenience Campaign Update, September 2003; Page 19 of testimony by to the US House of Representatives' Armed Services Committee Marchant Marine Panel 13 June 2002, by David Cockroft, the ITF's General Secretary.)

## Chokepoints in maritime trade

Most international trade – about 80% of the total by volume - is carried by sea. World maritime trade set a record in 2002, reaching almost 5.9 billion metric tons. A further significant rise is expected in 2003.

(Review of Maritime Transport, 2003, issued by the United Nations Conference on Trade and Development (UNCTAD) in Geneva on 7 November 2003.)

Sixty percent of the world's oil supply is transported by approximately 3,500 oceangoing tankers. These range in size from Ultra Large Crude Carriers (ULCCs) of more than 300,000 dead weight tons (dwt) and Very Large Crude Carriers (VLCCs) of between 200,000 and 300,000 dwt, to Handymax tankers of around 35,000 dwt and smaller Handy Size tankers of between 20,000 and 30,000 dwt.

Seventy five percent of global maritime trade passes through a handful of relatively narrow shipping lanes. Nearly 35 million barrels of oil per day – just under half the world's daily consumption of nearly 78 million barrels in 2002 – passes through five geographic “chokepoints”, or narrow channels. An increasing proportion another of natural gas in liquified form is carried through some of the same channels:

- 1) Strait of Hormuz leading out of the Persian Gulf to the Arabian Sea and Indian Ocean;
- 2) Malacca and Singapore Straits linking the Indian Ocean (and oil and gas supplies from the Middle East) with the Pacific Ocean (and major consuming markets in Asia) via the Andaman Sea and the South China Sea;
- 3) Panama Canal connecting the Pacific and Atlantic Oceans;
- 4) Suez Canal linking the Red Sea and the Mediterranean Sea;
- 5) Bab el-Mandab passage from the Arabian Sea and the Gulf of Aden to the Red Sea;
- 6) Bosphorus and Turkish Straits, connecting the Black Sea and the Mediterranean.

These channels are critically important to the world's trade because so much of it passes through them. Yet they are also “chokepoints” because they are narrow enough to be blocked, at least temporarily, by an accident or by an attack, including a terrorist operation.

(World Oil Transit Chokepoints, a Country Analysis Brief issued by the US Department of Energy in November 2002; BP Statistical Review of World Energy, June 2003.)

Many of the vessels that pass through these straits and canals are laden supertankers, or carriers of liquified petroleum gas (LPG) liquified natural gas (LNG), chemicals and other inflammable, explosive or dangerous material that could be attractive

to terrorists as floating bombs or major sources of pollution. Oil tankers and dry bulk carriers together make up almost 72% of the total world commercial shipping fleet by tonnage. According to the International Association of Independent Tanker Owners, Intertanko, tankers carry close to 40% of global seaborne trade.

(Review of Maritime Transport, 2003, issued by the United Nations Conference on Trade and Development (UNCTAD) in Geneva on 7 November 2003.)

Very large crude carriers, or VLCCs, typically carry over 2 million barrels of oil on every voyage. They are huge and slow, with a cruising speed of some 15 knots. And they are a common sight; about 3,000 big tankers ply the world's shipping lanes.

(Business Times, Singapore, shipping section, 3 December 2002, Associated Press report: "Tanker industry seeks anti-terrorism measures.")

"To hit a tanker with a boat full of explosives is not much more difficult than getting into your car and driving into a fuel truck on the interstate," Ben Venzke, chief executive of IntelCenter, a security consulting firm in Alexandria, Virginia, told AP. "The vulnerability of tankers and other petroleum facilities has always been there. It's just that Al-Qaeda is now choosing to exploit that vulnerability.")

### Hormuz Strait

Nearly half the world's oil flows through this short strait, which is less than 40 nautical miles across from Iran on one side and Oman on the other. The Middle East, mainly the Persian Gulf, accounts for over 65% of the world's proven oil reserves and 36% of its proven gas reserves. Japan, South Korea and, increasingly, China are critically dependent on the Gulf energy supplies that pass through the Hormuz Strait; the US and Western Europe are much less reliant on Gulf oil, but still regard it as a key strategic chokepoint.

The strait consists of 2-mile wide channels for separate inbound and outbound tanker traffic, as well as 2-mile wide buffer zone between them. Closure of the strait to the estimated 13 million barrels of oil per day that passed through it in 2002, would require use of longer alternative oil export routes at a higher cost. Assuming space was available, such routes include five overland export pipelines from the Gulf with a capacity of at least 7.4 million barrels per day.

Such a shutdown would have a huge strategic impact on Northeast Asia, North America and Western Europe. This is why the US and its allies attach such importance to freedom of navigation through the strait, protect it with regular warship patrols, and station naval vessels in the Gulf.

(BP Statistical Review of World Energy, June 2003; World Oil Transit Chokepoints, a Country Analysis Brief issued by the US Department of Energy in November 2002; Energy Security Initiative: Emergency Oil Stocks as an Option to Respond to Oil Supply Disruptions, a background report in 2002 by the Asia Pacific



Energy Research Centre; Sealane Security, paper presented on 8 September 2003 by Dr Sam Bateman, a retired Australian navy officer who is now a Professorial Research Fellow at the Centre for Maritime Policy at the University of Wollongong in Australia, to the APEC High Level Conference on Maritime Security in Manila.)

### Malacca/Singapore Straits

About a quarter of the world's trade, half its oil pass and much of its LNG pass through this waterway between the islands of Indonesia to the south, and peninsular Malaysia and Singapore to the north. Most of the oil imported by Japan, South Korea and China comes from the Persian Gulf via the Malacca and Singapore Straits.

(Enhancing Maritime Security in the Straits of Malacca and Singapore, paper presented to the October 17-18, 2003, conference of the Institute for Ocean Policy, Ship & Ocean Foundation in Tokyo by Robert C. Beckman, Associate Professor, Faculty of Law, National University of Singapore; Modern Maritime Threats and Strategies by Danny Chan, Director of EDC Consultants, a presentation to Singapore's Institute of Defence and Strategic Studies (IDSS) on 16 October 2003.)

Although over 600 miles long, the straits are congested and only 1.5 miles wide at their narrowest point in the Phillips channel near Singapore, the world's busiest port with a population of four million. As many as 50,000 large ships use the waterway each year.

In 2002, an average of 45 tankers a day, carrying over 10 million barrels of oil, passed along the Malacca Strait, a number projected to rise to nearly 60 per day by 2010 as Northeast Asian demand, especially from China, for imported oil from the Persian Gulf rises. In the same period, the number of LNG carriers using the Strait each day is forecast to increase from eight to 12, and the number of LPG carriers from five to seven. This can only increase the strategic importance of the strait in future.

(The Business Times, shipping section, April 30, 2002, "Tankers prime terrorist target in Strait: seminar," by Donald Urquhart.)

There are two alternative waterways for international shipping through the Indonesian islands that could be used if the Malacca and Singapore Straits were closed – the Sunda Strait and the Lombok and Makassar Straits. Both are deepwater channels. But even a detour through the Sunda Strait, the shortest alternative between the Persian Gulf and Northeast Asian energy consumers, would add a significant amount of time, and therefore cost, to the voyage. Moreover, a sealane disruption simulation exercise conducted in April 2003 by the Tokyo-based Asia Pacific Energy Research Centre highlighted the inadequacy of navigational aids in both the Sunda and Lombok straits should a shipping crisis block the Malacca and Singapore Straits.

There is a draft limit in the Malacca and Singapore Straits. They are 25 meters deep at their shallowest point. Ships using them require an under keel clearance of 3.5 meters to comply with navigation rules issued by the International Maritime

Organization, the United Nations agency responsible for regulating global shipping. Laden oil tankers over about 250,000 tons will probably be outside these draft limits and would normally use the Lombok and Makassar Straits, although this might add about 1,000 nautical miles and three days' steaming to the passage between the Persian Gulf and ports in Northeast Asia.

Indeed, the US Department of Energy has calculated that if the Malacca and Singapore Straits were closed, nearly half the world's fleet would have to sail further, generating a substantial rise in the requirement for vessel capacity, at a time when demand for ships is exceeding supply and pushing both freight rates and shipbuilding costs higher, largely because of China's rapidly growing export-import trade. Closure of the Malacca and Singapore Straits would increase freight rates worldwide. It would jolt the economies of China, Japan, South Korea and Taiwan that rely on imported energy for continued growth.

If the closure lasted for long, it could also be disastrous for Singapore's trade-dependent economy. Singapore is the 19<sup>th</sup> biggest trading nation and the 5<sup>th</sup> most trade-dependent country. The value of its trade is more than 80% of its GDP. At any one time, an average of 800 ships and 150,000 containers are in Singapore's port.

The terrorist bombings against land targets in Indonesia since October 2002 have raised concerns that extremist groups in Southeast Asia affiliated to Al-Qaeda could try to stage a major operation in the Malacca and Singapore Straits.

Of all the major international straits, the Malacca and Singapore Straits are the most vulnerable to attack and the easiest for a terrorist group to block, with the possible exception of the Bosphorus and Turkish Straits. But the Malacca and Singapore Straits are far more vital to global seaborne trade than the straits that bisect Turkey. The closure of this key waterway in Southeast Asia would disrupt world commerce, although its impact would not be as catastrophic as a nuclear or radiological bomb attack on a mega port-city.

(Sealane Security, paper presented on 8 September 2003 by Dr Sam Bateman, a retired Australian navy officer who is now a Professorial Research Fellow at the Centre for Maritime Policy at the University of Wollongong in Australia, to the APEC High Level Conference on Maritime Security in Manila; Speech by Ambassador Makarim Wibison, Chairman of the APEC Counter Terrorism Task Force, to the same conference; World Oil Transit Chokepoints, a Country Analysis Brief issued by the US Department of Energy in November 2002; Financial Times 20 October 2003, "The maritime threat from Al-Qaeda," by Mansoor Ijaz; Modern Maritime Threats and Strategies by Danny Chan, Director of EDC Consultants, a presentation to Singapore's Institute of Defence and Strategic Studies (IDSS) on 16 October 2003; Financial Times 13 October 2003, "China fuels rise in shipping rates"; Asian Wall Street Journal 5 November 2003, "High shipping costs to affect consumers"; Financial Times 25 November 2003, "China's rapid expansion boosts world shipping industry"; The Economist Pocket World in Figures 2003 edition, page 32.)

## Panama Canal

This 50-mile waterway through Panama links the Pacific Ocean with the Caribbean Sea and Atlantic Ocean. It has a number of narrow locks. The largest tanker that can use the Panama Canal is the Panamax class of around 50,000 deadweight tons. Only about 600,000 barrels of oil per day passes through the canal and only a small portion of the crude oil and refined products imported into the US comes this way.

If transit were halted through the canal, the Trans-Panama pipeline could be reopened to carry oil in either direction. It has a capacity of 860,000 barrels of oil per day.

## Suez Canal

Connecting the Red Sea and Gulf of Suez with the Mediterranean Sea, this busy international shipping canal carries around 1.3 million barrels of oil per day. The biggest tankers it can currently accommodate are the Suezmax class of between 125,000 and 180,000 deadweight tons. The Egyptian government plans to widen and deepen the Suez Canal so that by 2010 it can take laden tankers of more than 300,000 deadweight tons.

## Bab el-Mandab passage

As much as 3.3 million barrels of oil per day is estimated to pass in tankers through this passage between Djibouti and Eritrea on the Horn of Africa and Yemen in the southwest of the Arabian peninsula. US forces are based in Djibouti to hunt for terrorists and ensure that the passage remains open.

The French tanker Limburg, a Very Large Crude Carrier (VLCC) laden with 400,000 barrels of oil, was that was set ablaze in a terrorist bombing off the coast of Yemen in October 2002, was not far from the Bab el-Mandab. Closure of the passage could keep tankers from the Persian Gulf from the reaching the Suez Canal/Sumed pipeline complex. Instead, they would have to divert around the Cape of Good Hope on the southern tip of Africa. This would add greatly to transit time and cost for oil going to the North America and Europe. It would also tie up spare tanker capacity.

For northbound traffic, the Bab el-Mandab could be bypassed by using the East-West oil pipeline that crosses Saudi Arabia and has a capacity of about 4.8 million barrels of oil per day, assuming the pipeline could carry the extra load. But southbound oil traffic would still be blocked. In addition, closure of the Bab el-Mandab would block non-oil shipping from using the Suez Canal, except for limited trade within the Red Sea region.

(World Oil Transit Chokepoints, a Country Analysis Brief issued by the US Department of Energy in November 2002.)

## Bosporus and Turkish Straits

This 17-mile long waterway connecting the Black Sea with the Mediterranean Sea divides Asia from Europe and is only half a mile wide at its narrowest point. The straits are the only southern shipping route for oil and commodities from Russia and the energy-rich Caspian Sea. The Black Sea is the largest outlet for Russian oil exports. Two and a half million barrels a day of crude oil and refined products and 140 ships pass through the Bosphorus each day, or 50,000 vessels a year, the same number as use the Malacca and Singapore Straits. Of these, up to 8,000 carry oil or other potentially hazardous cargo.

Congestion is common, and the Bosphorus/Turkish straits have often been closed following bad weather or accidents. Istanbul, a city of 10 million people straddles the waterway. Citing safety concerns, Turkey has imposed restrictions on Bosphorus traffic. Since October 2002, it has banned the passage of ships longer than 200 meters at night. Ships carrying dangerous cargo, including oil, must request permission to transit 48-hours in advance. Restrictions have also been imposed on large LNG and LPG carriers.

Two huge truck bombs outside the British consulate and the British-based HSBC banking group killed more than 25 people in Istanbul in November, 2003, just five days after the bombing of two synagogues in the city left 25 dead. After these attacks, some analysts warned that the Bosphorus could be a tempting target for Al-Qaeda, although they saw no signs of a specific threat.

(Reuters London, 20 November. “The logical thing to do is to see an increased threat,” said Kevin O’Brien, a policy analyst with RAND Europe. “In real chokepoints like the Bosphorus and Suez Canal, you can make an attack with a small vessel or even a shore-mounted missile, as we’ve seen in the Persian Gulf. You don’t need a lot of ground to launch one of these things.”)

But maritime security consultant Les Chapman of Control Risks Group in London said that the attacks on Turkey had been on high profile targets – synagogues, international business and the British government – and that there was no reason why strikes should be directed at shipping. “Suicide bombing on a ship is very difficult,” he said. “We can see no sign at all from the Islamic extremists to say there is any specific threat in the Bosphorus or eastern Mediterranean.”)

### Ships as Terrorist Weapons

Among the vessels that could be used by terrorists to block or disrupt critical straits, waterways and port-cities are big ships carrying crude oil, especially fuel and other heavy oils, toxic chemicals, petrol, ammonium nitrate, liquified petroleum gas (LPG) and liquified natural gas (LNG).

Large modern oil tankers have double steel hulls, for added protection in case of rough weather, collision or grounding. The terrorist attack in October 2002 on the French-registered tanker, Limburg, off the coast of Yemen, using an explosive-laden small boat breached the double-hull and caused a fire that took many hours to extinguish.

The blast and the blaze severely damaged the tanker, and nearly a quarter of its 400,000 barrels of crude oil spilled into the sea. But the ship did not sink. Nor was it in a vital waterway for international shipping, although it was not far from the Bab el-Mandab Strait at the entrance to the Red Sea.

Terrorists could mount an external attack on a large laden tanker and sink it in the narrowest part of a vital waterway for international shipping, such as the Straits of Malacca and Singapore or the Bosphorus and Turkish Straits. Perhaps more likely, terrorists could commandeer the vessel by posing as crew and then ground, sink or set it ablaze, spilling the oil and causing a major danger to shipping as well as an environmental disaster.

Since 1979, there have been at least 17 major tanker accidents around the world, with four of them each involving well over 200,000 metric tons of oil. But some of the most damaging sinkings, groundings or collisions have been the result of smaller releases of heavy oils. Heavy fuel oil, for example, is a common tanker cargo. It will not disperse or emulsify easily when treated with detergents to clean up a spill. And it tends to stick to the seafloor, resulting in the long-term contamination of shellfish beds and the closure of parts of fisheries around inlets where a lot of oil has settled.

Over half the world's 10,000 tankers are old-style vessels with single hulls. When one of them, the *Prestige*, broke in two in a winter storm in November 2002 and sank about 245 kilometers off the northwest coast of Spain, spilling much of its 63,000 tons of heavy fuel oil into the sea, it fouled the Spanish coastline for months afterwards, creating a costly environmental disaster.

(*The Economist*, 23 November 2002, "The *Prestige* oil spill: a game of consequences."; Associated Press, 21 November 2002, "New oil spill from old tanker prompts renewed calls for crackdown on environmental timebombs," by Paul Geitner; *Asian Wall Street Journal*, 25 November 2002, "Tanker saga illustrates how rescues are hurt by cross-current goals," by Bhushan Bahree, Carltta Vitzthum and Erik Portanger.")

The *Prestige* sinking galvanised Europe's political leadership to take tough action. In October 2003, the European Union banned single hull tankers from the ports, offshore installations and waters of its 15 member states if they were carrying heavy grades of oil.

Europe's strong-arm tactics prompted the International Maritime Organisation, the United Nations agency responsible for setting global standards for shipping safety, to agree in December 2003 to bring forward its deadline for phasing out single hull tankers by five years, to 2010 for most vessels. The IMO also agreed that from 2005, heavy oils can only be carried in double hull tankers of 5,000 deadweight tons and above. Smaller single hull tankers that don't generally make long sea voyages can carry heavy oils until 2008.

As a result, there are now glaring inconsistencies between EU and international rules for the tanker trade. This will push more single hull vessels towards Asia, where

demand for imported oil is strongest. They will become even more heavily engaged in carrying oil through the Southeast Asian straits to Northeast Asia - to Japan, South Korea, Taiwan and China. The breakneck pace of China's economic expansion is leading to a huge surge in oil imports and China is expected to overtake Japan as Asia's biggest oil consumer in 2004.

(Intertanko, the International Association of Independent Tanker Owners, website December 2003, "Intertanko welcomes international accord at IMO on amendments to MARPOL."; Intertanko website, October 2003, "Amended European regulation on single hull tankers took effect 21 October 2003."; Business Times of Singapore shipping section, 17 December 2003, "Tanker in row clears Spain's coast," by Beth Jinks; Bloomberg News in Singapore's Straits Times 6 December 2003, "Asian nations consider joint stockpiles."; China Daily website, 14 November 2003, "China changing world oil-demand map.")

Of course, not all old tankers with single hulls are unsafe. But there have been some near-disasters from tanker collisions in Asian waters in recent years. For example, in December 2002, just a month after the Prestige went down off Spain, a single hull tanker collided with a cargo ship at the eastern entrance to the Malacca and Singapore Straits. Fortunately, the tanker sustained relatively minor damage and only about 350 tons of its 86,000 tons of crude oil spilled into the sea.

(Business Times of Singapore shipping section, 6 December 2003, "Ships collide in S'pore waters; oil spill contained," by Beth Jinks.)

The migration of single hull tankers to Asia before they are phased out by 2010 under the IMO's global rules will increase the risk of a major oil spill – possibly one engineered by terrorists.

#### LNG and LPG Carriers

What would happen if terrorists tried to blow up an LNG or LPG carrier, or set it ablaze? The question worries some officials in the US, Europe and Asia. One of the first maritime-related security actions taken after Al-Qaeda used the US aviation system to attack New York and Washington in September 2001 was to ban entry to a shipment of LNG into Boston harbour until the authorities considered it was safe.

(Associated Press report in Portsmouth Herald 11 October 2001, "Report says risks of LNG explosion in Boston slight; Global Energy Security Analysis 26 September 2003, "Energy security and liquified natural gas.")

However, a considerable body of evidence suggests that LNG or LPG carriers may not be as vulnerable or as tempting a target as other big ships that carry crude oil, especially fuel and other heavy oils, toxic chemicals, petrol and ammonium nitrate. For example, a fire in November 2002 aboard the LPG tanker Gaz Poem failed to ignite the partially laden tanks, while a direct hit on a laden LNG carrier by an Exocet missile

during the Iran-Iraq war in the 1980s did not cause an explosion. The main risk from LPG and LNG is during loading or unloading when the cargo can be released in a gaseous state.

(Page 17 of OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003.)

Natural gas is about 90% methane and when it is cooled to minus 161.5 degrees Celsius (256 degrees Fahrenheit) it concentrates into liquid, hence the name liquified natural gas. During the refrigeration process, elements that would make natural gas explosive, like oxygen and hydrocarbons such as propane, ethane and butane, are removed as they freeze when the gas is chilled. LNG is not stored under pressure and won't explode. But at certain concentrations – when the liquid is returning to its gaseous form – the fuel is highly flammable. LNG will burn only if it escapes or is released into the atmosphere and mixes with air in a 5% to 15% gas-to-air ratio. And there has to be a source of ignition.

LNG is 600 times smaller in volume than natural gas and can be transported long distances by tankers. There are over 130 LNG carriers in service and more are being built as demand for the fuel increases rapidly in the United States, Europe and Asia. These tankers are among the strongest and most technologically advanced ships in the world and, since the terrorist attacks on the US in September 2001, they are closely guarded as they approach their receiving and regasification terminals in LNG importing countries. LNG carriers have double hulls and double-walled, insulated cargo storage tanks to guard against leaks and keep the LNG cold. The tanks are, in effect, giant reinforced thermos flasks. A typical LNG tanker contains as many as five tanks with a combined capacity of some 33 million gallons of LNG - enough to heat 30,000 homes for a year. The ships are up to 1,000-feet long, or the length of three football fields.

(Platts website, What is LNG?; Weaver's Cove Energy website: Transportation; Carrier Safety; Will LNG Explode?; ChevronTexaco Corp presentation by Doug Quillen to Natural Gas Technology conference in Houston, Texas, on 14 – 15 May 2002, "LNG safety: myths and legends."; Portland Press Herald 6 October 2003, "Vigilance attends LNG deliveries," by Tux Turkel.)

From 1952 until 2003, LNG ships made more than 33,000 voyages worldwide, carrying over three billion cubic meters of the fuel. Accidents have included engine room fires, serious collisions with other vessels, and eight cases of cargo spillage. But there have been no LNG explosions or fires following these accidents.

Still, there remains some concern about a possible terrorist attack on an LNG carrier or loading/unloading facility. An ignited LNG vapour cloud would be very dangerous, because of its tremendous radiant heat output. As it burned, the flame could spread back towards the evaporating pool of liquid. A fire of this kind could cause extensive damage to life and property, especially if it was near a city or work place.

Spilled LNG would disperse faster on the ocean than on land, because it would be more difficult to contain at sea. LNG also vaporises more quickly on water because the ocean provides a relatively enormous heat source. For these reasons, most analysts conclude that the risks associated with shipping, loading and off-loading LNG are much greater than those associated with land-based LNG storage facilities.

(US Department of Energy Report February 2002; California Energy Commission, Staff White Paper on Liquefied Natural Gas in California: History, Risks and Siting, July 2003; Bulletin of the Atomic Scientists, July/August 2003, Volume 59 pages 16-18, "Terrorism: Ready to blow?" by Jerry Havens; Bloomberg news report in the shipping section of Singapore's Business Times 11 November 2003, "LNG attack may devastate Boston Port.")

### Ammonium Nitrate

Ammonium nitrate is used as an agricultural fertilizer throughout the world. It is widely, and legally, available. For example, the US and other OECD countries imported over 1.6 million tons of ammonium nitrate in 2000 – mostly by sea. As a commercial-grade explosive, it is often used for blasting in construction projects and in mining.

But ammonium nitrate is also of special interest to terrorists because it can be acquired quite easily in many places and then can be made into a powerful explosive when mixed with fuel oil by a bombmaker. It was used in frequent IRA car bombings. It was also the main explosive in the terrorist truck bombings in Oklahoma city in 1995, against the US embassies in Nairobi, Kenya, and in Dar es Salaam, Tanzania, in 1998, as well as in Al-Qaeda's first attempt to attack the World Trade Centre in 1993. Turkish police say that ammonium-nitrate explosives were used in four deadly suicide truck bombings in Istanbul in November 2003 that killed 61 people, including the four suicide bombers, and wounded 712. Turkish prosecutors allege that the strikes by Islamic militants were ordered by Al-Qaeda. The US blames Al-Qaeda for the 1998 bombings against its embassies in East Africa.

(OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003, pages 10 & 11; Associated Press report 28 November 2003, "Police ID explosives from Turkish attacks."; Combined AP, AFP, Financial Times report in the Straits Times of Singapore 29 November 2003, "Bombs in Istanbul attacks bear Al-Qaeda stamp.")

Ammonium nitrate was used in the van bombing outside the Marriott Hotel in Jakarta in August, 2003. Indonesia produces or imports more than 100,000 metric tons of explosive material, including ammonium nitrate, each year. Indonesian defence officials say that controlling this material is difficult because there are many firms with production and distribution permits. They want a special monitoring agency to be established. Up to 10,000 tons of Indonesia's total supply of explosive materials may "disappear" every year. Rampant illegal mining and fish-bombing contribute to the problem.



(Straits Times of Singapore 25 September 2003, “Jakarta seeks tight watch on explosives,” by Robert Go; BBC Worldwide Monitoring 20 September 2003, “Indonesia admits difficulty controlling explosives production.”)

### Baltic Sky

In June 2003, Greek commandos boarded a cargo ship that had been zig-zagging around the Mediterranean Sea for nearly six weeks in a way that aroused suspicion. The Baltic Sky was found to be packed with 680 metric tons of ammonium nitrate-based explosive and 8,000 detonators. The ship’s manifest said that the cargo was loaded in Tunisia bound for a company in Sudan. But the Greek Shipping Minister Giorgos Anomeritis said that the company, identified as Integrated Chemicals and Development, was just “a post office box in Khartoum that did not exist.”

The Tunisian firm that had manufactured the explosives filed a complaint against the Baltic Sky, alleging that it had failed to fulfill a contract to deliver the cargo, intended for civilian use, to Sudan. It accused the captain and crew of diverting from their original route and threatening not to deliver the cargo to its rightful destination. The freighter apparently never headed toward the Suez Canal that would bring it to Sudan.

Greek officials said that the Baltic Sky flew the flag of the Comoros Islands, a country in the Indian Ocean off the southeast coast of Africa between Madagascar and Mozambique, until shortly before its detention. The Comoros is used by shipping companies as a flag of convenience to avoid taxes and regulation and guarantee anonymity and freedom from prosecution for the owner. The Comoros shipping register opened for business in late 2000 or early 2001 and branded itself as the world’s first Islamic flag of convenience. Its office in Greece, known as the Shipping Activities Bureau, also marketed the North Korean flag.

The Baltic Sky was previously called the Sea Runner and flew a Cambodian flag. Its 37-year life in the shipping industry was marked by frequent changes of owner and flag, and frequent brushes with the law. It was boarded as part of the international war on terror and had been tracked by Greece and other NATO countries before it was seized and forced to dock, for safety reasons, in a remote Greek harbour.

Greek authorities said that when the Baltic Sky was intercepted in Greek territorial waters it was not flying a flag and could therefore be detained. The freighter’s captain and crew were charged with illegal possession and transport of explosives. Mr Anomeritis said the authorities were looking into various possibilities: that it was a terrorist shipment; a legitimate business deal that fell apart; or that its crew simply got cold feet delivering dangerous cargo with US-led anti-terrorist efforts in full gear around Sudan and the Horn of Africa region.

The Greek merchant marine ministry said that the Baltic Sky’s cargo was “the biggest quantity of explosives ever seized in the world from a ship sailing illegally.” Mr Anomeritis described the ship’s potential explosive power as akin to “an atomic bomb.”

This was an exaggeration but it certainly would have wreaked havoc had it been detonated near a port-city.

(Associated Press 24 June 2003, "Greeks probe terror link to cargo ship."; International Transport Workers' Federation press statement and factfile on Baltic Sky intercepted carrying explosives, 23 June 2003; Reuters 24 June 2003, "NATO hunting 20 suspect ships."; BBC news 26 June 2003, "New explosives cargo mystery."; The Guardian 24 June 2003, "NATO terror tipoff on explosives ship sailing to Sudan.")

### The Texas City Ammonium Nitrate explosions

On April 16 and 17, 1947, the port of Texas City on the Gulf of Mexico was devastated when two ships containing ammonium nitrate exploded in what was one of the worst industrial disasters in US history. Ammonium nitrate is a crystalline powder that is an excellent peacetime source of nitrogen for crops. In World War II, the substance was combined with TNT to make a bursting charge in demolition bombs.

The French-owned cargo ship, Grandchamp, was in port to load American ammonium nitrate. It was produced during wartime for explosives but later recycled as fertiliser to send to Europe in Liberty ships to help farmers and the post-war recovery. On the morning of 16 April, as dockworkers completed loading some 2,300 tons of ammonium nitrate onto the Grandchamp, someone saw smoke coming from the cargo holds. The fire quickly spread despite efforts to put it out. Not long after 9am, barely an hour after the smoke was first spotted, the ship disintegrated in a massive explosion that was heard as far as 150 miles away.

A huge mushroom shaped cloud billowed more than 2,000 feet into the sky. The rising shockwave knocked two light planes that were flying overhead out of the sky. Steel shards scythed through workers along the docks and a crowd of curious onlookers who had gathered at the head of the pier where the Grandchamp was moored. Many were killed instantly: the ship's crew, bystanders and almost the entire volunteer firefighter corps of the town. At the nearby Monsanto Chemical Company plant, 145 of the 450 shift workers on duty died. A 15-foot tidal wave thrown up by the explosion swept a large steel barge several hundred feet inland, carrying dead and injured people back into the blast zone as the water receded. Ignacio Hernandez, then a five-year-old living in Texas City, ran with his mother away from the blast. He remembers one woman wailing: "The world is coming to an end!"

Pieces of the Grandchamp, some weighing several tons, fell on the port and town for several minutes, extending the range of casualties and property damage well into the business district, about a mile away. The ship's anchor, weighing about 1.5 tons, was found two miles away, embedded 10 feet into the ground. Falling shrapnel bombarded buildings and oil storage tanks in refineries close to the port, releasing flammable liquids and starting numerous fires. In addition to ammonium nitrate, the Grandchamp's cargo included large balls of sisal twine, bales of cotton, tobacco, peanuts, drilling equipment

and a few cases of small arms ammunition. After the rain of shrapnel, came flaming balls of sisal and cotton, adding to the growing conflagration.

The horror did not end quickly. In darkness very early the following day, 17 April, another Liberty ship in the port, the High Flyer, carrying sulfur and about 1,000 tons of ammonium nitrate, also exploded. It had been severely damaged by the blast from the Grandchamp. Although casualties were light because rescue personnel had evacuated the dock area, the blast compounded already severe property damage. In what witnesses described as a giant fireworks display, incandescent chunks of steel from the ship arched high into the night sky, falling over a wide radius and starting many fires. Crude oil tanks burst into flames, and a chain reaction of explosions and heat spread fires to other structures that were still standing after the Grandchamp detonated. When dawn came, large columns of thick, black smoke were visible 30 miles away. These clouds hovered over Texas City for days until the fires gradually burned themselves out or were extinguished by weary fire-fighting crews.

Power and water were cut off. Almost 4,000 rescue workers and volunteers from surrounding cities responded with assistance. Temporary hospitals, morgues and shelters were set up. Eventually, the Red Cross and the Texas Department of Public Safety released a death toll of 568. It included 405 dead who could be identified and another 63 who could not. An additional 100 persons were classified as “believed missing” because no trace of their remains could be found. An estimated 3,500 people were injured - about 25% of the town’s 16,000 population. The port and its industrial zone were devastated. Property damage amounted to well over US\$1 billion in today’s dollars. One third of Texas City’s just over 1,500 houses were condemned, leaving 2,000 people homeless and exacerbating an already-serious post war housing shortage. Investigators came to the conclusion that a discarded cigarette triggered the Grandchamp blast.

(CNN 16 April 1997, “Texas town recalls horror of nation’s worst industrial accident,” by Charles Zewe; The Texas City Disaster April 16, 1947, web page created by Mark Pandanell of the Texas City Fire Department; Houston Chronicle 16 April 1997, “Texas City just blew up,” by Steve Olafson; The Handbook of Texas Online: Texas City Disaster.)

### Insurance

The potential direct cost of a terrorist attack on shipping or maritime infrastructure varies greatly according to the scope of the attack, its target and its location.

A single attack on a tanker, as happened in the case of the Limberg off Yemen in October 2002, had relatively low direct costs, mainly the oil that was lost when it spilled into the sea and had to be cleaned up, and repairing the damage to the ship. The Limberg stayed afloat after the oil fire was put out. Had terrorists attacked and sunk the tanker, spilling its oil or setting it ablaze, in the nearby the Bab el-Mandab Strait or the more

distant Strait of Hormuz, the direct cost in disruption of shipping and trade could have been much higher.

This would also apply if a ship carrying ammonium nitrate or other explosive or inflammable material was blown up in a major port-city. As shown in the case of the Texas City disaster in 1949, when two ammonium-nitrate carriers blew up in one of the worst industrial accidents in US history, there would be extensive loss of life, injury and damage to property.

(OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003, page 17.)

However, the direct harm of such an attack would likely be dwarfed by indirect costs linked to reactions to the attack, especially insurance. The heavy insurance payouts for damage to property, loss of life and injury following the terrorist attacks on the US in September 2001 using hijacked civilian jetliners laden with fuel as weapons has profoundly changed the business and legal environment in which ocean marine insurers and underwriters operate. They have become much more sensitive to terrorist risk at sea, in ports or indeed anywhere along the worldwide container cargo supply chain. Insurance premiums for ships, their cargo, crew and marine liability have risen across the board, while exclusions from insurance coverage have been tightened.

Insurance against terrorism is vital for seaborne trade and the global economy. It is still available but it now costs substantially more than before September 2001. For example, marine insurance companies offering protection and indemnity policies covering a ship's cargo and crew operate in P&I Clubs to manage risks. After the attacks on the US, they specifically identified terrorism as an exemption in their policies. It is placed under war risk in the Strikes, Riots and Civil Commotion (SRCC) category of marine insurance and requires additional premium coverage. In the US after September 2001, that rate went up on average by well over 50% but evidently remains affordable. Importers and exporters usually buy cargo insurance policies, while ship owners or charterers more often purchase hull and liability insurance.

NBC, or nuclear, biological and chemical risks related to terrorism, are specifically excluded from coverage by the American Institute of Marine Underwriters and other insurers.

(Insurance Journal of the US, 3 November 2003, "US marine insurers respond to post-9/11 world of domestic security rules and regulations."; Insurance Journal of the US, 20 February 2002, "The ocean marine market: a unique animal; Review of Maritime Transport, 2003, issued by the United Nations Conference on Trade and Development (UNCTAD) in Geneva 7 November 2003, page 61; Business Times of Singapore shipping section, 28 November 2003, "Insurers may class Indon piracy attacks as terrorism," by Donald Urquhart.")

Aden

What would happen to insurance rates if terrorists attacked, or worse still blocked, a major port, strait or waterway used for international trade? The bigger the attack up the scale of terrorism, the greater the insurance shock would be. As noted above, there is no insurance for a maritime-related terrorist attack using a crude nuclear weapon. The recovery costs would be unimaginably huge. They would also be very heavy if a radiological bomb were detonated in a mega port-city. Whether private insurance payouts would be available to aid recovery from a dirty bomb attack using conventional explosives to disperse radioactive toxins is doubtful. Even a terrorist attack using a ship or ships to block a busy port, strait or waterway – but not involving nuclear or radiological bombs – would trigger a damaging upward spiral in insurance rates and make many ships avoid the area.

The fate of the port of Aden in the wake of the terrorist attack on the Limberg in October 2002 is an example. International shipping business collapsed, brought down by security fears and a hike in insurance premiums to prohibitively high levels. Marine underwriters in the influential Lloyd's of London market tripled war risk premiums for ships calling at Aden and other ports in Yemen to as high as 0.5% of the value of the vessel's hull and machinery, compared to about 0.15% before the attack – an increase amounting to hundreds of thousands of US dollars for larger ships. For a ship carrying around 5,600 standard twenty-foot containers (TEUs), this premium came to as much as \$US 300,000 per port call.

As a result, many vessels diverted to Salalah port in neighboring Oman or stayed away from the area altogether. Container cargo arriving at the port, mainly from elsewhere in the region for transshipment to a hub port overseas, plunged from 43,000 TEUs in September 2002, the month before the attack on the Limberg, to 3,000 TEUs just two months later, in November 2002 and then fell further to almost nothing. In the third quarter of 2003, the Yemeni government claimed it had successfully negotiated a substantial reduction in the prohibitive war risk premiums. But the damage to the shipping business had already been done. The previously booming two-berth Aden Container Terminal, 60% owned by Singapore's PSA Corporation, was crippled by the business slump. PSA was forced to virtually write off its stake in 2002, in the form of a 125 million Singapore dollar provision for impairment loss. In October 2003, Yemen's official news agency, Saba, reported that the PSA had signed an agreement to end its port concession and hand the assets back to the Yemeni government, its 40% partner in the project.

(Business Times of Singapore shipping section, 1 November 2002, "APL diverting some calls from PSA's Aden terminal," by Donald Urquhart; Business Times of Singapore shipping section, 18 September 2003, "War risk premiums cut for ships calling at Yemen," by Beth Jinks; Business Times of Singapore shipping section, 27 October 2003, "PSA drops out of Aden terminal venture: report," by Beth Jinks.)

The Bali Bombing and Indonesia as a War-risk Zone

The terrorist bombings in Bali in October 2002 showed how sensitive to terrorism marine insurers have become, even though the attacks were not maritime-related. Seaports across the entire Indonesian archipelago were declared unsafe by Lloyd's marine underwriters' association and added to a list of "exclusion" zones that also included at the time Somalia, the Congo, Libya and the Persian Gulf. The addition of Indonesia meant that a ship's existing insurance was cancelled if calling at any Indonesian port.

(Business Times of Singapore shipping section, 18 October 2002, "Underwriters declare Indonesia a war-risk zone," by Donald Urquhart; Business Times of Singapore shipping section, 26 October 2002, "All Indon ports put under marine insurance exclusion zone," by Beth Jinks.)

### Radiological Terrorism

A radiological, or so-called "dirty bomb" is a conventional explosive such as dynamite or ammonium nitrate that has been packaged with radioactive material, which scatters when the bomb goes off. It kills or injures through the initial blast of the conventional explosive and by spreading life-threatening radiation particles; hence the term "dirty". A dirty bomb contains radioactive material, but does not use that material to produce a nuclear explosion.

Such a bomb may not be a real weapon of mass destruction, when compared to a nuclear explosion that could cause hundreds of thousands of deaths and injuries in a major city. But a radiological bomb would certainly be a weapon of mass disruption and panic if detonated in or near a city. Indeed, some US officials have said that dirty bombs, which could be constructed with relative ease by conventional bomb makers, may become the next weapons of choice for terrorists who want to cause panic and economic disruption.

Depending on the sophistication and size of the radiological bomb, the radioactive material it dispersed, wind conditions, the location of the attack, and the speed with which the area was evacuated, the number of deaths and injuries from a dirty bomb might not be substantially greater than from a conventional bomb explosion. But panic over radioactivity and evacuation measures could snarl a city. Moreover, the area struck would be off-limits for at least several months during contamination clean-up efforts. This could paralyse a local economy and reinforce public fears about being near a radioactive zone.

The Federation of American Scientists (FAS) told a Senate panel in March 2002 that radioactive materials could easily be stolen from, or lost by, US research institutions and commercial sites and find its way into the hands of terrorists. Such materials could then be incorporated in a dirty bomb that might contaminate tens of city blocks at a level that would require prompt evacuation and create terror in large communities even if radiation casualties were low.

Areas as large as tens of square miles could be contaminated at levels that exceed recommended civilian exposure limits, the FAS. Since there are often no effective ways to decontaminate buildings that have been exposed at these levels, demolition may be the only practical solution. If such an event were to take place in a city like New York, it would result in losses of potentially trillions of dollars.

A radiological bomb attack could shut a port area for months for expensive decontamination. A severe attack could make large parts of a port-city uninhabitable for much longer.

(Terrorism: Q&A on “Dirty Bombs” posted on the website of the US Council on Foreign Relations in cooperation with the Markle Foundation; ABC News 17 September 2003, “What is a Dirty Bomb?”; Testimony on dirty bombs by Dr Henry Kelly, President of the Federation of American Scientists to the Senate Committee on Foreign Relations, 6 March 2003; International Atomic Energy Agency press release 1 November 2002, Calculating the New Global Nuclear Terrorism Threat.)

#### Theft and trafficking of radiological materials

Radioactive materials are widely used and dispersed around the world, not just for military purposes or for fuelling nuclear reactors to generate electricity. Weapons-grade uranium and plutonium are under close guard. Highly radioactive spent fuel from nuclear reactors is also placed in safe and secure places.

But there are millions of other radioactive sources that have been distributed worldwide over the past 50 years, with hundreds of thousands currently being used, stored and produced. The radiation from radioactive isotopes provides a low-cost way to disinfect food, sterilize medical equipment, treat certain kinds of cancer, find oil deep underground, check the welding in pipelines, monitor water aquifers, build sensitive smoke detectors and provide other important economic services.

As a result, radioactive materials are used in many thousands of hospital and medical centers, research laboratories, oil drilling facilities food irradiation plants and other sites. Some are under government control; others in the hands of universities and the private sector. Many are not properly secured or accounted for. They have been lost, stolen or abandoned.

The International Atomic Energy Agency, the IAEA, has warned that the radioactive materials needed to build a dirty bomb can be found in almost any country in the world, and that more than 100 countries may have inadequate control and monitoring programs to prevent or even detect the theft of these materials. It has located at least 20,000 operators of significant radioactive sources worldwide. They include over 10,000 radiotherapy units for medical care, 12,000 radiography units, and about 300 irradiator facilities for industrial applications.

The IAEA is a United Nations agency that sets world standards for nuclear safety and security, and acts as a watchdog against diversion or illicit use of nuclear materials. Although 134 countries are members of the IAEA and can benefit from its assistance, over 50 countries are not.

The IAEA says that while radioactive sources may number in the millions, only a small percentage have enough strength to cause serious harm because they contain potentially lethal amounts of radioactivity. They include cobalt-60, strontium-90, caesium-137 and iridium-192 used in industrial radiography, radiotherapy, industrial irradiators and thermo-electric generators. These isotopes emit intense gamma rays that are useful in killing bacteria and cancer cells. The rays can penetrate clothing and skin to enter the human body.

Fortunately, building the most potent radiological bombs using these isotopes is much more difficult for terrorists than assembling explosives to disperse less toxic material. Not only are the very dangerous substances more difficult to obtain, the successful spreading of highly radioactive particles could only be done by a terrorist organization that had access to specialised scientific knowledge.

The Federation of American Scientists says that alpha particle emitters such as plutonium and americium could also be used in a dirty bomb to create a long-term health hazard and should be closely controlled as well. The alpha particles cannot penetrate clothing or skin but if inhaled can cause cancer. Plutonium, which is used in nuclear weapons, also has non-military functions. In the 1960s and 1970s, the US government encouraged the use of plutonium in university facilities studying nuclear engineering and nuclear physics. Americium is used in smoke detectors and devices that find oil sources.

Since 1993, the IAEA has compiled a list of at least 263 confirmed cases of trafficking or unauthorised movement of radioactive materials but admits that the actual number of cases is likely to be significantly larger, not least because only about 70 states are collecting and sharing information on such trafficking with the IAEA. Of the cases brought to the IAEA's attention, the great majority appear to have involved opportunists or unsophisticated criminals, motivated by the hope of profit.

But an important fraction of the cases involved persons who expected to find buyers interested in the radioactive contents of stolen sources and their ability to cause or threaten harm. Criminals are now trading in components and materials for dirty bombs. Indeed, authorities report a dangerous surge of interest from this quarter that is complicating an already difficult task confronting governments: how to stop terrorists from acquiring powerful radiological sources.

The IAEA Director General Dr Mohamed ElBaradei says that in the wake of the terrorist attacks on the US in September 2001 using civilian airliners to cause mass casualties and damage, "and the stark awareness of the potential for radioactive sources to be used in malevolent acts, source security has taken on a new urgency." He added:



“What is needed is cradle-to-grave control of powerful radioactive sources to protect them against terrorism or theft.”

(IAEA report in 2003 on Inadequate Control of World’s Radioactive Sources; Statement on 11 March 2003 by IAEA Director General Dr Mohamed ElBaradei to the International Conference on Security of Radioactive Sources; Testimony on dirty bombs by Dr Henry Kelly, President of the Federation of American Scientists to the Senate Committee on Foreign Relations, 6 March 2003; The Washington Post 30 November 2003, “Smugglers targeting dirty bombs for profit: radioactive materials are sought worldwide,” by Joby Warrick; The Heritage Foundation background number 1723, 27 January 2004, “Dealing with Dirty Bombs: Plain Facts, Practical Solutions” by James Jay Carafano and Jack Spencer.)

### Missing Radioactive Material

The IAEA, the US Department of Energy and the Russian Federation’s Ministry for Atomic Energy agreed in June 2002 to develop a coordinated and proactive strategy to locate, recover, secure and recycle the missing, or “orphaned”, radioactive sources throughout the former Soviet Union. Many of the devices were abandoned after the Soviet breakup in 1991.

But a year after the recovery initiative was launched, the General Accounting Office, the investigative arm of the US Congress, said that thousands of containers of radioactive materials that can be used to build dirty bombs were still missing, particularly from the former Soviet Union. Meanwhile, the Los Alamos National Laboratory, an arm of the US Energy Department, concluded in a report in September 2003 that the security improvements under way “are unlikely to significantly alter the global risk picture for a few years.”

The GAO warning came in June 2003 as authorities in Thailand, acting on a tip-off from US customs agents, arrested a Thai who was offering to sell a small quantity of radioactive cesium-137 to anyone prepared to pay 240,000 US dollars. He promised to show the buyer where as much as 30 kilograms of the cesium was hidden in two separate stashes across the border in Laos that reportedly came from the former Soviet Union.

The Thai affair is just one of many trafficking cases in recent years stretching from Russia and the former Soviet republics, to Europe, Asia, Africa and Latin America that show the radioactive materials needed to build dirty bombs could emerge nearly anywhere.

(International Herald Tribune 12 November 2002, “Dirty Bomb fears spur a hunt for Soviet relics,” by Joby Warrick of the Washington Post; Asian Wall Street Journal 18 June 2003, “Seizure triggers dirty bomb fear,” by Shawn W Crispin and Gary Fields; Financial Times 18 June 2003, “Dirty bomb materials in Africa heighten terror concern,”; Asian Wall Street Journal 1 August 2003, “Did Thai teacher want to help make bombs, or just a quick profit?”, by James Hookway; CBS News 10 November 2003, “US dirty

bomb danger real,”; Washington Post 7 December 2003, “Dirty bomb rockets vanish: arms made in Caucasus feared sold to terrorists,” by Joby Warrick.)

### Al-Qaeda and the Dirty Bomb

The BBC reported in January 2003 that British officials had presented it with evidence which they claimed showed that Al-Qaeda had been trying to assemble radioactive material to build a radiological bomb and may have succeeded in assembling a small dirty bomb in a nuclear laboratory in the Afghan city of Herat before US-led forces invaded Afghanistan in October 2001 to oust the Taliban regime which had allowed Al-Qaeda and Osama bin Laden to train terrorists and organize international terrorist operations from Afghanistan. The alleged dirty bomb was never recovered. But British officials said that Al-Qaeda certainly had the expertise to build another. They showed the BBC Al-Qaeda training manuals that set out details on how to use a dirty bomb to maximum effect.

(BBC 31 January 2003, “Al-Qaeda was making dirty bomb,” by Frank Gardner; The Washington Post 30 November 2003, “Smugglers targeting dirty bombs for profit: radioactive materials are sought worldwide,” by Joby Warrick.)

### Use

No dirty bomb attacks have ever been recorded. But according to the Council on Foreign Relations in New York, a United Nations report stated that Iraq tested a one-ton radiological bomb in 1987. It said Iraq did not pursue the experiment because the radiation levels generated by the bomb were not deadly enough to make it effective against military targets.

However, many counter-terrorism officials and analysts fear that a dirty bomb attack by terrorists, to carry their fight to a new threshold of horror, is inevitable. Eliza Manningham-Buller, the Director-General of MI5, Britain’s domestic security service, said in June 2003 that it was only a matter of time before a terrorist attack using chemical, biological, radiological or nuclear technology was launched by Al-Qaeda or its affiliates against a big city in the West. “My conclusion, based on the intelligence we have uncovered, is that we are faced with the realistic possibility of some form of unconventional attack,” she said.

The widespread availability of radiological bomb sources prompted scientists at the Los Alamos National Laboratory in the US to conclude, in a study released in September 2003, that a dirty bomb “attack somewhere in the world is overdue.”

“Radiological terrorism is a very plausible threat,” said Steven Koonin, a physicist and national security expert, who is provost of the California Institute of Technology.

(Financial Times 18 June 2003, “Dirty bomb materials in Africa heighten terror concern,”; The Washington Post 30 November 2003, “Smugglers targeting dirty bombs for profit: radioactive materials are sought worldwide,” by Joby Warrick; International Herald Tribune 8 March 2002, “Materials at hand for a dirty bomb,” by James Glanz and Andrew C. Revkin of the New York Times.)

### The US Dirty Bomber

In June 2002, the US government announced that it had arrested Jose Padilla, an American citizen and suspected Al-Qaeda operative, on his return to the US, thus disrupting “an unfolding terrorist plot to attack the United States by exploding a radioactive ‘dirty bomb’.” Padilla, a former Chicago gang member with a long and criminal record, had been in detention since May 2002 when he was taken into custody at Chicago O’Hare International Airport after arriving on a flight from Pakistan. He was carrying over \$US 10,000 in cash.

US Attorney General John Ashcroft said that Padilla, who had converted to Islam also also the names Abdullah al Mujajir and Ibrahim Padilla, trained with Al-Qaeda, including studying how to wire explosive devices and researching radiological dispersion devices. Ashcroft said that Al-Qaeda knew that as a US citizen, Padilla would be able to travel freely in America without drawing attention to himself. He added that Padilla, aged about 32, was exploring a plan to build and explode a radioactive bomb.

(Official Department of Justice transcript 10 June 2002 of the statement by US Attorney General John Ashcroft regarding the transfer of Abdullah Al Muhajir (born Jose Padilla) to the Department of Defence as an enemy combatant;

In August 2002, US prosecutors revealed further details in the case against Padilla in documents presented to a New York court. It said that after his release from prison in the US in the early 1990s, Padilla traveled to Pakistan, Egypt, Saudi Arabia and Afghanistan, and became closely associated with the Al-Qaeda network, meeting with senior leaders of the group on several occasions while in Afghanistan and Pakistan in 2001 and 2002. The government told the court that Padilla discussed with senior Al-Qaeda operatives terrorist attacks in the US, including the plan to detonate a dirty bomb.

An unclassified memo by a special adviser to the US defence department on terrorist suspects filed separately with the New York court said that Padilla conducted research on a “uranium-enhanced” explosive device at an Al-Qaeda safehouse in Lahore, Pakistan, and that he planned to use radioactive material stolen in the US to build it. Prosecutors said that information about Padilla’s activities came from several confidential sources, including two Al-Qaeda associates being detained outside the US.

US officials said that Padilla had proposed the plan to build and detonate a radiological device, possibly in the US capital, Washington, to Abu Zubaydah, then Al-Qaeda’s top terrorism coordinator and a senior lieutenant of Osama bin Laden. Zubaydah was arrested in Pakistan in March 2002 and handed over to the US for interrogation. US

officials said that Padilla first met Zubaydah in Afghanistan in 2001 and that they later travelled together to several locations in Pakistan.

(US Government response on 28 August 2002 to, and motion to dismiss, an amended petition for a writ of habeas corpus for Jose Padilla, in the US District Court for the southern district of New York; Official transcript of press conference on 10 June 2002 by Deputy US Defence Secretary Paul Wolfowitz and FBI Director Robert Mueller; ABC news of the US 10 June 2002, "Officials: dirty bomb plot disrupted."; CNN 28 August 2002, "Prosecutors: suspect did 'dirty bomb' research in Pakistan.")

In June 2002, US President George Bush designated Padilla as an "enemy combatant," which meant the military could hold him indefinitely without bringing him to trial or giving him access to a lawyer. Bush had signed an order transferring Padilla to the custody of the US defence department, saying that he represented a "continuing, present and grave danger" to national security. The president's authority was challenged by Padilla's lawyers and in December 2003 the US Second Circuit Court of Appeals, in a 2-1 ruling, said it was illegal for the government to hold him in military custody and said he should be released within 30 days. The court said that the government could transfer Padilla to a civilian authority. The US government described the court's decision as flawed and said it would seek to halt the ruling pending further judicial review.

(The White House order to the Secretary of Defence signed 9 June 2002 by the US President; CNN 17 November 2003, "Dirty bomb suspect appeals detention," by Phil Hirschhorn and Deborah Feyerick; Reuters 18 December 2003, "US to seek stay of court ruling on Padilla.")

The US Supreme Court announced on 20 February 2004 that it would rule on this crucial – and fiercely debated – element of President Bush's legal strategy in the war against terrorism: his assertion of authority to declare US citizens captured on American soil "enemy combatants" and detain them indefinitely without charges or access to counsel. The justices outlined an expedited briefing schedule that would enable them to hear the case by the last week of April 2004 and decide it by July.

(Washington Post 21 February 2004, "Court accepts case of 'dirty bomb' suspect" by Charles Lane.)

How far advanced was the plot to build and explode a dirty bomb in the US, how well qualified was Padilla to build it, and did he have associates or co-conspirators in America?

US officials admit the plan had not progressed far. FBI Director Robert Mueller said it was "in the discussion stage. And it had not gone, as far as we know, much past the discussion stage, but there were substantial discussions undertaken." US officials would not comment on whether Padilla had co-conspirators in America.

But some analysts were sceptical about Padilla's technical qualifications as an explosives expert, saying that he had brought Al-Qaeda "laughably inaccurate" instructions to make a hydrogen bomb taken from the Internet. Padilla was urged by terrorist commanders to focus on a conventional explosive combined with radioactive material. These analysts said that his arrest indicated that Al-Qaeda was turning to "irregulars" such as Padilla and Richard Reid - a British citizen accused of trying to blow up an American Airlines flight from Paris to Miami in December 2001 using one of his shoes as a bomb - to carry out attacks instead of highly trained and disciplined agents like those responsible for the devastation in New York and Washington in September 2001.

(Official transcript of press conference on 10 June 2002 by Deputy US Defence Secretary Paul Wolfowitz and FBI Director Robert Mueller; CBS 16 June 2002, "Report: Padilla was told to lower sights."; Time magazine 11 June 2002, "The dirty bomb suspect: lots of questions, few answers," by Tony Karon.)

### The British Dirty Bomber

Still, concerns about the risk of terrorists getting and using dirty bombs intensified in December 2003 when US prosecutors said that a British arms dealer, held in the US on charges of trying to sell shoulder-fired missiles to shoot down airliners, would face additional charges of plotting to procure a dirty bomb. Hemant Lakhani, 68, who was born in India but holds a British passport, was arrested in August 2003 in an sting operation involving intelligence agencies from the US, Britain and Russia. He was detained at a hotel near Newark International Airport and charged with trying to sell a missile imported from Russia to an FBI informant.

(Reuters 19 December 2003, "British man faces dirty bomb charge in US," by Hugh Bronstein; BBC news 19 December 2003, "Briton faces dirty bomb charge.")

### Nuclear Terrorism

There is no evidence that Al-Qaeda or any other terrorist group has nuclear weapons. But they have shown interest in acquiring them. In the mid-1990s, Al-Qaeda agents tried repeatedly – though without success – to purchase bomb-grade highly enriched uranium in Africa, Europe and Russia. In November 2001, Osama bin Laden announced that he had obtained a nuclear weapon, but US intelligence officials dismissed his claims. Documents recovered from Afghanistan after the fall of the Taliban regime also described Al-Qaeda's nuclear ambitions. The CIA believes that bin Laden was seeking to acquire or develop a nuclear device.

(Q&A on terrorism and making a nuclear bomb on the website of the US Council on Foreign Relations in cooperation with the Markle Foundation; Christian Science Monitor 5 December 2001, "Loose nukes," by Peter Grier; CNN 17 November 2001, "Al-Qaeda documents, manuals found in Kabul: papers reveal plans to construct nuclear weapons."; CNN 22 April 2002, "Zubaydah: Al-Qaeda had 'dirty bomb' know-how," by Jamie McIntyre.)

Nuclear weapons are in the hands of only eight countries (nine if North Korea has at least two crude bombs, as the CIA suspects) and they are closely guarded, although concerns have been expressed about the security of some military facilities, notably in Pakistan and the former Soviet Union. But theft or diversion of bomb-grade material from civilian nuclear facilities, or a physical attack or act of sabotage designed to cause an uncontrolled release of radioactivity into the surrounding environment, are considered a bigger risk.

There are some 440 nuclear power reactors operating around the world to generate electricity. There are approximately 650 nuclear research reactors designed to produce radiation sources used in medicine, industry, agriculture and for research. Less than 290 of these relatively small reactors are working. There are also 250 nuclear fuel cycle plants, including uranium mills and facilities that convert, enrich, store and reprocess nuclear material.

(Washington Post report in the Asian Wall Street Journal, 5 January 2004, "US boosts Musharraf security," by Dana Priest; New York Times 28 November 2001, "How secure is Pakistan's Plutonium," by Mansoor Ijaz and R James Woolsey; International Atomic Energy Agency press release 1 November 2002, Calculating the New Global Nuclear Terrorism Threat.)

But could terrorists build a nuclear bomb? Experts say it would not be easy. Several very difficult problems would have to be solved simultaneously. Acquiring the fissionable material to generate a nuclear explosion is the single most difficult step. At least 25 kilograms (55 pounds) of highly enriched uranium would be needed to make a crude bomb, or roughly 8 kilograms (17.6 pounds) of plutonium, a much more difficult and dangerous material to work with.

Other difficult problems would include recruiting scientific experts in a broad range of disciplines, obtaining specialised industrial equipment and avoiding the chemical and radiological hazards inherent in working with nuclear materials and high explosives. This would probably take many years. Iraq, for instance, tried throughout the 1980s and 1990s to build a nuclear bomb but failed – despite ample funding, readily available infrastructure and equipment, and a dedicated research team. The task would be even harder for a terrorist group without the resources of a state.

But experts note that building a crude, bulky, low-yield nuclear weapon that could be smuggled to its target by ship, container or truck would be far easier than making the compact, reliable, high-yield weapons found in US arsenals – and might well also be easier than stealing a nuclear warhead. The potential consequences of terrorists acquiring a nuclear explosive device could be so devastating and disruptive that it must be a matter of serious concern, even if the chances of it happening appear slim.

(International Atomic Energy Agency press release 1 November 2002, Calculating the New Global Nuclear Terrorism Threat; New York Times 12 November

2001, “Loose Nukes,” by Steven Erlanger; Q&A on terrorism and making a nuclear bomb on the website of the US Council on Foreign Relations in cooperation with the Markle Foundation.)

A study by the US Institute for Science and International Security in 2002 concluded that Al-Qaeda would be capable of building a crude nuclear bomb – one that could be delivered by ship or truck – if it had the right amount of enriched uranium, about 45 kilograms, or 100 pounds. Other experts say that 60 kilograms would be needed to make a first-generation bomb similar to the one that the US used in 1945 to destroy the Japanese city of Hiroshima and help bring about the surrender of Japan and the end of World War II.

(New York Times report in the International Herald Tribune 10 September 2002, “Security proves a long, hard endeavor,” by Todd S. Purdum; New York Times, 23 September 2002, “Nuclear dangers beyond Iraq,” by Michael Levi.)

The US and other governments have established programs to keep fissionable materials for making nuclear bombs out of terrorists’ hands. Since 1994, the US has spent several billion dollars in collaboration with Russia to secure nuclear weapons and materials in the former Soviet Union and Yugoslavia and to provide alternative jobs to some of the more than 10,000 former Soviet weapons designers, nuclear scientists and energy experts who were employed during the Cold War.

But in November 2003 a report funded by the US-based Nuclear Threat Initiative, an anti-proliferation watchdog headed by former US Senator and arms control expert Sam Nunn, said that only a tiny fraction of a total \$US 20 billion pledged by the Group of Eight industrial powers in 2002 to secure global stockpiles of nuclear, chemical and biological materials had been spent or even allocated to specific projects. In 2002, less than half Russia’s fissile material was judged to be secured.

Nunn said that the war in Iraq had distracted the US and diverted resources away from the need to secure weapons of mass destruction in regions such as the former Soviet Union. The report pointed out that there are some 100 poorly protected research reactors, spread across 40 countries, containing weapons-usable uranium and that to construct a nuclear bomb, terrorists would need to steal only a small amount of nuclear material, about enough to fit in a suitcase. “The threat is outpacing the response,” Nunn said.

(Reuters 18 November 2003, “West faulted for poor wmd security.”; Radio Free Europe report in Asia Times 12 December 2002, “US sees dollars in Russian nuclear technology,” by Nikola Krastev.)

The uranium used in nuclear power plants to generate electricity is useless for nuclear bomb building. But the plutonium used in – and produced by – civilian power plants could theoretically be used in a nuclear weapon, although separating such “reactor grade” plutonium is a difficult and hazardous process. Though the threat that terrorists

could use this route to make a bomb is considered small, nuclear specialists insist that countries around the world should do more to monitor and protect stores of plutonium.

(Q&A on terrorism and making a nuclear bomb on the website of the US Council on Foreign Relations in cooperation with the Markle Foundation.)

Officials who track wmd-related trafficking say they cannot rule out the possibility of terrorists acquiring enough fissile material to build a primitive nuclear weapon, given the vulnerability of such material to theft and the increasing professionalism of nuclear smuggling. According to the International Atomic Energy Agency, since 1993 there have been around 400 instances of trafficking in nuclear fuel or other radioactive materials.

In all, about 26 pounds of enriched uranium and almost a pound of plutonium have been seized in various arrests – far less than terrorists would need to make a single bomb. But the reported instances may not reflect actual scale of trafficking.

(New York Times report in the International Herald Tribune 10 September 2002, “Security proves a long, hard endeavor,” by Todd S. Purdum.)

### Open Sesame

Officials and counter-terrorism experts in the US, Europe, Asia, Australia and many other parts of the world have warned that the next step up in mega-terrorism may be an attack using chemical, biological or nuclear weapons or, more likely, a radiological or “dirty” bomb that uses conventional explosives to disperse deadly radioactive material, causing mass panic as well as significant casualties. Some say that a dirty bomb attack is inevitable sooner or later.

Those who fear such an attack believe that weapons of mass destruction and terrorism have become interlocking threats – and could, if effective safeguards are not put in place quickly, fuse in an extremely dangerous challenge to global security and stability.

The recent exposure of an extensive and long-running nuclear black market that let several countries get weapons technology from Pakistan has heightened such fears. Continuing revelations about clandestine international trafficking in technology and equipment to build nuclear weapons since the late 1980s show how widely available this dangerous material and knowledge had become.

In his televised confession on 4 February 2004, Pakistani scientist Abdul Qadir Khan said that he had sold nuclear secrets to foreign countries. According to Pakistani, US and IAEA officials, those countries included Libya, Iran and North Korea. They received equipment that was either exported from Pakistan or procured in Europe, Asia and South Africa by Dr Khan and his network of associates. They had developed a sophisticated supply chain that offered technical advice, parts, shipping and customer



support, prompting the head of the International Atomic Energy Agency Mohamed ElBaradei to call it the “Wal-Mart of private-sector proliferation.” Yet many analysts say the Khan network could not have operated without the knowledge and approval at very senior levels of Pakistan’s armed forces and intelligence service.

The equipment included centrifuges for enriching uranium so that it can be used in nuclear warheads. In the case of Libya, which agreed in December 2003 to get rid of its weapons of mass destruction under international inspection, the Pakistan-based supply network provided not just centrifuge systems for making highly enriched uranium but also nuclear warhead designs of an old (1960s vintage) but reliable type that appear to have originated from China in the early 1980s. One of the things investigators urgently want to discover is whether North Korea, Iran and perhaps other countries and terrorist groups received nuclear bomb making instructions and materials via the Khan black market.

(Associated Press 4 February 2004, “Experts worry terrorists have nuke plans”; Daily Telegraph of London online 6 February 2004, “The nuclear supermarket” by Anton La Guardia, Ahmed Rashid and Alec Russell; US White House text of speech on 11 February 2004 by President George Bush at the National Defence University in Washington DC on new measures to counter the threat of weapons of mass destruction; Council on Foreign Relations, 12 February 2004, Q&A: Black Market Nuclear Proliferation; New York Times 12 February 2004, “A tale of nuclear proliferation: how Pakistani built his network” by William J. Broad, David E. Sanger and Raymond Bonner; Washington Post 15 February 2004, “Arms plans are traced to China” by Joby Warrick and Peter Slevin; Asian Wall Street Journal 18 February 2004, “The story doesn’t end with Khan” by Bernard-Henri Levy; Far Eastern Economic Review 19 February 2004, “Spreading fear” by Murray Hiebert; Reuters 17 February 2004, “China nuke plans surface in Libya” by Jonathan Ansfield; New York Times 19 February 2004, “Roots of Pakistan atomic scandal traced to Europe” by Craig S. Smith; Washington Post 21 February 2004, “Libya made plutonium, nuclear watchdog says” by Peter Slevin.)

Graham Allison, a former US assistant secretary of defence who now directs the Belfer Centre for Science and International Affairs at Harvard’s Kennedy School of Government is on record as saying that he believes “the single largest, most urgent threat to Americans today is nuclear terrorism. The ship, I think, is one of the most dangerous delivery devices. A weapon or (fissile) material in the belly of a ship has been one of the nightmare scenarios for people who think about how nuclear weapons might arrive in the US.”

He says that he worries about the devastation and disruption that would be caused by a nuclear terrorist attack on a major port-city. Even if a small nuclear bomb exploded in New York or Boston, it would kill half a million people, he adds.

(Reuters report in the shipping section of Singapore’s Business Times 12 December 2003, “Terror attack is worst nightmare for US ports.”)

“No weapon is beyond the planning of terrorist groups, particularly the Al-Qaeda network,” the US Energy Secretary Spencer Abraham said in August 2003 when he announced an agreement with the Dutch government to install sophisticated detection equipment to find nuclear and other radioactive material hidden in containers at Europe’s largest seaport in Rotterdam, the Netherlands. “Terrorist groups and rogue nations trying to smuggle components for nuclear weapons is a serious threat that must be addressed,” he added. Rotterdam, which handles more than 300 million metric tons of cargo each year, is one of the first sites outside the US to use the new detection equipment. It was developed by US Department of Energy laboratories as part of America’s nuclear security programme to guard against proliferation of weapons materials.

(Press release by US Department of Energy 13 August 2003, “US and Dutch governments launch effort to detect terrorist shipments of nuclear material.”)

### Hiroshima and Nagasaki Atomic Bombs

The two nuclear bombs dropped by the US on Hiroshima and Nagasaki in Japan in August 1945 to hasten the end of World War II destroyed both cities, turning them into mass graveyards poisoned by radioactive contamination.

The fissile core of the Hiroshima bomb was made of highly enriched Uranium 235. It released a fireball of energy equivalent to 12.5 (kilotons) million tons of TNT that caused severe burns and loss of eyesight. Thermal burns of bare skin occurred as far as 3.5 kilometers from ground zero, directly below the explosion point about 580 meters above central Hiroshima. Most people exposed to thermal rays within a one-kilometer radius of ground zero died. Tiles and glass melted in the intense heat. All combustible materials were consumed.

An atomic explosion causes an enormous shock wave followed instantaneously by a rapid expansion of air in an immensely powerful blast with typhonic winds. Concrete buildings near ground zero (thus hit by the blast from above) had ceilings crushed and windows and doors blown out. Many people were trapped under fallen structures and burned to death. Being anywhere within 500 meters of ground zero was fatal. People exposed at distances of 3 to 5 kilometers later showed symptoms of after-effects, including cancers induced by radiation.

The death count in Hiroshima in the wake of the atomic bombing is estimated to have reached 140,000 by the end of December, 1945. In Nagasaki, which was razed by a plutonium bomb, around 70,000 people were thought to have died by the end of 1945.

(Damages Caused by Atomic Bombs, taken from the website of the Avalon Project at Yale Law school; The Atomic Bombing of Hiroshima, an eyewitness account by Father P. Siemes, taken from the same website.)

### Impact on Global Trade

The use of either a nuclear or radiological bomb in a major port-city would cut the arteries of commercial container cargo shipping if it was known or suspected that the device had been shipped in. It would bring much of the world's trade to a halt and severely damage the global economy, as governments in the affected country and economies that did extensive seaborne trade with it scrambled to put in place security measures to better protect their people, cities and economies.

Such measures would be drastic and include:

... lengthy cargo inspections in receiving as well as originating ports,

...or even the complete closure of ports for an indefinite period,

while extra checks and safeguards were put in place to allay public anxiety.

One of the first things the US government did after the terrorist attacks in September, 2001, was to shut US airspace and ground all civilian flights for four days – a security measure to protect the American public that had severe repercussions on aviation, travel, tourism and business around the world, including in Asia, as hundreds of scheduled flights had to be cancelled or diverted. It also closed US ports for two days.

(Speech 1 December 2003 by Frits Bolkestein, European Commission official in charge of the Internal Market, Taxation and Customs of the European Union, to Freight Forwarders; Reuters report in Business Times of Singapore shipping section 12 December, 2003, "Terror attack is worst nightmare for US ports; Speech by Jack Short, Secretary General of the European Conference of Ministers of Transport, to the Irish Exporters Association in Dublin, Ireland, on 21 March, 2003.)

Are sea container shipping and its land links in the global supply chain vulnerable to a major terrorist attack? Many officials in the US, Asia and Europe believe so. Here are some samples:

The US Customs and Border Protection Commissioner Robert Bonner:

"The system is vulnerable to exploitation by international terrorist organisations. A cargo container loaded up with any kind of nuclear or radiological weapon would have a potentially catastrophic effect, not only in loss of life but to the US economy and the economies of every trading nation in the world. While the threat is hopefully small, the effects could be so great that anybody in my position would have to be concerned."

(International Herald Tribune 23 September 2003, Q&A interview with US Customs Commissioner Robert Bonner on "Screening cargo for terror shipments.")

Singapore's Deputy Prime Minister Lee Hsien Loong:

"One major challenge to the marine industry is global terrorism. The 9/11 attacks, and subsequently the discovery of the Jemaah Islamiyah group in Singapore, showed that terrorism is a problem of global scale. Terrorists are operating through

international networks. There is growing concern that their next attack may be via ships and shipping containers. This would not only inflict heavy casualties and damage to property, but also disrupt the wheels of international commerce. This can potentially cripple international trade...”

(Speech by Singapore’s Deputy Prime Minister Lee Hsien Loong 10 August 2002, at the Jurong Shipyard Pte Ltd National Day Observance Ceremony.)

Frits Bolkestein, European Commission member in charge of the EU’s Internal Market, Taxation and Customs:

“The massive flow of containers around the world makes global maritime transport an essential part of the world economy and makes it almost impossible to picture the disastrous consequences which a terrorist attack would have on global freight supply systems. Borders would be closed; ships might not be allowed to enter ports. There would be a complete disruption of the global supply chain with enormous consequences for the global economy.”

(Speech 1 December 2003 by Frits Bolkestein, European Commission official in charge of the Internal Market, Taxation and Customs of the European Union, to Freight Forwarders.)

### Shipping and containers

Shipping plays a pivotal role in world trade. Most international trade – about 80% of the total by volume – is carried by sea. World maritime trade set a record in 2002, reaching almost 5.9 billion metric tons, including oil and bulk commodities, and general cargo packed mainly in containers. This commerce is worth at least \$US 1 trillion a year.

About half the world’s trade by value, and 90% of the general cargo, is transported in containers - standardised steel boxes that are usually 20-foot or 40-foot long, and are commonly referred to as “twenty-foot equivalent units” (TEUs) or “forty-foot equivalent units” (FEUs).

Most seaborne international trade is carried by at least 46,000 ships calling at over 2,800 ports. There are more than 1.2 million seafarers and hundreds of thousands of port workers.

Apart from ships and ports, the millions of uniform steel containers that carry most of today’s general cargo around the world are a security nightmare. Once loaded and sealed, inspection is a problem. The contents of a container can be misrepresented and undeclared items hidden inside with relative ease. Even when sealed, containers can be surreptitiously opened and then closed again without great difficulty to remove or add contents. This is a made-to-order method of transport for terrorists – just as it is for drug and other contraband smugglers.

It is estimated that as many as 15 million containers are in circulation and that over 230 million containers move through the world's ports each year. Nearly seven million containers arrive by sea in US ports alone each year carrying goods worth more than \$US 730 billion. Checks of containers reaching American ports by sea increased to 5.2% of total arrivals by September 2003, from 2% two years earlier. But worldwide, less than 1% of shipped cargo is screened.

Like the seaborne trading system, the global supply chain is vast, complex and vulnerable to terrorist infiltration and attack. There are some 40,000 freight forwarders worldwide who employ as many as 10 million people.

While most of the world's trade travels by sea, the ocean voyage is only one link in an extensive chain. A typical door-to-door journey for general cargo in a shipping container will involve some 25 different handlers, generate up to 40 different sets of documents, use two or three other transport modes like truck or rail, and pass through as many as 15 different locations, from the factory or warehouse where the goods are loaded into a container, to the point of unloading and delivery.

(OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003; United Nations Conference on Trade and Development (UNCTAD) annual Review of Maritime Transport, 7 November 2003; The Economist 4 April 2002, Special Report on Container Trade: When Trade and Security Clash.)

### Supply Chain Security

The very nature and scale of the globalised trading system makes it vulnerable to terrorist attack. Seaborne trade and its land connections in the global supply chain have become increasingly open. They are liable to be targeted or exploited by terrorist groups that have the capability to strike in different parts of the world and aim to cause as much fear and chaos as possible to advance their ends.

Apart from ships and ports, the millions of uniform steel containers that carry most of today's general cargo around the world are a security nightmare. Once loaded and sealed, inspection is a problem. The contents of a container can be misrepresented and undeclared items hidden inside with relative ease. Even when sealed, containers can be surreptitiously opened and then closed again without great difficulty to remove or add contents. This is a made-to-order method of transport for terrorists – just as it is for drug and other contraband smugglers.

In recent decades, the Asia-Pacific region has followed its main trade partners in North America and Europe in deregulating and encouraging freer trade and commerce to foster economic growth. In the wake of the terrorist attacks on the US in September 2001, and the subsequent plots and bombings in Indonesia and other parts of Southeast Asia, the region and its leading trade partners must tighten security at sea, in ports and throughout the logistic supply chains that have become critical to modern manufacturing and service industries.

The global economy is built on integrated supply chains that feed components and other materials to users just before they are required. That way, inventory costs are kept low. If the supply chains are disrupted, it will have repercussions around the world, profoundly affecting business confidence at a time when economic recovery is still tentative and the outlook uncertain.

On the other hand, if security measures start to slow global trade significantly or make it much more expensive, the world economy will suffer. Striking the right balance between free trade and security is critically important and it must be done in 2004 as a wide range of new counter-terrorist measures take effect.

(Paper on the Costs of Maritime Terrorism and Piracy and the Benefits of Working Together presented by the Australian Department of Foreign Affairs and Trade to the APEC high-level meeting on Maritime Security and Cooperation in Manila, 8-9 September 2003; Presentation on Modern Maritime Threats and Strategies by Danny Chan, Director of EDC Consultants to Singapore's Institute of Defence and Strategic Studies on 16 October 2003; RAND Europe report "Seacurity": Improving the Security of the Global Sea-Container Shipping System, 8 September 2003; Speech 1 December 2003 page 2 by Frits Bolkestein, European Commission official in charge of the Internal Market, Taxation and Customs of the European Union, to Freight Forwarders.)

#### Costs of a Terrorist Attack

How much would a major terrorist attack on shipping or maritime infrastructure cost and what impact would it have on just-in-time delivery for companies?

Since such an attack hasn't happened, no one knows the precise answers to these questions. They would, of course, depend on the severity of the attack, the extent of casualties and damage, and the nature of public and government reaction to them.

#### US West Coast Port Lockout

In a bitter dispute between unions and management, all 29 American ports on the west coast of the US closed for nearly a fortnight in October 2002. These ports handle approximately 42% of US maritime imports and exports by value. The shutdown delayed more than 200 ships carrying 300,000 containers. As a result, railcars and inter-modal shipments were parked across the US as American and Asia exports filled warehouses, freezers and grain elevators. Ships made costly diversions to other ports and many businesses laid off workers or cut production.

The lockout and the weeks of efforts to clear the cargo back-log imposed substantial costs on American exporters and importers. One estimate of the direct costs of delivery delay alone put it at \$US 467 million. But the port closure had been foreseen. So companies were able to take steps well in advance to build stocks to mitigate its impact.

This is something they could not do in a port-related terrorist attack that came without warning.

During the shutdown, importers with time-sensitive and perishable cargo faced the greatest losses. Many other importers said that if the closure were prolonged, they were ready to consider radical supply-chain changes to meet their production and retail needs. These included paying for more expensive air freight and/or longer ocean shipping through the Panama Canal and ports on the east coast of the US, to changing their supplier base to non-Asian sources.

The disruption and clearance of the backlog lasted for about a month. It cost Asian economies an average of 0.4% of nominal GDP. The negative impact in Hong Kong, Singapore and Malaysia was estimated to be as high as 1.1% of nominal GDP.

(OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003, pages 17 & 18; Australian Department of Foreign Affairs and Trade Economic Analytical Unit, Global Issues Brief on the Economic Costs of Terrorism, 7 April 2003.)

#### Just-in-time to Just-in-case

Fear of a terrorist strike that would disrupt transport systems may already have added tens billions of dollars in costs to the US economy since September 2001. One Michigan State University study indicates that manufacturers in the US increased their inventory holdings in 2002 as a precaution against further terrorist trouble. In 2001, average large American companies held 1.36 months of stocks, down from 1.57 months in the early 1990s. The 2001 figure was projected to rise to 1.43 months in 2002 as firms held more “just-in-case” inventory. According to the study, the threat of terrorist attacks had erased about half the logistics productivity gains realised in the US in the previous decade, and could add between \$US50 billion and \$US80 billion to business costs in the US alone in 2002.

(Traffic World 1 April 2002, “Supply Chain Sustainability and Cost in the New War Economy,” by Donald Bowserbox and David Closs; Fortune magazine 3 February 2003, “The Friction Economy.”)

#### Economic and Trade Impacts of 9/11

The use of hijacked civilian airlines as cruise missiles to strike New York and Washington in September 2001 fundamentally changed the way security is approached in the transport sector. It exposed a whole new degree of vulnerability in the global transport system. Following the attacks, US air space closed for four days and ports for two. Border crossings were closed along the frontier with Canada, where half a million vehicles cross daily, leading to severe logjams. Some companies dependent of just-in-time deliveries, for example in the automotive industry, experienced a breakdown in the

supply chains. New security measures were introduced, initially for aviation. But they were quickly extended to other transport modes as well.

The terrorist attacks on the US resulted directly in the destruction of physical assets estimated at \$US14 billion for private businesses, \$US1.5 billion for state and local governments, and \$US0.7 billion for the federal government. Cleanup and rescue costs have been estimated at \$US11 billion. The attacks occurred when business growth in the US was slowing and they further dented waning confidence. Economic growth forecasts were quickly revised downwards by an additional 0.5 percentage points. Specific sectors like airlines, tourism and hotels were hit particularly hard. The insurance sector faced an unprecedented catastrophe, with losses estimated between \$US30 – 60 billion.

In response to the crisis, the US Federal Reserve injected massive amounts of liquidity into the economy. Interest rates tumbled to as low as 1.2% on 19 September, 2001, eight days after the terrorists struck. Central Banks around the world followed suit in taking action to lower interest rates substantially. The fiscal response was rapid too. In the US, an emergency spending package of some \$US40 billion was approved. An additional \$US5 billion in direct grants and \$US 10 billion in loans were given to US airlines to help them stay in business until travel picked up again. Stricter limits applied in Europe, where Belgium's Sabena airline and Swissair went bankrupt.

The costs of trading, at least in the short-term, have increased because of the additional security requirements and additional risks associated with trade. But there is great uncertainty, both on the size of these extra costs and on their likely long-term repercussions on trade. Administrative costs of trade, including customs, are estimated to amount to between 2% and 7% of the value of trade. Transport costs vary from about 1% of the value for goods like pharmaceuticals, to over 20% for fertilisers. The risk is that higher transport and trading costs will reduce exports and imports. Some econometric studies estimate that each 1% increase in such costs can cut trade by between 2% and 3%. While this may be an over-estimate, it does illustrate the potential risk of a major terrorist attack on the transport system.

(Speech by Jack Short, Secretary General of the European Conference of Ministers of Transport, to the Irish Exporters Association in Dublin, Ireland, on 21 March, 2003.)

### Port Security War Game

In October 2002, the US-based Conference Board of senior business executives and economists teamed up with the consulting firm Booz Allen and Hamilton to assemble 85 high-level government and industry representatives to test their responses to a major crisis involving terrorist attacks using cargo containers shipped through North American ports. The war game scenario was based on a coordinated terrorist plot to smuggle in and detonate both radiological and conventional bombs.



The discovery of the first dirty bomb in the Port of Savannah created public panic that was magnified three days later by the detection of a second such bomb in a container transported from Thailand to the Port of Halifax in Canada and from there by truck to Minneapolis in the US. In response, US authorities closed all ports and border crossings indefinitely and stocks on Wall Street plunged while petrol prices skyrocketed because ships were unable to deliver fuel to a US economy that is heavily reliant on imported energy.

The war game showed that even with round-the-clock inspections assisted by the US National Guard, only 20% of incoming containers could be physically checked. So the need to reopen ports to prevent even more serious economic disruption quickly became evident. On day 10, Canada reopened its ports to ships unable to reach US ports as measures were agreed between the two countries to fast-track container inspections on the US-Canada border. Two days later, all US ports reopened for round-the-clock operations.

However on day 20, a railcar carrying a container of wine imported from France exploded in downtown Chicago. The container, which had a conventional bomb hidden among the wine crates, entered the US through the New York-New Jersey port complex. Share prices on Wall Street again plummeted, forcing a halt to trading. Port activity in the US gradually returned to normal over the next few weeks and by day 52, all cargo backlogs were reported to have been cleared. The container supply chain backlog took several weeks more to stabilise.

By the end of the war game on day 92, total estimated losses to the US economy amounted to 58 billion US dollars.

(Conference Board and Booz Allen Hamilton port security war game, October 2002.)

Three broad conclusions emerge from the US west coast port shutdown, the Conference Board/Booz Allen Hamilton war gaming exercise, and the experience of Yemen after the terrorist attack on the tanker Limburg in October 2002:

...Costs linked to terror-related trade disruptions rise exponentially over time, up to a certain threshold where supply chains undergo radical changes;

...Major terrorist attacks using ships or cargo containers are likely to have the biggest impact on global trade because they are part of an inter-connected supply chain that stretches deep into the heart of many leading national economies;

...The total costs of any such attacks are likely to be measured in tens of billions of dollars.

Safeguards

There are two important things to note, however.

First, measures are being put in place by many leading international trading nations to prevent a serious maritime-related terrorist attack from happening. A lot of these security safeguards have already been applied and others will take effect in 2004.

Second, the potential damage from a major terrorist attack using ships or cargo containers is many times higher than the known and projected costs of the new maritime security requirements.

(Australian Department of Foreign Affairs and Trade Economic Analytical Unit, Global Issues Brief on the Economic Costs of Terrorism, 7 April 2003.)

These security requirements are both multilateral and bilateral. A new international regime for port and ship security regime mandated by the International Maritime Organisation will take effect from July, 2004. Checks on seafarers are also being tightened. The International Labour Organisation adopted a convention in June 2003 that provides for new seafarer identification documents with a biometric imprint. In addition, various measures are being implemented by a wide range of countries outside the framework of the United Nations. Many are driven by initiatives put in place by the US to guard against terrorist strikes. Concerned at America's vulnerability to a catastrophic terrorist attack from the sea, the US government has turned its attention to securing seaborne trade and the interlocking global supply chain.

The aim of all these anti-terrorist measures is to "retrofit" the global system of commerce to make it more secure while not unnecessarily impeding the flow of goods.

(Testimony 9 September 2003 by Robert Bonner, Commissioner of US Customs and Border Protection, before the Senate Commerce, Science and Transportation Committee.)

### IMO Regime

In the wake of the terrorist attacks on the US in September 2001, the International Maritime Organisation, the IMO, the United Nations agency with primary responsibility for multilateral agreements on international maritime rules and issues, reviewed the state of maritime security. The IMO Conference of Contracting Governments to the International for the Safety of Life at Sea, held from 9 to 13 December 2002, adopted a number of amendments to the 1974 Safety of Life at Sea Convention (SOLAS). The most far-reaching are encompassed in the new International Ship and Port Facility Code, the ISPS Code.

The Code contains detailed security-related requirements for governments, port authorities and shipping companies in a mandatory section (Part A), together with a series of guidelines on how to meet these requirements in a second, non-mandatory section (Part B). The IMO Conference in December 2002 also adopted a series of resolutions

designed to add weight to the amendments, encourage the application of the measures to ships and port facilities not covered by the Code and pave the way for future work on the subject.

The mandatory measures include:

...installation of satellite-based automatic tracking and identity systems, including security alert signals to the nearest shore-based authorities in case a vessel is threatened, on all ships of 500 gross tons and above on international voyages. The alert system is to consist of two buttons, one on the bridge and one elsewhere in the ship. When pressed, they do not sound an alarm on board; instead they let authorities on shore know the identity of the vessel, its precise location and the time. However, there is no corresponding requirement for governments or national authorities to install equipment ashore to receive the signals from ships although many leading trading nations have decided to do so;

...development of ship security plans for all vessels engaged in international commerce;

...appointing a ship security officer, who will be responsible for crew training, applying the ship security plan and coordinating with port security officers. However, there is no provision for formally certifying their competence;

...preparing and implementing port security plans after making port vulnerability assessments according to specified guidelines;

...appointing a port security officer, along with compulsory security training for port workers.

These measures are to apply from July, 2004.

(IMO website, "IMO adopts comprehensive maritime security measures," 9-13 December 2002; Speech by Jack Short, Secretary General of the European Conference of Ministers of Transport, to the Irish Exporters Association in Dublin, Ireland, on 21 March, 2003, page 6; International Shipping Federation website key issues, "Maritime security," and "Automatic Identification Systems.")

#### US-driven Measures

After the terrorist attacks on the US in September 2001, a number of countries took steps to tighten maritime security, container shipments and their land links in the global supply chain. The measures included increased screening, boarding and inspection of ships; heightened surveillance of port facilities and maritime infrastructure; and enforcing exclusion zones around sensitive port areas and ships such as military vessels and cruise liners.

The US has tightened security for ships, ports and container cargo movements more than most other countries. The US has also insisted that its measures have to be adopted by other states and foreign companies if they want to continue to trade freely with the world's largest market. The US-led measures include the Container Security Initiative, or CSI, and the Customs-Trade Partnership against Terrorism, or C-TPAT, to enhance security throughout the supply chain.

## CSI

The CSI, first announced in January 2002, was operational in at least 16 major seaports in Europe, Canada and Asia by the end of 2003. Most of the 20 leading mega-ports that ship cargo containers to the US are in Asia and Europe. The 16 ports where CSI was deployed included: Rotterdam, Holland; LeHavre, France; Bremerhaven and Hamburg, Germany; Antwerp, Belgium; Yokohama, Japan; Goteborg, Sweden; Felixstowe, Britain; Genoa and La Spezia, Italy; Vancouver, Montreal and Halifax, Canada; Pusan, South Korea; Singapore; and Hong Kong.

The aim of the programme is to identify and check a relatively small number of cargo containers for possible weapons of mass destruction or dangerous radioactive substances that terrorists might try to place inside any one of the more than 230 million standard steel boxes criss-crossing the globe each year by sea. The checking of suspect cargo bound for the US is done at foreign ports, before the containers are shipped to America.

To help with the identification and screening, small teams of officers from the US Customs and Border Protection agency within the Department of Homeland Security are stationed in participating foreign ports. The US has offered CSI members reciprocal checking rights in its ports. Both Japan and Canada have taken up the offer, so that containers bound for Japan and Canada by sea from the US are selectively screened.

As a result of the programme, US officials say that checks of sea containers increased to 5.2% of total arrivals by September 2003, from 2% two years earlier.

(US Department of Homeland Security webpage, "CSI in brief."; Speech on 9 September 2003 by Robert Bonner, Commissioner of US Customs and Border Protection to The Heritage Foundation.)

## CSI Core Parts

The CSI program has several core parts: first, using intelligence and computer data banks to profile and identify high-risk cargo. For example, cargo from a country known to harbor terrorists could raise a warning flag. So could containers with odd routings or suspicious manifests – the documents supposed to list their contents.

A second core part of the CSI program is to use gamma ray and x-ray imaging systems to screen suspect containers at the earliest possible point on their journey to the

US. This non-invasive screening does not normally take more than a few minutes. Only if something unusual is spotted is a container opened and the contents physically inspected.

A third core part of the CSI program is to develop more secure containers so that once they are packed and locked, they can be tracked electronically and their contents monitored throughout their journey to the point of unpacking. The objective, of course, is to prevent tampering and alert authorities in case it happens.

(US Department of Homeland Security webpage, "Frequently asked questions about CSI.")

#### CSI Phase One and Phase Two

Phase one of CSI is focused on implementing the program at the 20 foreign ports that ship 68% of all the sea cargo containers entering the US. The governments of countries in which nineteen of the 20 top ports are located have agreed to participate in CSI, including several major ports in China. Kioshiung in Taiwan is expected to become the last of the top 20 ports to join the CSI by late 2003 or early 2004.

China's agreement in September 2003 to join the CSI and allow US customs inspectors into its ports was very significant and paved the way for the Washington and Beijing to sign a maritime agreement in December 2003 based free trade and open market principles. More containers move between China and the US than any other nation in the world, with over 3.2 million shipped between the two each year. Nearly 32% of total annual US container sea cargo moves between the two countries.

Meanwhile, phase two of CSI is underway to expand it to other ports that ship substantial amounts of cargo to the US and have the infrastructure and technology in place to take part in the program. The governments of Malaysia, Sri Lanka, South Africa and Sweden have already joined phase two of CSI and the US plans to enlarge the programme to include ports in the Middle East, such as Dubai, in Latin America, and in at least 11 additional European ports, including Gioia Tauro, Livorno and Naples in Italy.

Once phase two of CSI becomes fully operational, approximately 80% of the 7 million sea cargo containers shipped to the US each year will be covered.

(Department of Homeland Security webpage 12 June 2003, "Secretary Ridge announces Container Security Initiative's Phase II."; Department of Homeland Security webpage 18 September 2003, "China signs declaration of principles with Container Security Initiative to target and pre-screen cargo destined for the US."; US Department of Transportation press release 8 December 2003, "Transportation Secretary Mineta signs far-reaching Maritime Agreement with China; New York Times report in International Herald Tribune 13 June 2003, "US to put inspectors in Muslim cargo ports," by Philip Shenon.")

C-TPAT

The CSI encompasses the seaborne leg of a container's journey to the point at which it leaves the landing port. The Customs-Trade Partnership Against Terrorism, or C-TPAT, aims to secure other parts of the global supply chain, including sea and air cargo moving on land from its point of loading or to its point of unloading.

So far, over 4,000 companies are enrolled in C-TPAT, not only US importers, but also all major air, sea, rail and trucking carriers, a large number of brokers and forwarders, as well as domestic port and terminal operators. In August 2003, the US opened C-TPAT for the first time to foreign manufacturers – initially to those based in Mexico but subsequently to a select group located in other parts of the world.

(US Department of Homeland Security webpage, "CSI in brief."; Speech on 9 September 2003 by Robert Bonner, Commissioner of US Customs and Border Protection to The Heritage Foundation.)

#### The 24-hour Rule

Since February 2003, the US has also insisted that detailed and accurate cargo declarations must be submitted to American customs authorities 24 hours before a container is to be loaded onto a vessel bound for the US. Before that, US Customs would accept information in a final bill of lading up to 30 days after a shipment's arrival in the US.

Meanwhile, the European Union is set to adopt a different 24-hour rule. It will require that cargo information be provided to EU customs authorities 24 hours before the goods arrive in the EU, not 24 hours before loading in the country of exports.

(Speech 1 December 2003 by Frits Bolkestein, European Commission official in charge of the Internal Market, Taxation and Customs of the European Union, to Freight Forwarders.)

#### Europe Joins In

The European Commission, the executive arm of the European Union, indicated in June 2003 that it had finally found a common approach to container security with the US, after months of dispute with eight of its fifteen members as well as the US government. The eight – Holland, Belgium, France, Germany, Italy, Britain, Spain and Sweden – had agreed to participate in the US-led CSI. The container traffic from their ports to the US covered approximately 85% of all containers shipped from Europe to America.

The EC had launched legal action, called an infringement proceeding, against its eight members, arguing that the EU, not individual member states, had authority over customs agreements with countries outside the EU. The EC also complained that the bilateral CSI deals between America and the eight EU member states effectively gave

cargo passing through the participating ports preferential treatment, and that shippers would divert US-bound goods to those ports from others in the EU, creating unfair competition. US officials said that the terrorist threat was urgent and that there wasn't time to negotiate a deal with the EU, a notoriously bureaucratic and slow-move behemoth. The eight EU states that joined the CSI insisted that they had the right to determine national policy. The EC said its aim was to ensure that all EU members applied the same security-related customs controls and that container traffic was not diverted.

Whether it was a case of the EC bowing to the inevitable or not, it signed an agreement in November 2003 to include container and supply chain security within the existing 1997 EU-US agreement on customs cooperation and mutual assistance. The EC said that a joint working group would meet promptly to work out the technical details of the accord. And in a significant enlargement of the scope of the CSI, the EC said that the agreement would ensure not only the security of container cargo trade between the EU and the US but also the security of containers from all locations that are imported into, transhipped through, or transit the EU and the US.

The US Mission to the EU said that the joint working group would address issues related to the expansion of the CSI to all 15 members of the EU and the 10 pending new members, as well as other matters related to container security.

(EC Customs authority statement on agreement initialled with the US on transport security cooperation, 18 November 2003; Statement by US Mission to the EU, 18 November 2003; Joint statement of the US Customs and Border Protection and the European Commission, 25 June 2003; Speech 1 December 2003 by Frits Bolkestein, European Commission official in charge of the Internal Market, Taxation and Customs of the European Union, to Freight Forwarders; EU factsheet on container security; AP report in Business Times of Singapore shipping section, 29 January 2003.)

## APEC

In Asia and the Pacific, APEC, the Asia Pacific Economic Cooperation forum, is being used by the US and other members of the group concerned about the economic and trade impacts of terrorism to keep countries in the region focused in the issue. This is significant because the 21 economies in APEC account for about 60% of the world GDP and half of its trade.

At their summit in Mexico in 2002, APEC leaders agreed on measures to improve security of trade and prevent money laundering for terrorist or other purposes. At their annual meeting in Thailand in October 2003, they expanded APEC's role in combating terrorism by deciding, among other things, to establish a regional trade and financial security initiative at the Asian Development Bank in Manila. This facility, the first of its kind at a multilateral development bank, will enhance security at seaports and in the cargo container trade as well as at airports. APEC has been active in promoting its 2002 Secure Trade in the APEC Region (STAR) programme, holding a series of seminars and

conferences to publicise the new multilateral and bilateral maritime security measures and encourage all APEC economies to adopt them in a timely and coordinated manner.

(International Defence and Strategic Studies, Singapore, Commentary 38, 3 November 2003, "APEC Summit: Regionalising the War on Terror," by Arabinda Acharya; Tech Central Station website 4 November 2003, "Trade and Terrorism," by Alan Oxley; White House fact sheet 21 October 2003, "New APEC initiatives on counterterrorism; Australian Prime Minister's Office press release 21 October 2003, "Australian APEC counter-terrorism initiatives."; APEC Secretariat information document on Counter Terrorism Action Plan submitted to APEC senior officials meeting in Bangkok, 14-15 October, 2003; Speech by Ambassador Makarim Wibisono, Chairman of the APEC Counter Terrorism Task Force, to the APEC High Level Conference on Maritime Security in Manila, 8-9 September 2003.)

### Costs of Enhanced Security

The OECD report estimates that new maritime and supply chain security measures will require an initial investment by the shipping and port industry and its users of at least \$US1.3 billion, and will increase operating costs by \$US730 million dollars per year thereafter. This estimate of global costs may be conservative but most officials and private sector executives involved in the shipping and cargo container industries agree that while security is expensive, insecurity is even more expensive.

The US Coast Guard has said that the cost of implementing tighter security measures in US ports is about \$US 1.5 billion dollars in the first year and \$US7.3 billion dollars over 10 years, while the American Association of Port Authorities says that Congress has appropriated only \$US513 million since the September 2001 terrorists attacks to help cover these costs.

(Straits Times of Singapore 22 January 2003, "Satellite-based ship tracking system soon," by KC Vijayan and Nicholas Fang; OECD report on Security in Maritime Transport: Risk Factors and Economic Impact, July 2003, pages 2 & 3; Reuters 17 November 2003, "US anti-terror measure to raise shipping costs," by Peter Starck; Reuters report in Business Times of Singapore shipping section 12 December, 2003, "Terror attack is worst nightmare for US ports.")

### Compliance and Deadline Difficulties

The costs of complying with the new IMO and US rules are mainly in delays to shipments, added security staff or security-related work, and installing security equipment. For some shippers, shipowners and port authorities, the added costs have become a significant concern. Contentious issues include who will pay for the enhanced security, how costs will be shared between governments and the private sector, and the extent to which they will be passed on to consumers.



The problems in complying with the new maritime security rules surfaced graphically in the US itself at the end of 2003 when nearly half the nation's ships and about 80% of its ports, ferry terminals and fuel-chemical tank farms failed to meet a 31 December deadline for submitting plans showing how they will deal with terrorism threats. It is obvious that security measures to prevent attacks on the US from the sea are lagging well behind moves to protect airports and planes since the September 2001 strikes on New York and Washington from the air. US Coast Guard officials said that the deadline for submitting the plans was met by about 5,200 of 10,000 ships told to submit them and only 1,100 of 5,000 port facilities – despite potential heavy fines for laggards.

The Association of American Port Authorities said that one reason ships, ports and other maritime facilities had missed the deadline was because they were given too little time. The US government did not finalise what it wanted until 22 October 2003, after the industry had been told it would have six months to submit the security plans. They have to be implemented by 1 July 2004, when the Coast Guard can start banning ships and shutting ports that don't comply.

The International Maritime Organisation has told shipowners that they must implement the IMO'S security measures in 2004 or face severe restrictions on their movements. Tankers, cargo ships, cruise liners and other large vessels travelling to foreign destinations must obtain the IMO's International Ship and Port Facility Security certificate by 1 July 2004 or they will no longer be admitted into foreign ports. By November 2003, only a small fraction of the world's 46,000 ocean-going ships had got their certificates. The price tag for the changes mandated by the IMO is put at between \$US30,000 and \$US60,000 per vessel, but owners have no choice if they want to continue operating after mid-2004. The IMO insists that it will not extend the deadline.

These new security measures, combined with an assertion of port state control, will put enormous pressure on all ships and ports that are involved in international trade to comply with the standards set by the IMO and powerful trading nations or blocs such as the US and the European Union. Failure by a port to comply with the security standards by 1 July 2004 will allow other countries to delay or bar vessels which visited that port. The US Coast Guard has warned that it will expect statements of compliance for the last 10 ports visited by any ship wanting to dock in the US.

The costs for non-compliers could be high. For example, many Caribbean nations say they won't be able to meet the standards in time. As a result, they could face severe restrictions in their \$US20 billion trade with the US. Their inability to pay for the needed improvements could benefit China as the Caribbean loses its main competitive edge – the short time it takes to ship to the US.

The OECD Maritime Transport Committee has a study underway to assess the risks faced in various links of the sea-land transport chain, the potential cost of measures to counter those risks, and who should bear the costs. In a separate study, the OECD is looking at how to verify the identity of cargoes loaded for transport and how to prevent containers being tampered with on route. The goal is to ensure the integrity of container

cargoes throughout their journey, from loading to final destination. The World Customs Union resolved in June 2002 to take a series of steps to protect the international trade supply chain from acts of terrorism or other criminal activities and established a task force of customs experts to implement them.

There is concern in both government and industry circles in Europe, the Asia-Pacific region and elsewhere that the correct balance be found between tighter maritime security and the efficient flow of trade. There was also concern among Asian governments that their sovereignty and jurisdiction must not be unnecessarily reduced or compromised by CSI and other anti-terrorist measures being advocated by the US and other Western nations. But despite such concerns, all the major Asian trading economies have joined or agreed to join the CSI.

(Associated Press report in The Atlanta Journal-Constitution 31 December 2003, "US ports, ships miss security deadline," by Leslie Miller; AFP report in Business Times of Singapore shipping section 26 November 2003, "Industry slow to face up to potential attacks."; Reuters report in same section of same paper 16 December 2003, "Caribbean states struggling to meet new port security laws; Speech by Jack Short, Secretary General of the European Conference of Ministers of Transport, to the Irish Exporters Association in Dublin, Ireland, on 21 March, 2003, page 7; Speech 1 December 2003 by Frits Bolkestein, European Commission official in charge of the Internal Market, Taxation and Customs of the European Union, to Freight Forwarders; Business Times of Singapore shipping section 25 July 2003, "US govt urged to review funding of security measures," by Beth Jinks; Same newspaper and section, 5 August 2003, "Studies undertaken to probe supply chain security," by Donald Urquhart.)

#### Pressures to Join CSI

Goods arriving in the US by sea from foreign ports that are not in the CSI can expect to be delayed for at least two or three days while they are inspected. They may not be allowed into the US at all in future unless they come via a transshipment hub port that is CSI-compliant. Either way, this will be extremely costly for exporters to the US from non-CSI countries. Non-participants in C-TPAT will also face greater scrutiny and delays when shipping to the US. Participants in both programmes stand to gain a competitive advantage over non-participants.

The threat of differential treatment between CSI and non-CSI ports has been one of the main factors behind the decision of countries like Malaysia, Sri Lanka, Sweden and South Africa that are not among the 20 leading shipment ports to the US to sign onto the CSI program.

Likewise, large shippers have been quick to seek C-TPAT validation from American customs for their supply chain security to expedite their US-bound shipments. Smaller ports and some small shippers have complained, saying that they cannot afford to compete with CSI and C-TPAT participants and that their shipments will be penalised as a result of their non-participation.

Still, this is clearly the intent of both US schemes – to get maximum effective compliance. And the strategy is working.

(World Shipping Council submission on Operation Safe Commerce to the Transportation Security Administration of the US Department of Transportation, 5 December 2002; Business Day, Johannesburg, report carried on allAfrica.com 8 December 2003, “US gets its way on cargo security,” by Linda Ensor.)

### Compliance Benefits

There will be other offsetting benefits for those who comply with US security requirements. The benefits, which can amount to significant savings, should include faster processing when containers reach US ports, lower insurance costs and fewer losses due to theft.

The new security measures, when effectively applied and extended on a more universal basis, could help streamline global commerce as well as make it more secure. The security requirements will make it more difficult to falsify the identification of goods for customs declaration purposes and thereby reduce the scope for corruption and cut transaction costs.

For example, estimated losses from cargo theft worldwide range from 30 billion US dollars per year to as high as 50 billion dollars, with most of the thefts involving cargo containers being transported by trucks. However, seaports and container staging areas are also prone to containerised cargo theft. The installation of container scanners in the Port of Rotterdam cost 15 million Euros. But in one year, their use generated 88 million Euros in customs and tax revenue that would otherwise have been lost, even though only 2% of containers, on average, are subjected to checks in the port.

(European Commission proposal to the European Parliament on enhancing maritime transport security, 2 May, 2003, page 14.)

### Technology Innovation

One of the greatest potential benefits of both CSI and C-TPAT is the technology innovation they are spurring as governments and the private sector, increasingly in collaboration, seek new ways to overcome problems raised by fears of terrorism. A global seaborne transport system and supply chain network that are made more secure by advanced technology would be an enormous boon to trade, business and job creation.

Many companies are involved in efforts to develop and introduce a new generation of IT-enabled “smart and secure” containers that can be tracked remotely at all times when loaded. Such containers will have electronic seals, as well as physical locking systems, to prevent unauthorised opening. They will also contain sensors to detect explosive, radioactive, and harmful chemical or biological substances. This should ensure

much better security from the point at which the container is loaded and shut to the point at which it is unloaded.

Multinational companies and other trade-reliant firms have a vested interest in hastening this result because they do not want any interruption in the supply chain that would keep their goods out of world markets and cost them money.

For example, leading port operators and shippers have banded together in the Strategic Council for Security Technology to develop the world's largest wireless cargo container tracking system. It operates in over 45 countries and 700 locations. Meanwhile, Hewlett-Packard, the computer and IT equipment manufacturer, is working on its own systems to ensure that its cargo is secure. The aim is not just to create new technologies but to make better use of existing ones by integrating them. The company is testing an electronic system to make sure the bill of lading matches a container's cargo by checking and rechecking manifests electronically at various points along the journey.

The US government is unlikely to set a timeline to force the US shipping industry to adopt any particular technology to meet the requirements of the CSI. Instead, the industry-wide retrofit is likely to be incremental and not be dictated by official fiat. The US Department of Transportation is working with the Department of Homeland Security to test new technologies, such as radio frequency identification (RFID) tags and ultra-wideband communications systems for container tracking.

But more than two years after the terrorist attacks on the US, the two departments have not settled on the standards that a smart container should have. They are still debating whether it should provide a complete electronic manifest on the contents or whether that data should be maintained in back-end systems operated by the shipping companies. US supermarket chain, Wal-Mart Stores Inc, for example, has decided to install RFID tags down to the package level in its supply chain so that every item in the container can be checked.

(SIMTAG, Safe InterModal Transport Across the Globe, progress update, Brussels, 12 May 2003; Secure Trade in the APEC Region: The Bangkok/Laem Chabang Efficient and Secure Trade Project, October 2003; Presentation on Smart & Secure Tradelanes by Gary Gilbert, Chief Security Officers, Hutchison Port Holdings, Hong Kong, to the APEC High-Level Meeting on Maritime Security Cooperation in Manila 8-9 September 2003; Federal Computer Week 8 September 2003, "Securing the homeland: one container at a time," by Judi Hasson; Computerworld, 29 October 2003, "Former CIA chief sees need for greater network resilience, market incentives," by Dan Verton.)

### How Secure?

So how secure is global maritime trade and the inter-linked supply chain? It is clear that before the devastating terrorist attacks on the US just over two years ago, there were gaping vulnerabilities not just in aviation security but in maritime and land transport security as well.

Since then, the international community has started to take action to improve the security of ships and ports that are major players in global trade. But progress has been patchy. Some companies and countries are moving faster and more effectively than others. And some of the laggards complain that they cannot afford the new security measures.

Steps are being taken by the international community, spurred by the US, to ensure the integrity of containerised cargo at sea and on land. But given the scale of maritime trade and the even vaster scale of commerce moving through the global supply chain using cargo containers, the task is immense and far from complete.

The US Customs and Border Protection Commissioner Raymond Bonner admitted as much when he told a US Senate Committee in September 2003 that although good progress had been made in implementing the Container Security Initiative in major international ports in Asia, Europe and Canada, “we still have much work to do to get CSI fully operational.”

Accurate and timely intelligence of any terrorist threat is the key to success. Those looking for signs of weapons of mass destruction or radiological substances among the many millions of containers moving around the world carrying legitimate cargo are checking for the proverbial needle in the haystack. And they are under pressure to do so without unnecessarily slowing global trade or increasing its cost.

(US Department of Homeland Security, speech on 13 November 2003 by Secretary Tom Ridge to the Chicago Economic Club; US General Accounting Office, Maritime Security: Progress Made in Implementing Maritime Transportation Security Act, but Concerns Remain, Statement of Margaret Wrightson, Director, Homeland Security and Justice Issues, before the US Senate Committee on Commerce, Science and Transportation, 9 September 2003; GovExec.com 18 December 2003, “Homeland Security officials accused of foot dragging on port security,” by Chloe Albanesius.)

### The ABC Affair

The good news is that there hasn't been a terrorist attack involving the movement of cargo containers around the world, on sea or on land.

But in September 2003, ABC News of the US claimed to have exposed a crucial weakness in America's port security system by shipping depleted uranium to Los Angeles in a container from Jakarta in late July – a week before the terrorist bombing of the Marriott Hotel that killed 12 people and wounded scores more. It is important to note that depleted uranium metal, while used in armor piercing anti-tank rockets, cannot be used to make a nuclear weapon. Indeed importing depleted uranium into the US is legal; only the failure to declare it is not.

The undeclared shipment appeared to raise some disturbing questions about maritime and supply chain security. The 15 pounds (6.8 kilograms) cylinder of depleted uranium, which is about the size of a soda can, was encased in a steel pipe with lead lining to suppress the material's radioactive signature. It was then packed in a specially padded suitcase that was placed in a teak trunk along with other furniture put into a container in Jakarta for shipment to the US.

The first question is how – in a country such as Indonesia with extensive connections to the Al-Qaeda and JI network - was an odd suitcase put into the container with no checks being made as to why it was there? Indonesia is not a CSI participant. ABC News says it took only a few days in Jakarta to find a shipper willing to send a container to America with almost no questions asked. The shipment was handled by Maersk Logistics, part of the giant Maersk shipping company, based in Copenhagen, Denmark.

According to ABC News, Maersk company officials said that their procedures did not require their agents to inspect containers loaded outside their pier area. Maersk provided what it called “door-to-door service,” which allowed the container to be loaded at a furniture store, and that it relied on screening by Indonesian government officials to validate the shipping contents. One good thing to come out of the episode is that Maersk said that the ABC News findings had led it to investigate and review its procedures overseas.

The container with the depleted uranium departed Jakarta in a feeder vessel for the Malaysian port of Tanjung Pelapas where it was loaded onto a Maersk container ship. Malaysia had not yet joined the CSI. So there was no screening of the container before it was put onto the Maersk ship. In Singapore, the next port of call and a CSI member, the container simply stayed on the ship while other boxes were loaded. So it was not checked in Singapore either.

The depleted uranium arrived at the Port of Los Angeles on August 23. Because the container had come from Jakarta, it was targeted for screening by US Customs and Border Protection agents using hand-held radiation pagers and X-ray scanners. The container was cleared because nothing suspicious or harmful was detected and it left the port on September 2.

US Customs insists that the screening system worked as it should because depleted uranium is not dangerous and does not emit the same radioactive signals as highly enriched uranium used in nuclear weapons. Yet Tom Cochran, a nuclear physicist at the Natural Resources Defense Council in the US which lent the depleted uranium to ABC News for the venture, says that the highly enriched uranium used for nuclear weapons would, with slightly thicker (one third of a centimeter) lead shielding, give off a signature similar to depleted uranium in the screening devices currently being used by homeland security officials at American ports. If the depleted uranium cylinder had been highly enriched uranium, 15 pounds are sufficient to construct a 1-kiloton nuclear device

with an explosive power equal to 1,000 tons of TNT. This is small on the scale of nuclear weapons but could still do a lot of damage in an urban setting.

On the other hand, a crude terrorist nuclear bomb made of highly enriched uranium or plutonium would probably weigh at least a ton and be larger and less well shielded than compact modern weapons, increasing the chance that authorities could detect and, hopefully, defuse it.

This technical, but important, debate begs the question why the depleted uranium encased in a steel pipe with lead lining wasn't picked up by the X-ray scanner in the Port of Los Angeles as a potential pipe or suitcase bomb and the container opened for a physical check.

(ABC News 10 September 2003, "Border breach? Customs fails to detect depleted uranium – again"; ABC News 11 September 2003, "How safe are our borders?"; Washington Post 11 September 2003, "ABC ships uranium overseas for story," by Howard Kurtz; Lloyd's List 18 September 2003, "Bush feels the heat of maritime security worries"; Natural Resources Defense Council website, "The ABC News nuclear smuggling experiment: the sequel.")

### The State of Play

What this episode suggests is that maritime and container cargo security has moved from a position of extreme vulnerability to terrorist abuse two years ago, to one of semi-vulnerability while new counter-terrorist measures are implemented and bedded down and more powerful and effective technology applied to thwart terrorist infiltration or attacks. Radiation detectors and X-ray machines at major ports in North America, Europe, Asia and Australia and New Zealand are good and getting better. But they are not foolproof and only a small minority of containers are actually scanned.

This period of semi-vulnerability could last for at least several more years if – as appears likely – not all companies and countries move with the same speed or effectiveness to tighten security at ports, on ships and in the global container cargo supply chain. Overall security will only be as good as the weakest link in the chain.

### ILO Biometric IDs

In a move to guard against terrorist infiltrating the ranks of the world's 1.2 million seafarers, the International Labour Organization, the ILO, adopted a convention in June 2003 for new seafarer identification documents with a biometric imprint. This is an electronic recording of a person's unique physical characteristic, usually a thumb or eye retina print, that allows immigration authorities to use a scanner or computer to match the ID with its bearer. The aim is to get a universal ID card for seafarers that will be identical throughout the world, easy to verify in a scan and hard to forge.

The US had already tightened its entry requirements for foreign seafarers. Under the ILO convention, governments are to issue the new ID cards to their seafarer nationals and permanent residents. Possession of a valid ID card is intended to allow seafarers to disembark from ships in a foreign port for shore leave, transit to another country, transfer to another vessel or repatriation unless there are pressing security reasons for not doing so or clear grounds for doubting the authenticity of the bearer's ID.

(ILO website, "C185 Seafarers' Identity Documents Convention (Revised), 2003," adopted by the ILO's General Conference on 19 June 2003; Business Times of Singapore shipping section, 12 June 2003, "High-tech ID for seafarers moves closer to reality," by Donald Urquhart.)

However, some critics say that biometric technology is far from foolproof and that while it can improve security in some situations, its costs more frequently far outweigh its benefits. Even the most advanced systems falsely reject a small proportion of legitimate users, and falsely accept illegitimate ones. Both the US and Europe plan to start issuing biometric passports as soon as 2004 while biometric national ID cards are being adopted in a number of countries in Asia, Europe and the Middle East. But the critics assert that biometrics seem to be attractive to politicians because the technology, long familiar from science-fiction and spy films, gives the impression that something dramatic is being done to improve security. Moreover, a widespread system of biometric seafarer IDs would not necessarily unmask terrorists who managed to get and carry them.

(The Economist 6 December 2003, leader on "Biometrics: too flaky to trust," and in the Technology Quarterly of the same issue of the magazine, "Prepare to be scanned.;" BBC East Asia Today programme 20 June 2003, interview with David Osler maritime expert and industrial editor of Lloyd's List in London.)

### Lax Ship Regulation

Counter-terrorism and law enforcement authorities trying to stop weapons of mass destruction from getting into the hands of countries and terrorist organizations that want to acquire them face a major problem. International shipping is so vast and so unevenly regulated that seagoing vessels owned by governments or their agents, or other interests with criminal or terrorist aims, can easily find the flag of another state under which to operate.

To operate internationally, vessels must be listed in a recognised ship register of a country, which will then allow the vessel to fly its flag. In effect, the state of registration will then become the ship's "flag state". The flag state's obligations and responsibilities towards ships carrying its flag are set out in the United Nations Law of the Sea Convention, UNCLOS.

All registers are supposed to check and control the safety standards and working conditions of vessels on their books. Some open flag registers – like most traditional national registers for ships – are well run and maintain high or adequate standards. But



others fall well short of the norms needed to maintain maritime-related security in an age of weapons of mass destruction and increasing international terrorism.

(OECD report on Ownership and Control of Ships, March 2003.)

### Criminal and Terrorist Havens

Global seaborne trade is intensely competitive. To cut costs, many shipowners have taken their vessels off national registers and put them on open registers. At least 40 states around the world, most of them developing countries, sanction open registers, or flags of convenience, as a way of making money. These nations rent their flags to shipowners of any nationality; some don't even have access to the sea. Land-locked Mongolia, for example, opened a register in March 2003 in Singapore, one of the world's busiest seaports. Land-locked Bolivia, too, has a register for foreign ships. Flags of convenience generally provide greater anonymity as well as tax benefits and lower costs than national registers.

Flags of convenience emerged in the 1920s, when US shipowners started flying the Panamanian flag to avoid US laws then in effect that prohibited the manufacture, importation or sale of alcoholic beverages. The later spread of flag registers to places such as Liberia and Cyprus was encouraged by shipping companies eager to find homeports in countries with low taxes and wages, as well as not-so-strenuous regulation.

Today, the main flag of convenience fleets in terms of gross tonnage belong to Panama, Liberia, the Bahamas, Malta, Cyprus, Marshall Islands in the Pacific, and Saint Vincent and the Grenadines in the Caribbean. However, many of the smaller, newer flag states - such as Cambodia and Tonga - have had some of the fastest rates of growth and some of the worst records for criminal and terrorist connections. A surge of newcomers to the flag of convenience industry in the 1990s brought some register standards to new lows.

The flag of convenience registers compete for business. Some offer quick and cheap ship registration, often on-line at the click of a button with few questions asked. As a result, terrorists and as well as those who smuggle arms, drugs, people and contraband can thrive in the poorly regulated havens which the flag of convenience system provides.

(Washington Post 31 December 2002, "15 freighters believed to be linked to Al-Qaeda", by John Mintz; Business Times of Singapore shipping section 12 March 2003, "Mongolia sets up shipping register," by Donald Urquhart; Asian Wall Street Journal 24 October 2002, "Bolivia flag of convenience proves all too convenient for raft of dodgy shippers," by Marc Lifsher; The International Transport Workers' Federation Flags of Convenience Campaign Update September 2003.)

### The Decline of National Registers

Nearly half the global shipping fleet by tonnage, 48% in 2003, sails under flags of convenience, according to the International Transport Workers' Federation, the ITF, including the majority of large tankers, bulk carriers and cruise liners. In the eleven years to 2001, flags of convenience more than doubled their share of container shipping to just over 43%, from slightly more than 21% in 1990.

Ships flagged in the European Union fell by 37% in the ten years to 1995. Just over 13% of the world's shipping now sails under the flag of an EU member state, down from 32% in 1970. Why? Because many ships formerly on registers in the Japan and Western countries, and on other well-managed but relatively expensive national registers, have shifted to open or foreign flag registers to minimise tax and other costs. Moreover in some cases, the real owners of the vessels want to make themselves as anonymous as possible, and not always for fiscal or liability reasons. Terrorists can see the attractions of opaque ownership in shipping and have often used it to camouflage their activities.

(The International Transport Workers' Federation Flags of Convenience Campaign Update September 2003; EU website, Overview of maritime transport policy; The Japanese Shipowners' Association report on The Current State of Japanese Shipping, March 2003.)

#### The Mask of Corporate Ownership

To guard against a serious terrorist crime involving a ship, law enforcement authorities need to find out who actually owns the vessel and controls its movements and operations. Real, or beneficial, ownership is not just disguised by the widespread practice of putting ships on foreign registers. The long-established tradition of having companies, not individuals, own ships also makes checking ownership, for security reasons, difficult. The practice can be justified in commercial terms: individuals naturally want to avoid personal liability for any accidents their ships may have. But the practice of making the registered owner or owners of a ship no more than a "brass plate" corporation provides an almost impenetrable cloak of anonymity.

Open, or flag-of-convenience, registers – which by definition do not have any nationality requirements – are the easiest places in which to register vessels that are covered by complex legal and corporate arrangements. But it is not so much the registers themselves that enable reclusive owners to hide their identities, as the corporate arrangements that are widely and legally available in many countries to shroud the ultimate owners in anonymity, even if they are terrorists.

(OECD report on Ownership and Control of Ships, March 2003.)

The OECD Maritime Transport Committee is studying the various ways in which a cloak of secrecy can be created around the ownership of vessels. It will then identify best practices that would enhance transparency without breaching the confidentiality of commercially sensitive, but non-security-related, information.

(Speech by Jack Short, Secretary General of the European Conference of Ministers of Transport, to the Irish Exporters Association in Dublin, Ireland, on 21 March, 2003, page 7.)

Most open registers do not require audited accounts from the shipping companies that use them, including some of the largest registers, among them Panama, Liberia, Bahamas and Belize. A number do not reveal the names of shareholders or directors, as in Liberia, Bahamas and Belize. Where shareholders are named, nominees can be chosen, and a company from another jurisdiction that permits greater secrecy is put into the corporate obscurity chain between the beneficial, or actual, owner and the ship. It is easy and inexpensive for an owner to hide behind a string of companies. Bearer shares – which, as the phrase suggests, can be passed from one individual to another and carry ownership rights – are allowed in many of the countries that offer open registers. Secrecy in the name of business confidentiality is the norm in the flag of convenience system.

(Testimony to the US House of Representatives' Armed Services Committee Merchant Marine Panel 13 June 2002, by David Cockroft, General Secretary of the International Transport Workers' Federation.)

The US argues that even though its domestic laws permit “brass plate” corporations to own ships, the use of this device to hide the identity of terrorist organisations that threaten the safety and security of ships, ports and people cannot be justified on any basis. In the US itself, the US government has the authority to require detailed ownership information through all corporate layers to ensure that vessels registered in the US comply with US documentation laws. The aim is to find out who actually controls the movements or operations of the ship, or who derives profits from its trade.

The US insists that a flag state must provide a port state (meaning the country where the vessel is calling) accurate and complete ownership information for maritime security purposes if requested. Washington has proposed that the International Maritime Organisation develop international standards so that, in cases where there are reasonable grounds for suspecting terrorist connections, the identify of the person or entity in actual control of the vessel can be speedily made known to authorised security personnel. It suggests that such standards should make clear that the person providing the information, i.e., the captain of the vessel, the agent or owner, must provide a complete and accurate account, and that the port state will continue to apply domestic law in its internal waters in cases of false reporting.

The US acknowledges that complex issues are involved. But it says that there is precedent for flexible interpretation of ownership and control in the international Customs Convention on Containers of 1972, a mode of shipping that has also raised significant maritime security concerns. This convention avoids defining the “owner” of a container. Instead, it places the onus for ensuring security on the operator – the person who, whether or not the owner of the container, has effective control of its use.

(Paper on Maritime Security: information on “ownership” and “control” of ships submitted by the US to the International Maritime Organisation on 26 March 2002 and published by the IMO.)

### Flag State Operators

The Seafarers International Research Centre, SIRC, at Cardiff University spent three years researching and analysing the regulatory capacity of 37 states that offer shipping flags, including national flags and open registers. Mongolia and Bolivia were not among them. Nor were Tonga and Tuvalu, two small Pacific island-nations whose ships have gained notoriety in recent years for their alleged connection to Al-Qaeda-linked smuggling or the trafficking of materials related to weapons of mass destruction.

The Centre's flag state audit released early in 2003, found that the Danish Second Register (DIS), the German Second Register (GIS), Kerguelen Islands, Netherlands, the Norwegian Second Register (NIS), Norway, the Philippines and Britain all had a “high” capacity to regulate the vessels on their registers. In the second category, rated as “good” performers, were Bermuda, Canary Islands, Cayman Islands, Cyprus, Estonia, Hong Kong, Isle of Man, Latvia, Madeira, Netherlands Antilles, Russia, Singapore, Turkey and Ukraine.

The audit concluded that Antigua and Barbuda, the Bahamas, Barbados, Belize, Bolivia, Equatorial Guinea, Honduras, Lebanon, Liberia, Malta, the Marshall Islands, Panama and Vanuatu had only a "modest" regulatory capacity. At the bottom of the list were Cambodia and St Vincent and the Grenadines which had a "poor" record.

Nik Winchester, one of the two SIRC researchers who carried out the study, said that a large number of open registers had failed to produce adequate regulatory regimes to ensure the safe operation of vessels, safeguard labor standards and provide transparency of vessel ownership. He said that “super unregulated” registers, such as Cambodia and Equatorial Guinea, mopped up ships considered too risky to the more established open registers, such as Panama and Liberia, thus extended the working life of such ships to operate almost free of control. “In this market for flags, the profit motive and effective regulation compete, ultimately, to the detriment of the latter”, Winchester added.

(Flag State Audit 2003 published by the Seafarers International Research Centre, SIRC, at Cardiff University.)

### Union Concerns

As of mid-2003, the International Transport Workers' Federation (ITF) had branded 29 countries as flag of convenience operators for allegedly permitting sub-standard ships to fly their flags: Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, Bolivia, Burma/Myanmar, Cambodia, Cayman Islands, Comoros, Cyprus, Equatorial Guinea, German International Ship Register (GIS), Gibraltar, Honduras, Jamaica, Lebanon, Liberia, Malta, Marshall Islands, Mauritius, Mongolia, Netherlands

Antilles, Panama, Sao Tome and Principe, St. Vincent and the Grenadines, Sri Lanka, Tonga and Vanuatu.

When declaring a ship register to be a flag of convenience, the ITF says it takes into account:

...the degree to which the flag state permits foreign-owned vessels, as distinct from national ships, to fly its flag;

...the ability and willingness of the authorities in that country to enforce international minimum social standards on its vessels, including respect for basic human and trade union rights, freedom of association and the right to collective bargaining with bona fide trade unions;

...the social record of that country: the ITF looks at the degree to which the country has ratified and enforces the conventions and recommendations of the International Labour Organisation;

...the safety and environmental record of that country: the ITF considers the country's record in ratifying the conventions of the International Maritime Organisation and enforcing them by carrying out port state control inspections and detentions of ships that are not in compliance.

The ITF continues to monitor flag states closely and reviews which ones might be designated flag of convenience operators each year. In 2002, three flag states were added to the ITF list: Comoros, Jamaica and Tonga. The same year, four flag states were removed from the list because they were no longer considered to be operating as flags of convenience: Aruba, Canary Islands, Cook Islands and Tuvalu. In 2003, Mongolia was declared a flag of convenience by the ITF which said it also appeared that Malaysia, Bangladesh and more Caribbean countries risked being put in the same category in the near future.

The ITF represents nearly 600 transport trade unions in 136 countries covering around five million seafarers and other transport workers. It has been campaigning against flags of convenience for more than 50 years. The ITF asserts that many flag of convenience ships are badly maintained and older than the average age of the rest of the world fleet. It also says that in 2001, 63% of all reported ship losses at sea, measured by tonnage, were accounted for by just 13 flag of convenience registers and that the five worst performers were Panama, Cyprus, St. Vincent and the Grenadines, Cambodia and Malta.

(The International Transport Workers' Federation Flags of Convenience Campaign Update, September 2003; The International Transport Workers' Federation Flags of Convenience Campaign Report 2001/02, July 2002.)

The Cambodian Register

The Cambodian register has been among the most notorious flag of convenience operations in recent years, so notorious that the government in Phnom Penh - under pressure from the US and the European Union - decided to withdraw the contract to run the register from the privately-owned Cambodia Shipping Corporation in August 2002 after a series of scandals involving some of the more than 1,600 Cambodian-flagged ships. The extraordinary thing is that Cambodia was allowed for so long, even after the terrorist attacks on the US in September 2001, to base its register in Singapore - a country with a government that takes security very seriously indeed.

(Lloyd's List 26 August 2002, "Cambodia to take back control of ship registry," by Marcus Hand; Business times of Singapore shipping section 14 January 2003, "ITF slams Cambodia's decision on ship registry," by Beth Jinks; AFP 14 June, "Cambodia launches probe after Cambodian-flagged ship seized off Africa.")

In June, 2002, French commandos boarded the Cambodian-registered freighter Winner in international waters in the Atlantic amid an exchange of gunfire that injured one of the 12 crew members. The troops seized more than one tonne of Colombian cocaine worth well over 100 million U.S. dollars in a cargo that was registered as scrap iron destined for Bilbao in Spain. Officials said that the raid was the result of a 15-months of surveillance involving U.S., French, Spanish and Greek authorities.

(Associated Press (AP) 14 June 2002, "French commandos seize cocaine ship."; Agence France Presse (AFP) 14 June 2002, "Greek officials arrest owners of Cambodia-flagged ship after drug bust."; AFP 17 June, "Cambodian PM gave permission to raid ship in drug bust: minister.")

But there was also an earlier terrorist connection to the Cambodian flag business that raised red warning flags in Western intelligence circles. In November, 2001, Irish customs officers found 20 million smuggled cigarettes on the Maria M, a Cambodian-registered freighter that arrived in Estonia supposedly carrying a cargo of timber. The cigarettes, concealed in the center of bales of timber, were liable to tax amounting to about three million Irish pounds. They were the largest haul of smuggled tobacco ever seized in Ireland.

Anti-terrorist officials said that the operation was organized by criminals with links to the Real IRA, a terrorist faction opposed the peace accord in Northern Ireland agreed to by the mainstream IRA, the Irish Republican Army.

(The Irish Times 8 November 2001, "Million-pound cigarette haul seized from ship," by Elaine Keogh; Baltic News Service 9 November 2001, "Smuggling haul from Estonia linked to Irish dissident republicans."; Baltic News Service 15 November 2001, "IRA contraband belongs to 20-year-old Estonian.")

Until its contract was terminated by the Phnom Penh government, the Cambodian register based in Singapore was operated by the Cambodia Shipping Corp. It claimed to

have been appointed by the Cambodian government in 1994 as the exclusive agent to register ships under the Cambodian flag. The register in Singapore opened for business in 1995 and soon attracted hundreds of ships with its offer of low fees and a 24-hour service that promised to complete the processing of applications within an hour on the strength of faxed documentation alone. From June, 2000, the Singapore office offered online ship registration. After its reactivation as an open, instead of national register, the number of vessels flying the Cambodian flag rose to 564, from just 16 in 1995. Of the 564 ships, just over 70% were reported to be owned and controlled outside Cambodia.

(Flag State Audit 2003, report on Cambodia, published by the Seafarers International Research Centre, SIRC, at Cardiff University; Business times of Singapore shipping section 14 January 2003, "ITF slams Cambodia's decision on ship registry," by Beth Jinks.)

South Korean and U.S. intelligence agencies had been concerned about an official North Korean connection to the Cambodia Shipping Corp., through a senior North Korean diplomat who was stationed for many years in Phnom Penh and was one of the founding investors in the company. Intelligence agencies had noted the inclusion of at least a dozen North Korean vessels among ships that flew the Cambodian flag.

A South Korean analyst said that such ships were suspected of smuggling North Korean ballistic missiles and components to Pakistan, Iran and Iraq and other countries in the Middle East. Indeed, the So San, an unflagged freighter from North Korea that was found to be carrying Scud missiles to Yemen under sacks of cement after it was stopped and inspected in the Indian Ocean by Spanish and US forces in December 2002, may well have been the Song Sang, a North Korean-owned freighter on the Cambodian register, but with the last two letters of the first word and the last letter of the second word freshly painted over on the hull in an effort to avoid identification.

(YaleGlobal Online reprinted in Singapore's Straits Times 22 May 2003, "Terrorism roams the high seas under flags of convenience," by Michael Richardson; International Herald Tribune 24 June 2002, Raid at sea highlights flag abuses," by Michael Richardson.)

Ships flying the Cambodian flag were also involved in numerous sinkings and collisions in which dozens of crew members were lost at sea, feared drowned. Between 1995 and 2002, at least 25 Cambodian-registered vessels were wrecked or stranded, and the register's fleet was involved in 41 recorded collisions and nine fires. Forty five of its vessels were arrested for various offenses.

So many Cambodian-flagged ships were detained in ports around the world for failing to maintain adequate safety standards and other abuses that the flag was blacklisted under the Paris Memorandum on Port State Control, which rated the Cambodian register as "very high risk".

The Paris MOU consists of 19 port state administrations in Europe, Scandinavia and Canada which aim to eliminate the operation of sub-standard ships through a harmonised system of control and information exchange. Similar arrangements exist for the Asia-Pacific region (through the Tokyo MOU), Latin America (Vina del Mar), the Mediterranean and the Caribbean. Each year, the Paris MOU issues a Blacklist of flag states whose vessels are at very high risk of being detained for poor safety standards.

The Paris MOU compiled figures that showed vessels with the Cambodian flag accounted for 8.5% of the 561 port detentions in the first four months of 2002, up from 2.5% of 697 detentions in the same period of 2001. Statistics kept by the Tokyo MOU showed that the Cambodian flag accounted for 14.7% of the 332 port detentions in the first four months of 2002, a slight improvement on the 18.6% of the 332 vessels detained by states in the MOU in the same period of 2001!

(Business times of Singapore shipping section 14 January 2003, "ITF slams Cambodia's decision on ship registry," by Beth Jinks; Lloyds List 24 June 2002, "Winner registry is the loser as Cambodia acts."; Paris Memorandum on Port State Control: [www.parismou.org](http://www.parismou.org))

Following an investigation into the Winner scandal, the Cambodian government announced in August 2002 that control of the Cambodian ship register would be taken over by Cambodia's Ministry of Public Works and Transport. However, in January 2003, the government awarded a new contract to South Korea's Cosmos Group, prompting a protest from the International Transport Workers' Federation.

The ITF General Secretary David Cockroft said that appointing another foreign contractor to run the register showed Cambodia had learned nothing and the government might well be putting the reputation of the country once again in the hands of another unaccountable offshore company. He added that Cambodia's only chance of cleaning up its register was to slim it down to ships flying a genuine national flag of Cambodia.

(Lloyds List 26 August 2003, "Cambodia to take back control of ship registry," by Marcus Hand; "ITF slams Cambodia's decision on ship registry," by Beth Jinks; ITF media release 10 January 2003.)

### The Tongan Register

In May 2002, the Privy Council of Tonga, a small Pacific island-nation run as a monarchy, announced that it would close its international ship register after repeated evidence that vessels flying the Tongan flag were involved in arms and people smuggling, some of which were linked to Al-Qaeda. An office had begun operating in Greece in 2000 and emerged as one of fastest-growing foreign flag of convenience registers in the world by attracting nearly 200 ships to sign on.

US officials investigated a shipping company named Nova - incorporated in the state of Delaware in the US and in Romania - after two of its Tongan-flagged vessels



were used to smuggle suspected Al-Qaeda operatives into Europe. In February 2001, eight Pakistani men fled from one of Nova's freighters, the Twillinger, after it arrived in the Italian port of Trieste from Cairo. They falsely claimed to be crewmen and carried large sums of money as well as false identification. US officials say the men were sent by Al-Qaeda. With the help of Romanian intelligence, US officials began an investigation of the firm and a search for its ships, according to accounts by the Romanian newspaper Ziua that European officials confirmed.

In August 2001, the captain of another of Nova's Tongan-registered freighters, the recently renamed Sara, radioed to maritime authorities in Italy that 15 Pakistani men whom the ship's owner had forced him to take aboard in Casablanca, Morocco, were menacing his crew. The 15 claimed to be crewmen when questioned by US and Italian naval officers, but the captain said they knew nothing about seafaring. US officials say they found tens of thousands of dollars, false documents, maps of Italian cities and evidence tying them to Al-Qaeda members in Europe. The conclusion: that they, like the eight on the Twillinger, were possibly on a terrorist mission. The 15 were charged in Italy with conspiracy to engage in terrorist acts.

In January 2002, the Tongan-flagged Karine A was seized by Israeli naval commandos in the Red Sea with a cargo of Iranian-made weapons, including 50 tons of anti-tank missiles, mortars, machine guns, landmines and surface-to-surface rockets. Israeli authorities said that the arms were destined for Palestinian-controlled territory for use against Israel.

Two months later, another vessel flying the Tongan flag, Fanourious, packed with 126 clandestine immigrants, was escorted into the port of Sicily by an Italian naval vessel after the rusty merchant ship put out a distress call. The crew was arrested for aiding an illegal operation. In March 2002, a cargo vessel, the Monica, also Tongan-flagged, was apprehended by the Italian navy after it arrived off the coast of Sicily carrying 928 people, reportedly Kurds from Iraq seeking asylum.

The International Transport Workers Federation, the ITF, checked and found that in the 15 years before it ran foul of the Italian authorities, the Monica appeared to have been registered under no less than seven different flags of convenience – Sao Tome & Principe, Belize, Equatorial Guinea, Cambodia, Honduras, Malta and Tonga.

Italy's secret services say that they see increasing evidence terrorist groups like Al-Qaeda are moving into the smuggling of illegal immigrants, a multibillion dollar trade they can use for funnelling operatives and funding other activities. An intelligence report released in September 2003, said that terrorist networks and groups who trafficked in illegal immigrants shared a natural overlap, often relying on false documents and intricate logistics, transport and communication arrangements. "There is the fear, too, that the same routes used for illegal immigration are being used by militants to help form Islamic terrorist groups," said the report, compiled by an agency that coordinates the work of Italy's secret services.

After announcing that its register would close because it was tarnishing Tonga's reputation, the Tongan government said in June 2002 that the 185 vessels on the register had been given 12 months notice of termination. A Tongan official said that it was unlikely the country would get back into the business of flagging foreign ships. However, the International Transport Workers' Federation says that while the Tongan register has been closed to new entries, the Tongan government is honouring existing contracts. Like Cambodia and a number of other flag of convenience countries, Tonga had subcontracted its register to a private company that wasn't based there. Tonga's shipping register operated out of the Athens port of Piraeus.

(Lloyd's List 20 May 2002, "Tonga pulls plug on troubled flag."; Sydney Morning Herald 14 January 2003, "The ships that died of shame."; AFP 3 January 2003, "Island nation of Tonga linked to the Al-Qaeda."; Washington Post 31 December 2002, "15 freighters believed to be linked to Al-Qaeda", by John Mintz; Business Times of Singapore shipping section 20 May 2002, "Tonga closing down international ship registry", by Donald Urquhart; ITF news on-line 21 March 2002, "Italy 'refugee ship' used flags of convenience for 15 years; Reuters 7 September 2003, "Italy study sees Al-Qaeda link to human trafficking," by Luke Baker; The International Transport Workers' Federation Flags of Convenience Campaign Update, September 2003.)

#### Proliferation Security Initiative

It is against this background of significant crime and lax regulation in international shipping – and the industry's vulnerability to abuse by terrorists – that US President George Bush launched the Proliferation Security Initiative, or PSI, on 31 May 2003. Various referred to as a compact or political arrangement, it is a program of preemptive interdiction designed to intercept illicit exports related to weapons of mass destruction anywhere in the world, whether by sea, air or land. The definition of wmd encompasses nuclear, chemical and biological arms, related materials and associated delivery systems. The latter would evidently include a ballistic missile linked to a wmd warhead, but not a missile to carry a conventional explosive charge. The PSI is premised on the growing concern that countries or criminal organizations hostile to America will pass wmd-related materials to terrorists who may use them to attack the US, its allies or friendly countries around the world.

( White House text of Remarks by the President to the People of Poland on 31 May 2003; Proliferation Security Initiative: Statement of Interdiction Principles, fact sheet issued by the US State Department on 3 September 2003; Institute of Strategic Studies, Strategic Comment, Volume 9, Issue 6, August 2003.)

The PSI is intended to build on and reinforce existing arms control treaties and multilateral arrangements, as well national export controls on sensitive materials, including "dual use" items that can be used for legitimate civilian industrial purposes or to make weapons of mass destruction. The PSI aims to stop trafficking in wmd-related materials between "rogue" states and terrorist groups that its members feel pose the most

immediate threat to global and regional security. North Korea and Iran are primary sources of proliferation concern to PSI members, according to US officials.

(Address by the Secretary of Australia's Department of Foreign Affairs and Trade Dr Ashton Calvert to the Royal United Service Institute International Seminar on "Global Security in the New Millennium," in Canberra 9 – 10 October 2003; Transcript of 4 November 2003 Arms Control Association interview with John Bolton, US Undersecretary of State for arms control and international security issued by the State Department on 4 December 2003.)

There are five countries that are accorded international legitimacy as nuclear-weapon states under the Nuclear Nonproliferation Treaty, the NPT, that entered into force in 1970. They are the US, Britain, France, Russia and China. Three of the five – the US, Britain and France – are founder members of the PSI. The other two "legal" nuclear powers – China and Russia – are more ambiguous in their attitude to the PSI. But neither opposes the program and each is prepared to give it some support. These five nuclear weapon states are important because they are also the five permanent members of the United Nations Security Council with the right to veto Council decisions.

Three other countries – Israel, India and Pakistan – are known to possess nuclear weapons. They have never joined the NPT. If they were to do so now, they would be treated as non-nuclear-weapon states and have to disarm because the treaty restricts nuclear-weapon status to nations that manufactured and exploded a nuclear explosive device before 1 January 1967. North Korea, which the CIA suspects may have several crude nuclear bombs, withdrew from the NPT in December 2002 (?). US officials indicate that compared to North Korea and Iran - an NPT member Washington has accused of cheating on its obligations by having a clandestine programme to develop nuclear weapons - Israel, India and Pakistan are of secondary concern as would-be proliferators. Indeed, their cooperation is being sought in enforcing PSI activities.

(Arms Control Association fact sheets: The Nuclear Nonproliferation Treaty at a glance, May 2003; Transcript of 4 November 2003 Arms Control Association interview with John Bolton, US Undersecretary of State for arms control and international security issued by the State Department on 4 December 2003; Testimony to the US House of Representatives International Relations Committee by John Bolton, US Under Secretary of State for arms control and international security, 4 June, 2003; The Times of India 13 October 2003, "US security initiative: an invitation India cannot turn down," by K. Subrahmanyam.)

North Korea appears to have been the main target of PSI interceptions so far. It is estimated to have earned about \$US one billion in legal exports in 2002, including textiles and seafood. But North Korea is believed to have earned at least that much annually in the past by exporting counterfeit US dollars and drugs like heroin and methamphetamines, all of which are illegal, as well as ballistic missiles and components, most of which are legal. Western officials allege that North Korea exports arms, drugs and illegal counterfeit money to pay for its nuclear and missile development program,

prop up the embattled regime of North Korean leader Kim Jong-il and prevent the North Korean economy from complete collapse. They are seeking new members among coastal states in Asia and the Middle East, notably India which has a strong navy and lies close to the busy sealanes between East Asia and the Persian Gulf.

(Associated Press report in the International Herald Tribune 17 September 2003, "Bush targets drug trade linked to North Korea; Testimony on narcotics source countries by Paul E. Simons, Acting US Assistant Secretary of State for International Narcotics and Law Enforcement to the House of Representatives Committee on Government Reform 9 July 2003; New York Times report in the International Herald Tribune 23 August 2003, "Huge North Korea aid holds hope and peril," by James Brooke; Asian Wall Street Journal 14 July 2003, "Shadowy business arm helps regime keep grip on power in Pyongyang," by Jay Solomon and Haw Won Choi; Asian Wall Street Journal 23 April 2003, "North Korea tied to the drug trade," by Jay Solomon and Jason Dean; New York Times report in the International Herald Tribune, 22 May 2003, "Pyongyang said to be profiting from drugs," by James Dao; Time magazine 9 June 2003, "Kim's rackets," by Anthony Spaeth; Financial Times 5 June 2003, "N Korea suspected source of drugs seized in South," by Andrew Ward; The Age 24 May 2003, "Dear Leader implicated in Japanese drugs trial," by Shane Geen; Asian Wall Street Journal 6 February 2003, "North Korea's missile maze," by Bertil Lintner and Steve Stecklow; YaleGlobal online 5 May 2003, "North Korea's missile trade helps fund its nuclear program," by Bertil Lintner; Washington Post 14 August 2003, "On North Korean freighter, a hidden missile factory," by Joby Warrick; CIA report to the US Congress on 10 November 2003 on weapons proliferation trends during the first half of 2003; )

### Nuclear Wal-Mart

When the eleven original PSI members – Australia, France, Germany, Italy, Japan, the Netherlands, Poland, Portugal, Spain, Britain and the US – held their fifth meeting, in Washington, on 16 and 17 December 2003, they were joined by five additional participants: Canada, Denmark, Norway, Turkey and Singapore. Only three Asia-Pacific have so far joined the PSI – Australia, Japan and Singapore. The PSI aims to expand its reach by getting cooperation from countries that have large shipping fleets and those whose ports and waters are suspected of often being used by shippers of wmd-related goods. US officials say that more than 50 countries have signaled that they support the PSI and are ready to take part in interdiction efforts, most of which are expected to be within national jurisdiction and the result of better exchanges of intelligence and tighter export controls.

PSI members want to increase the number of countries joining or working with them to deter or intercept not just wmd-related shipments that go by sea, but any by land or air as well. Of course, this is difficult. Many of the suspect items also have legitimate civilian uses. And some, such as the plutonium core of a nuclear weapon, may not be much bigger than a football.

China, Russia and South Korea – as immediate neighbors that share land borders with North Korea – are important in this context. For example, North Korea has exported ballistic missiles and related technology to Iran and Pakistan by air and sea. The key air routes for Pyongyang – between North Korea and Iran and between North Korea and Pakistan – are through Chinese airspace.

(Official transcript of speech by John Bolton, US Undersecretary of State for arms control and international security, at the opening of a conference on 2 December 2003 in Washington on security issues jointly sponsored by the Institute of Foreign Policy Analysis and the Fletcher School of Tufts University; Time magazine 14 July 2003, “Arsenal of the axis – North Korea already supplies missiles to rogue states; now it poses a new threat: nuclear proliferation,” by John Larkin and Donald Macintyre; The American Prospect, Volume 14, Issue 8, 1 September 2003, “Nuclear Wal-Mart?” by Ivo H. Daalder and James M. Lindsay.)

France and Germany are working with the US on the PSI notwithstanding their differences with America over Iraq. Since the PSI group first met in Madrid in June, members have agreed to review relevant laws and improve intelligence exchanges on suspected international transactions involving wmd-related materials.

They have also agreed to hold a series of sea, air and land interception training exercises stretching into 2004 in Europe, the Middle East and Asia. The first was held in the Coral Sea off the north-east coast of Australia in September 2003. It involved ships, patrol aircraft and helicopters from Australia, the US and France tracking, boarding and inspecting a freighter carrying chemical weapon precursors. In October, Britain hosted the first PSI air interception training session, a table-top simulation of how to intercept an airplane suspected of transporting wmd. Then over the next few weeks, Spain and France separately hosted maritime interdiction exercises in the Mediterranean Sea.

The aim of these exercises and the moves to improve intelligence-sharing and expand participation in the PSI is to create a web of counterproliferation partnerships that deter and impede trafficking in wmd-related materials.

(Official transcript of media interview by Australia’s Defence Minister Senator Robert Hill on the PSI Coral Sea exercise, Saturday 13 September 2003; Transcript of 4 November 2003 Arms Control Association interview with John Bolton, US Undersecretary of State for arms control and international security issued by the State Department on 4 December 2003

### PSI Weakness

A major weakness of the Proliferation Security Initiative, or PSI, is its limited authority under international law. The US and its PSI partners are working to rectify this so that they can interdict shipments of weapons of mass destruction to or from states with nuclear ambitions, or between states of proliferation concern and terrorist groups, where

such shipments are taking place beyond the sea, air and land jurisdiction of the PSI countries.

For example, at the International Maritime Organization, the US has tabled amendments to the 1988 Convention on the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, known as the SUA Convention, so that it will cover terrorist crimes at sea, including using ships as weapons or to carry weapons of mass destruction or related materials. At present, only if the flag state expressly consents can foreign warships halt a ship flying that flag in international waters – except in the case of a few “universal crimes” such as piracy, slavery and unauthorised broadcasting. The US and its allies want the wmd terrorist threat put into a similar pariah category.

The US has proposed that in future if PSI countries want to board a ship carrying suspected terrorists or wmd-related material on the high seas, they should try to contact the flag state but if no response is received within four hours it will be taken as consent stop and search the vessel.

(Official transcript of answers to questions by Australia’s Foreign Minister Alexander Downer after his address to the National Press Club in Canberra on 26 November 2003; Transcript of 4 November 2003 Arms Control Association interview with John Bolton, US Undersecretary of State for arms control and international security issued by the State Department on 4 December 2003; International Maritime Organisation summary of legal committee session 28 April – 2 May 2003; Presentation by Robert Beckman, Associate Professor and Vice-Dean (Academic Affairs), Faculty of Law, National University of Singapore, to the CSCAP/PECC joint meeting on maritime security in Manila, 6-7 September 2003.)

#### WMD-related Interceptions

Meanwhile, PSI members are taking preemptive action wherever they are able to do so legally.

In April 2003, shortly before President Bush formally announced the PSI, French authorities, acting on a German government tip-off, ordered a French cargo container ship, the *Ville de Virgo* to unload suspicious cargo in an Egyptian port. Originating from a German firm in Hamburg, the cargo included 214 ultra-strong aluminium pipes weighing 22 metric tons of aluminium tubes purchased by China’s Shenyang Aircraft Corp. The cargo was cleared by German customs agents. But hours after the ship left Hamburg, German intelligence officials discovered that the aluminium was destined not for China but for North Korea. The intended use of the pipes, they concluded, was not for making aircraft fuel tanks, but as key components of high-speed centrifuges for making highly-enriched uranium for nuclear weapons.

On April 12, in a dramatic but little-noticed intervention, French and German authorities tracked the Asia-bound container ship to the eastern Mediterranean and seized the pipes. German police arrested the owner of a small export company and uncovered a

broader scheme by North Korea to acquire as many as 2,000 such pipes. That much aluminium could have yielded as many as 3,500 gas centrifuges for enriching uranium.

One option, since the *Ville de Virgo* was French-owned and technically under France's jurisdiction, was to stop it at sea and transfer the suspect cargo to a French military vessel. Instead, it was decided that the pipes should be unloaded at the first possible port. The ship's French owner endorsed the plan. The captain then made an unscheduled stop in the Egyptian port of Alexandria, not far from the northern entrance to the Suez Canal. The pipes were quickly and quietly removed and another vessel returned them to Hamburg on April 28.

(Washington Post 15 August 2003, "N. Korea shops stealthily for nuclear arms gear: front companies step up efforts in European market, by Joby Warrick.)

French and German authorities also collaborated in the first half of 2003 to intercept sodium cyanide that was thought to be bound for North Korea's chemical weapons programme.

(Institute of Strategic Studies, Strategic Comment, Volume 9, Issue 6, August 2003)

Japan, too, has been a long-time source for high-tech parts for missiles and nuclear weapons for North Korea and has also stepped up its crackdown on the illicit trade. In April 2003, a trading company in Tokyo associated with a pro-Pyongyang group of ethnic Koreans in Japan attempted to export devices that could be used to make missiles and nuclear weapons to North Korea via Thailand. The devices, which control electric currents that can be used for enriching uranium, were reportedly seized in Hong Kong when the freighter stopped there on its way to North Korea. Japanese officials alerted authorities in Hong Kong that the transformers were being shipped under false documentation.

(AFP 27 October 2003, "Asia-Pacific powers to cooperate in blocking WMD-related exports to N Korea,"; The Japan Times 28 October 2003, "Nations target illegal exports to North Korea.")

Later in 2003, Japan sharply increased its searches of North Korean ships calling at Japanese ports and Japanese police arrested five executives from a used-car dealership for exporting a huge trailer to North Korea that could be used to move a missile launch pad.

(The Age 28 October 2003, "Pyongyang to face new restrictions on trade," by Shane Green.)

Japan also convened an export control policy meeting of eight Asian states in Tokyo in October 2003. Senior officials from Japan, the US, China, South Korea, Australia, Singapore, Thailand and Hong Kong took part. Participating countries agreed

to tighten their controls over exports of materials that could be used to develop weapons of mass destruction and intensify the exchange of timely intelligence about suspected trafficking in wmd-related materials, including to or from North Korea. They agreed to set up a system through which they can inform each other about suspected shipments of such materials to North Korea via third countries. It is the first time that an arrangement for multilateral cooperation in export control over strategically sensitive items as been put in place in Asia.

(AFP 27 October 2003, “Asia-Pacific powers to cooperate in blocking wmd-related exports to N Korea,”; The Japan Times 28 October 2003, “Nations target illegal exports to North Korea.”)

In December 2003, Japan said that it planned to tighten its own rules on the export of products and parts that could be used in weapons of mass destruction, and might offer aid to other nations to enable them to do the same. The rules are not specifically aimed at North Korea but a Japanese trade ministry official said that it is one nation being kept in mind. The new rules will expand the list of products whose export is limited out of concern they could be used for wmd or the missiles that could carry them. Currently, some 30 products, including gyroscopes, fall into this category. Japan is also considering providing money from its overseas development assistance, known as ODA, to Asian nations such as Indonesia, the Philippines and Vietnam to enable them to tighten their export controls in the same area starting in March 2004.

(Reuters 9 December 2003, “Japan to tighten export rules on potential weapons.”)

In August 2003, in response to a US request, Taiwanese officials confiscated about 150 barrels of phosphorus pentasulphide from a North Korean freighter, Be Gae Bong, in the Taiwanese port of Kaohsiung before it left for North Korea. The chemical is used to make insecticide and as an additive in motor oil. But it can also be used to manufacture nerve gas.

(Asian Wall Street Journal 13 August 2003, “Taiwan seizes North Korean cargo,” by Christopher Cooper; AFP 13 August 2003, “US praises Taiwan for intercepting chemical weapons precursor from North Korea; Christian Science Monitor 12 August 2003, “Ship’s seizure sends warning to N. Korea,” by Robert Marquand.)

John Bolton, the US Undersecretary of State for arms control and international security, said in November 2003 that China supported the concept behind the PSI and was prepared to engage in joint activities to curb wmd trafficking. Russia, he said, had no objection to engaging in wmd interdiction activities.

(Transcript of 4 November 2003 Arms Control Association interview with John Bolton, US Undersecretary of State for arms control and international security issued by the State Department on 4 December 2003.)



Still, China is in a bind. As host of the six-party talks to end the nuclear stand-off on the Korean peninsula, it does not want to appear to be provoking or isolating North Korea by taking part in any blockade. The six-party talks involve North and South Korea, the US, Russia and Japan as well as China. If China, Russia and South Korea were to join or cooperate openly with PSI members, it would range five of the six parties in the talks against North Korea. Pyongyang sees the PSI as an alliance to enforce a blockade to bring North Korea to its knees.

(Financial Times 10 December 2003, “North Korea seeks incentives before talks,” by Andrew Ward.)

However China also has a pressing national security interest in a nuclear-free Korea and has said repeatedly that it wants the whole peninsula to be free of nuclear weapons. Without stable borders and a peaceful neighbourhood, China won't be able to focus fully on expanding and modernizing its economy. “A developing China needs both an international and peripheral environment of long-term peace and stability,” said a non-proliferation “White Paper” published by the Chinese government in December 2003. “The proliferation of wmd and their means of delivery benefits neither world peace and stability nor China's own security.”

(English text of the official White Paper on China's Non-Proliferation Policy and Measures published in China Daily on 4 December 2003; Associated Press report in the New York Times 3 December 2003, “China outlines nonproliferation plans.”; BBC 3 December 2003, “China explains WMD policy.”)

A Chinese foreign ministry spokesman said two days after the White Paper was released that China understood the wmd concerns of PSI members but was also mindful of concerns about the legitimacy, effectiveness and impact of the methods the group would use to intercept suspect shipments. Still, the spokesman said that China would take the proliferation risk into full consideration when exporting sensitive items and technologies to other countries.

(China Daily 5 December 2003, “FM stresses nation's proliferation stance.”)

The US said that China had enacted a good piece of legislation, although it needed to be implemented and enforced. Significantly, however, the US Secretary of State Colin Powell had disclosed in November 2003 that Beijing had cooperated with the US to block some chemicals leaving China for North Korea. This was the first reported case of such cooperation in an arms control area that had previously been a source of chronic tension between the US and China. The CIA had told the US Congress in January 2003 that North Korea had continued to procure raw materials and components for its ballistic missile programs from various foreign sources, especially through North Korean firms based in China.

“We are pleased with China's recent cooperation with us to block the export of chemicals that could have been used in North Korea's weapons programs,” Mr Powell

said. "And our very success in that particular case has now set a much higher standard for our cooperation." He added that neither America nor China wanted to see weapons of mass destruction spread and "by acting on that mutual interest, China can turn the issue of proliferation from a negative to a positive in our relations."

(VOA News 3 December 2003, "US welcomes China's commitment to wmd non-proliferation"; official transcript of speech by US Secretary of State Colin Powell on 5 November 2003 at the Conference on China-US Relations at the George Bush School of Government and Public Service at Texas A & M University; The Washington Times 22 January 2003, "N Korea using China to obtain missile supplies," by Bill Gertz.)

With the cuts in US and Japanese aid to North Korea, China is by far the largest supplier of fuel oil and food to the North, giving it a degree of leverage that other countries do not have. Beijing's confirmation in September 2003 that its military have taken over from police in guarding the 1,400-kilometer border with North Korea may well be a ratcheting up of Chinese pressure on Pyongyang, short of working with the PSI group of nations. South Korea and Russia, too, are likely to refrain from open cooperation with the PSI, at least until they are convinced that North Korea will not dismantle its nuclear weapons programme.

(Financial Times 10 September 2003, "US seeks help from China and Russia to curb the spread of wmd," by Guy Dinmore and Andrew Ward; The Economist 20 September 2003, "China and North Korea – preparing for the worst"; New York Times report in the International Herald Tribune 16 September 2003, "China puts troops on its border with Korea," by Joseph Kahn; AFP report in the Singapore Straits Times 15 September 2003, "China sends 150,000 troops to N Korean border." )

#### North Korea's Pong Su

In April 2003, Australian special forces boarded and took control of a North Korean freighter in Australian waters that was involved in an attempt to smuggle into Australia 125 kilograms of heroin with a street value of up to 200 million Australian dollars. US and Australian officials suspect that North Korea uses profits from state-sponsored smuggling of drugs, arms and counterfeit money to help pay for its programmes to develop weapons of mass destruction.

Although not strictly within the ambit of the PSI, Australia worked closely with the US and Japan to track and investigate the 4,000-tonne Pong Su, which had travelled to Japan many times but was registered under a flag of convenience in the small Pacific island-nation of Tuvalu. The Pong Su was impounded in Australia. Its North Korean crew of 30, including a senior member of the ruling Korean Workers' Party who was on board when the ship was seized, are in detention in Australia until their court trial scheduled for late 2003. The North Korean government has denied any involvement with the ship or its cargo of heroin.

Some reports say that this operation was under a programme separate from the PSI, known as the DPRK Illicit Activities Initiative and that there has been a quiet crackdown by many countries against the narcotics trade, counterfeiting, money laundering and other efforts by the Democratic Peoples Republic of Korea, the official name of North Korea, to earn hard currency.

(Asian Wall Street Journal 22 April 2003, "Australia seizes vessel owned by North Korea,"; Financial Times 28 May 2003, "Australia seizes more heroin," by Anna Fifield and Andrew Ward; Official transcript of press conference in Adelaide by Australian Foreign Minister Alexander Downer, 2 May 2003; Reuters 2 May 2003, "Australia warns North Korea over drug smuggling; Official transcript of press conference in Tokyo by Australian Foreign Minister Alexander Downer, 15 May 2003; Asian Wall Street Journal 7 May, 2003, "Pyongyang denies ties to heroin-drug trade," by Jay Solomon; New York Times report in the International Herald Tribune, 18 August 2003, "US-led naval exercise is signal to North Korea," by Steven R. Weisman.)

#### North Korea's Flagless Missile-carrier

The legal and political complexities involved in incepting ships in international waters, particularly if they are owned or registered in countries that are not members or cooperating partners of the PSI, was illustrated late in 2002 when the US picked up intelligence from its spy satellites that North Korea was preparing an export shipment of Scud missiles. After tracking the suspect freighter from North Korea for several weeks, the US asked its NATO ally, Spain, to send a warship to halt, board and inspect the vessel in the Indian Ocean as it steamed towards the Middle East.

Under international law, warships can stop a foreign commercial vessel only if they have permission from the flag state, if the vessel is "without nationality" or if it is reasonably suspected of piracy, carrying slaves or unauthorized broadcasting. The flag state is the government of the country whose flag the vessel to be intercepted is flying.

After the cargo ship was boarded and inspected, North Korea described the incident as an act of piracy. But US navy planes tracking the freighter found that the name on its hull read So San, in letters apparently freshly painted. Checks found that no ship named So San was registered. That provided grounds for treating it as "without nationality", meaning that it could be legally boarded.

The US had also observed that, in an apparent effort to obscure its identity and origins, the freighter was now sailing without a flag when it should have been flying the flag of the country where it was registered. This provided further legal grounds for boarding. Under international law, ships not properly registered, flagged or marked can be boarded. A US official said that in fact the freighter was a Cambodian vessel with a North Korean crew.

The Spanish frigate sent to intercept the freighter ordered it to slow for boarding on 9 December 2002. But the demand was ignored despite two salvos of warning shots, a third salvo into its bow and sniper fire from Spanish special forces to clear cables blocking their way to board. After a six-hour standoff, they rappelled from a helicopter onto the deck and secured the freighter.

A subsequent check of the cargo holds by American forces found crates containing 15 Scud missiles, 15 conventional warheads and many barrels of chemicals, all hidden under thousands of bags of cement.

But on 11 December, the US decided to let the freighter sail on to its destination. There was no clear legal basis for holding the missiles, and their purchaser was Yemen, an important ally of America's in the war on terrorism. The Yemeni government had protested against the ship's seizure and demanded its release, saying that the purchase contract for the extended range Scud B missiles had been signed a long time ago and that the Yemeni military needed them for defence purposes and would not transfer them to a third party.

Frustrated by the outcome and slow pace of anti-terrorist action at the UN, the Bush administration decided to launch the PSI using the "coalition of the willing" approach to try to choke off North Korea's wmd-related trade and fight weapons proliferation more broadly.

(Asian Wall Street Journal 23 October 2003, "Why US sidestepped UN in its plan to halt shipments of weapons," by Carla Anne Robbins; Official transcript of remarks by US Defence Secretary Donal Rumsfeld at an American Chamber of Commerce joint breakfast meeting in Seoul on 18 November 2003; International Herald Tribune 12 December 2002, "North Korean ship seized with Scuds," by Brian Knowlton; Asian Wall Street Journal 12 December 2002, "Scud find gives US new impetus," by Greg Jaffe, Carla Anne Robbins and Charles Hutzler; The Economist 14 December 2002, "What have we here?"; Asian Wall Street Journal 13 December 2002, "US miscalculated in Scud affair," by Carla Anne Robbins, David S. Cloud and Yaroslav Trofimov; The Washington Times 18 February 2003, "Ship gets arms in and out," by Bill Gertz.)

### Sovereign State Flag Rules

Under international law, every ship must sail under the flag of a sovereign state to gain the protection of a government while on the high seas. A key lesson from the So San affair and other terrorism or wmd-related trafficking in international waters is that those trying to shut the trade down by pursuing suspect ships wherever they are need to get cooperation from the government whose flag the ships are flying. At present, only if the flag state expressly consents, can foreign warships legally halt and inspect a ship flying its flag on the high seas – except in the case of a few specific "universal crimes" such as piracy, slavery and unauthorised broadcasting. Because more than half the world's fleet by tonnage is now on foreign registers, this means that in many cases permission to halt and inspect in international waters must be sought from a flag-of-convenience state.

The PSI group of nations have asked countries that operate or sanction foreign flag registers to cooperate in allowing boarding and search to take place when it is reasonably suspected that the ship involved is carrying wmd-related cargo to or from states or non-state actors of proliferation concern.

(Statement of Interdiction Principles, fact sheet issued by the US State Department on 3 September 2003; Transcript of 4 November 2003 Arms Control Association interview with John Bolton, US Undersecretary of State for arms control and international security issued by the State Department on 4 December 2003.)

### IMO & Reform

The International Maritime Organization is the United Nations specialised agency with responsibility for the safety of shipping and the prevention of marine pollution by ships. Its motto is: “safer shipping, cleaner seas.” But the IMO shies away from using the term “flag of convenience”, talking instead of sub-standard shipping. It has for some time been developing a voluntary model flag state audit that could be used to improve the regulation of global shipping and the fight against terrorism. But progress was frustratingly slow until late 2002. It now appears that a voluntary scheme could be in place by mid-2005, followed by a mandatory one later. The incoming IMO Secretary-General Efthimios Mitropoulos has said he is determined to ensure that the audit scheme is a success and has placed it under his direct supervision.

(Shipping section of Singapore’s Business Times 3 December 2003, “IMO has to deal with conflicting winds of change”, by David Hughes; Financial Times 26 November 2003, “Guidelines set on use of flags of convenience”, by Toby Shelley

The IMO has been slow in the past to improve its regulation of sub-standard shipping in part because leading operators of open registers – including Panama, Liberia, the Bahamas, Malta and Cyprus - are among the largest contributors to the IMO’s regular budget. These countries are among the 29 that the International Transport Workers’ Federation, the ITF, has listed as flag of convenience providers. Panama, Liberia, the Bahamas, Malta and Cyprus comprise five of the top ten contributors to the IMO budget. Together, the five accounted for almost 40% of the assessed contributions to the IMO approved budget of 39.5 million pounds for 2002-2003. Contributions to the IMO annual budget are based on a formula which is different to that used in other UN agencies: the amount paid by each member state depends primarily on the tonnage of its merchant fleet.

(IMO Structure 2003 from the IMO website; International Transport Workers’ Federation Flags of Convenience Campaign Update September 2003.)

### One Way Forward

The ITF believes that only by re-establishing the full role and responsibilities of the flag state, and by ensuring that there is a genuine ownership and control link between a ship and the flag it flies, can effective maritime governance be achieved. Better regulation of shipping and cleaning up its sub-standard black spots are clearly crucial not just to the safety of the maritime industry and seaborne trade but to its security as well, especially when the risk of weapons of mass destruction or disruption getting into terrorist hands is rising.

Japan is an example of the potentially dangerous movement of ships from national to open or flag of convenience registers. After Greece, Japan owns more commercial ships than any other country: nearly 14% of the world total measured in deadweight tonnage in January 2002. Yet only 793 of Japan's nearly 3,000 ships remain on the Japanese national register. In terms of the deadweight tonnage of vessels owned by Japan, over 86% were registered under a foreign flag of convenience in 2002. Some 43% of Japanese-owned ships fly the flag of Panama, 7% the flag of Liberia, and 1% each the flags of Bahamas, Malta and Cyprus.

With so much of the Japanese commercial fleet on foreign registers and manned by non-Japanese crews, it is quite possible that a ship domiciled in Japan and owned by a Japanese company but flying a flag of convenience could be leased or time-chartered to a front firm for a terrorist organisation without the Japanese authorities being in a position to know anything about it – even if the ship were to be used to carry a nuclear or radiological bomb into a major Japanese port.

It is, however, possible to reverse the flow of ships to foreign registers and bring them back to national registers. Singapore has shown how tax and other inducements can be used to rebuild a national register while meeting international maritime safety and labour standards. According to Lloyd's List, Singapore, with 1,768 ships, had the world's seventh largest merchant fleet by gross tonnage at the end of 2002, behind Panama, Liberia, Bahamas, Greece, Malta and Cyprus but ahead of Norway, China, Hong Kong, Marshall Islands, Japan, Russia, the US, Italy, Britain, Denmark, South Korea, St Vincent and the Grenadines, and Germany. Of the 717 ships domiciled in Singapore at the start of 2002, 455 were on the national register, according the UNCTAD maritime transport review for 2002. Only 34% as a percentage of the total deadweight tonnage of the Singapore fleet flew a foreign flag of convenience.

(The International Transport Workers' Federation Flags of Convenience Campaign Update, September 2003; The Japanese Shipowners' Association report on The Current State of Japanese Shipping, March 2003; Business Times of Singapore shipping section 23 July 2002, "S'pore vows to maintain quality merchant fleet," by George Joseph.)

#### Reputable Shipowners Act

Meanwhile, international shipowners' organisations have for the first time issued guidelines for measuring the performance of states that register ships under flags of

convenience against their legal obligations. The Roundtable of International Maritime Organisations says the guidelines will encourage flag states to improve their performance. They include a list of 12 countries that score a dozen or more negative indicators. Flag states branded as poor performers include Albania, Belize, Bolivia, Cambodia, Costa Rica, the Democratic Republic of Congo, Honduras, Jordan, Madagascar, Sao Tome & Principe, Suriname and Syria.

“Ship operators may wish to consider carefully whether the use of flags that have a large number of negative performance indicators is in the interest of either the company or the industry at large”, the guidelines say. They point out that shipping companies may face higher numbers of port inspections and expensive delays if they fly the flag of suspect state.

(Financial Times 26 November 2003, “Guidelines set on use of flags of convenience”, by Toby Shelley; Shipping section of Singapore’s Business Times 3 December 2003, “IMO has to deal with conflicting winds of change”, by David Hughes.)

#### Unions Urge Port State Pressure

Seafaring unions linked to the International Transport Workers' Federation, the ITF, have urged the U.S. Congress to enact legislation authorizing the U.S. Coast Guard to refuse entry to American ports to any non-U.S. flagged ship that does not provide full identity of the vessel's actual owner or owners.

(ITF media release 13 June 2002, “ITF tells Congress flags of convenience endanger USA.”)

#### Safety to Security

Until quite recently, port state concerns – even in countries like the US which face an acute terrorist threat - have focused on safety, rather than security. Reform of shipping practices considered substandard by those responsible for protecting international maritime security and the global supply chain from terrorist attack is likely gain real traction when port states led by the US start delaying or turning away flag of convenience or other ships with known or suspected terrorist connections when the new IMO rules on ship security come into force from July 2004.

End

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