

US Port Security – Seaport Security Starts Far from Home

The United States' maritime strategy states that homeland security begins as far from home as possible. Port security in the US starts where the containers are loaded abroad. *Edward Lundquist*, retired US Navy captain, explains how good law enforcement comes from good relationships



An LRAD Corporation acoustic device combined with a FLIR imaging sensor – a powerful fusion of sound and vision

Security (DHS), 58 foreign ports, accounting for 85 per cent of US-bound container traffic, currently participate in CSI.

Learning lessons from the USS *Cole* attack

In the year leading up to the 10th anniversary of the attack on USS *Cole* (DDG 67), the US performed an extensive navy anti-terrorist/force protection (AT/FP) programme assessment, which included tabletop and operational exercises, fleet-wide interviews and administrative reviews. While deployed and deploying units have embraced lessons from the *Cole* attack, the freedoms and the nature of America's open society create potential vulnerabilities at home ports. New technologies, including non-lethal systems, can both monitor port areas and warn potential threats to stay clear. The networking of acoustic devices with remote-sensor systems permits real-time communication and response. "Directed long-range acoustic tools ensure instructions are heard and understood, greatly helping to reduce miscommunication and confusion," says Scott Stuckey, Vice-President for Business Development for LRAD Corporation, which makes the Long Range Acoustic Device (LRAD).

"Sounding alarms, using laser dazzlers and firing flares can help get a boat's attention. An acoustic hailing device's intolerable sound can compel a suspect vessel's crew to turn away," Stuckey adds. "The LRAD can transmit a powerful directed warning tone up to three kilometres away. This tone can be followed by clear, highly intelligible communications in the appropriate language, warning suspicious craft to keep their distance. If the suspect boat continues to approach, a crew can presume the intent of people on the boat, and escalate force-protection measures."

Detecting dirty bombs

Ports must remain vigilant against the arrival or transfer of materials that could pose a threat, as stevedores move the containers from the ships to the dock so that teamsters (truckers) can deliver them to their next destination. The trailers and chassis are scanned by Customs and Border Control for radiological and other hazards using radiation portals and other sophisticated equipment to inspect cargo and scan containers. Mobile radiation portal monitors screen containers for nuclear and radiological materials, and large-scale, non-intrusive X-ray equipment can scan an entire container within two to three minutes.

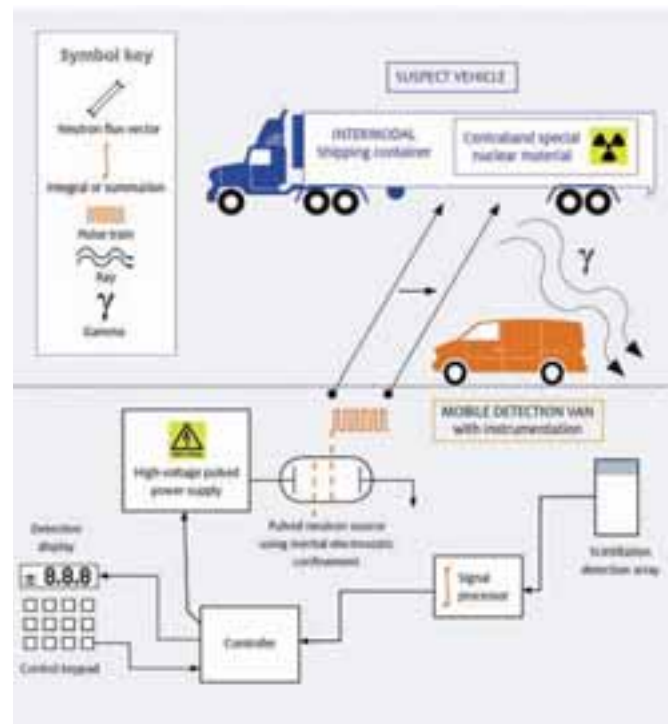
Furthermore, drive-through scanning equipment allows officials to detect suspicious or contaminated shipments. "Intermodal containers are ideal platforms for terrorists to place high explosives and chemical, biological nuclear or radiological weapons (CBRN) agents and devices and deliver them directly to any North American target," says Bradley Boyer, CTO of Petradyne Research Corporation. "A terrorist's nuclear weapon could be fabricated in most machine shops by hand-operated equipment, with a little surplus military gear – such as an old artillery piece – and other commercially available materials, within one year if the enriched uranium was available."

To counter this treat, the company is developing the Activation of Radiation, Gamma-Uranium Sensor (ARGUS) system for detection of nuclear materials via covert and mobile detection methods. The neutron pulse burst that the system emits penetrates the metal of intermodal containers that blocks X-ray-based equipment.

Keeping out the bad guys

Identifying known suspects can be a crucial piece of information, but a definitive way to uniquely identify people has, until now, been virtually impossible. This is where biometrics plays a role. Systems that use biometric measurements were successfully demonstrated during Green Devil II,

Graphic explaining how the Petradyne Research Corporation Argus system looks for nuclear material in a passing cargo container



a collaborative effort between the Marine Corps Systems Command (MCSC) and the Office of Naval Research (ONR), conducted at Fort Huachuca, Arizona, last summer.

Green Devil II demonstrated how different sensors can be used to increase situational awareness in the battlefield environment by collecting, fusing, transporting, analysing, delivering, exposing and acting upon data, and – most importantly – how to get real-time data to the expeditionary forces on the ground that need it. However, the technology can also be applied to infrastructure protection or port security.

"Facial recognition is considered hard biometrics," says Dr Mary Ann Harrison of the West Virginia High Technology Consortium (WVHTC). "We can distinguish between identical twins with a high level of confidence. Beards, changes in facial hair or hair colour, or make-up, do not matter."

Ear biometrics was also used during Green Devil II. The Ear Recognition System is a new capability developed by WVHTC with ONR support. Every person's ear is unique. It can confirm identity, and can also be observed at a distance.

In addition, new 'subscribable' systems make vetted intelligence available immediately to individuals who have 'subscribed' to information within specified parameters. "A person who is 'watch-listed' can be identified at a tactically significant distance," says Martin Kruger, an Intelligence, Surveillance and Reconnaissance (ISR) Program Officer at the Office of Naval Research. "We can provide this information quickly to people who need it, with a high level of confidence."

Sea ports represent not just a prime target for attack, but also the means for infiltrating personnel and materials into the country. The US has invested time and money to stiffen its defence against the use of its coastline for illegal acts. Europe, too, has implemented the ISPS Codes and installed equipment to search out suspicious cargo. However, the question that remains is what are the terrorists themselves are doing in the meantime to counter these efforts. ■