

Cruise lines are improving security through technology such as:

- Face recognition
- Biometric scanning
- Passenger ID cards

An eye for TROUBLE

Biometric technology can be used to identify passengers by their iris pattern.

Safety has become an increasingly prominent issue for cruise operators, with governments, regulators and passengers expecting more from the industry. Charlie Mandigo of Holland America Line tells Jim Banks how the latest technology can help cruise lines to achieve maximum security.

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Everyone involved in the travel sector became more aware of security issues following the terrorist attacks of September 2001. Since then new systems and processes have been implemented in airports, stations, harbours and docks in a major effort to make passengers feel safer. Developments in the regulatory framework defining the shipping industry's obligations have focussed on security and safety.

'Attitudes towards security have changed significantly since 9/11 and the prime factor has been the subsequent amendments to the ISPS Code, which require many changes to be made,' says Charlie Mandigo, director of fleet security for Holland America Line (HAL).

Prior to the ISPS, the industry was subject to guidelines adopted following the hijacking of the Italian cruise ship *Achille Lauro* in 1985 by Palestinian terrorists. Both these regulatory measures and the subsequent ISPS Code were formulated in response to terrorist attacks. However, for the cruise industry, terrorism is fairly low on the scale of risks, and the industry has made its own valiant efforts to combat more relevant threats. 'Cruise lines had made

many amendments prior to the Code, so it does not represent a radical change,' notes Mandigo. 'But it did change our focus on implementation and additional measures to improve passenger and staff security.'

Assessing risks

The threat of terrorist attack is on the cruise industry's radar, but like piracy it is perceived as unlikely to threaten the security of passengers on board. 'We look at the risks of terrorism, but see that maybe there is a greater risk when passengers are ashore in some countries, more so than on the ship,' says Mandigo. 'The risk of terrorism is greater when people are ashore.'

Piracy became big news after *Seabourn Spirit*, sailing off the coast of Somalia in 2005, was attacked by armed men in speedboats. The ship was forced to repel the would-be pirates after it was attacked with rocket-propelled grenades. However, such attacks on cruise ships are rare.

'Piracy is generally an opportunistic crime, and cruise ships have the advantage that they carry lots of people and have teams dedicated to security,' comments Mandigo. 'Piracy tends to happen on

ships where there are very few people and it is difficult to do patrols.'

The industry's best response to terrorism and piracy is the use of more detailed intelligence to evaluate the risk of certain routes and destinations, though there is some scope for developing technology to improve a ship's capability to repel potential boarders. Where technology investment can have the most significant effect on passengers' security, is its relationship to on-board risks such as crime, physical assault or the disappearance of passengers or crew while the ship is between destinations.

'In the US, there has been a lot of publicity about missing persons on cruise ships, as well as interest in the issue in Congress,' says Mandigo. 'That makes us look at what kind of technology could be applied to that problem. People can go missing on a cruise ship, so you must be able to find them. People also go overboard and we must look at how we can identify that kind of event in a timely manner.'

Beyond existing technology

Investment in new technology has been important since 9/11. For the most part,

this new technology is improved versions of systems already in place, aiming to make them more efficient and effective. Now, it seems as though the shipping industry and security systems developers have realised that there is only so much that can be achieved by following this route further. The next step is to look at new systems that can take the capabilities of security technology to the next level, and Mandigo believes the industry is about to take that step.

'In the last few years there have been many generations of technology improvement,' he says. 'Now we are entering the next phase. We've made those improvements that can be achieved by beefing up existing systems to make them more robust. Now we are taking a step back. We're looking at what we can do compared with what we are doing.'

Improvements to existing technologies have delivered positive results, not least by upgrading the management of security data to provide a more comprehensive view of on-board security. Mandigo sees the industry looking at the trends in land-based security systems, some of which will be appropriate for maritime applications.

'We need to examine how we identify unauthorised personnel approaching from the water and how to spot boats or swimmers' he says. 'The market is not such that people design technology for cruise ships, though there are some vendors that specialise. So, we have to adapt existing land-based technology.'

Passenger identification

One of the areas in which land-based security systems are making great strides is surveillance, which is a key consideration for cruise lines. Improved surveillance technology is a valid and vital response to many kinds of threat, including terrorism or piracy, but is also necessary to concentrating the market's focus on missing persons.

Surveillance technology can be used to detect the approach of unauthorised individuals. It can also help to track the movement of individuals on board, and can be a useful deterrent against crimes of theft or assault. Integrated with identity verification systems, surveillance technology has much to offer cruise lines.

The two technologies generating the most interest in this area are face-recognition software and biometric

identification systems. The latter is now being tested in many facilities, notably airports, as many feel it could be a revolution in access control and identification. Biometric technology uses individuals' physical characteristics, such as their fingerprints or iris pattern, to identify them. Its advantage is that this information is hard to duplicate. However, there are some disadvantages, not least getting the technology to work quickly and efficiently.

Major pilot programmes for biometric scanning at airports, where the technology is intended to speed up the processing of crew and passengers, have shown that these systems need more work before they become reliable enough for wider use. Undoubtedly their performance will improve, as will the effectiveness of face recognition systems, which have come to prominence recently.

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Face recognition systems are based on computer-generated algorithms to detect and identify human faces using statistical models. The core data is generated from observable measures such as the distance between a person's eyes or the shape of the cheekbones. Although in their infancy, such systems have a long way to go before they are considered consistently reliable, but Mandigo feels that it is important to observe their development, as they could play an important part in cruise-ship security.

'Those technologies are being looked at, among other things,' he says. 'We put a lot of money into technology as we must make sure that anyone coming up the gangway is authorised to enter the ship.'

Privacy is a key concern arising from the greater use of surveillance technology, and this problem is not lost on cruise operators, who are aware that too much surveillance could have a negative effect on their passengers' enjoyment of their holiday. Passengers want to feel secure, but they do not want their every movement monitored. The industry is treading a fine line between security and privacy.

Building on success

So far, the cruise industry has managed to balance security issues well, and Mandigo points to the quality of the industry's practices, particularly in passenger identity checks. He notes that cruise passengers' identities are verified at entry to the port, again as part of the face-to-face registration process, then their photos are taken for identification cards. Following this, there are the standard security checks at the metal detectors, the ID cards are checked at the foot of the gangway and, depending on the policy of the cruise line, may be checked again at the ship end of the gangway. Compared with standard procedure at airports, this is a thorough process.

'Security is in guests' minds, and if we do get complaints, they are usually about there not being enough security,' says Mandigo. 'But we get relatively few of those complaints. Our record shows that we are doing a good job.'

Crucial to its security performance are HAL's solid relationships with shore-side facilities and government agencies. It works closely with ports on security matters and has regular meetings with the US Coastguard, the FBI, the State Department and other US agencies to discuss strategy. An encouraging sign for further improvement in passenger security is the high level of cooperation between cruise lines, which recognises that cruises are more of discretionary spend than, say, air travel, so the industry must work as one to protect its business.

'Our industry has recognised that we all have the same interests, so cruise lines are open to sharing the information that they have,' says Mandigo. 'One line might pilot an idea and then share it with the rest of us, so we don't all have to reinvent the wheel. The cruise industry knows there is more work to be done on security, and it has shown its willingness to meet that challenge.' *wc*



Charlie Mandigo is director of fleet security for Holland America Line Inc, a unit of the Carnival Corporation & plc. Appointed to the position in 2003, Mandigo

is responsible for security programmes for Holland America Line and Windstar Cruises, and for compliance with all security directives by governments and other regulatory agencies as to terminal, ship, crew and passenger security practices and procedures.

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