

**I**n the history of the cruise industry, mass evacuations of ships are rare, and the order to abandon ship is one that most cruise captains will never have to give. But ensuring the safety of passengers should the worst happen is always in the minds of operators. Crew have to be well-trained, and passengers and civilian authorities must be prepared to play their part in averting a disaster.

"We have discussions on a daily basis about what we can improve and what we can change," says Chris van Raalten, director of maritime safety and compliance at Royal Caribbean Cruise Lines.

As with many trends in the industry, it is the larger ships and the wider

range of destinations that are driving changes in the way evacuation procedures are developed. Larger ships mean more passengers to be coordinated and assembled at muster stations – the first step in preparing for an evacuation – while exotic itineraries mean working with port authorities and coastguards who are unfamiliar with cruise vessels.

Changes are taking place, but at a slower pace than in other business areas. In part, this is because the safety features of ships have been improving: ensuring a smooth evacuation is important, but far more preferable is avoiding one altogether. "The rule of thumb is that the

ship is the best lifeboat," says van Raalten. "If we have to leave the ship it means our chances of keeping afloat are gone."

The ship's on-board damage control systems and fire and flood-proof compartments give captains a range of options before calling for an evacuation. Captains are in close contact with teams at Royal Caribbean headquarters in Miami, and they can continue sailing even if the bridge is out of action.

Van Raalten emphasises that abandoning ship is a last resort, and notes that very few people in the industry have direct experience of a real evacuation. But that does not mean that the order to muster is necessarily a drastic step. The

Evacuations of cruise ships are a rarity, but operators are always looking for ways to improve their emergency procedures. Ian Duncan talks to Royal Caribbean's **Chris van Raalten** and Princess Cruises' **Paul Debnam** about the latest thinking.

# Exit strategy

Life at Sea treaty (SOLAS) requires that ships can be evacuated within 30 minutes, and the greater the number of passengers, the longer it takes to prepare them to abandon ship. Captains must be able to react quickly as situations develop, and be confident that their plans can be smoothly escalated if necessary.

### Role call

“The evacuation of a ship requires a well-rehearsed plan, delivered by a trained crew that understands its role,” says Paul Debnam, vice-president of occupational safety and emergency response at Princess Cruises. “You cannot have a plan that is written in a book and has not been practised, and then expect it to work.”

Their experience and training means ship crews have an important role in managing passengers in an emergency, and, while the captain has the ultimate responsibility, all crew members have a part to play. The hotel director takes charge of mustering guests, for example, and stateroom attendants check cabins for passengers. Emergency training takes place as soon as crews begin work on a vessel, and, while ships have different physical layouts, operators work to create consistent procedures across ships so reassigned crew members can fulfil their role on any vessel.

“It is sometimes easy to forget that an emergency situation also puts crews under stress and, if they are not trained, they are likely to exhibit the same stress responses as the public,” says Debnam. “The more the crew is exposed to the requirements of their duties through training, and the more unusual the circumstances they meet in a practice drill, the more likely it is there will be a good outcome in a real event.”

While many aspects of a cruise ship's operation have been changed by technology, responding to disasters remains very much a human process. Passengers are guided to their muster points by crew members, for example, and, once there, are checked off on a physical list of names. However, electronic systems are coming into use to speed up mustering on the largest ships, and to allow crews to coordinate between muster points, potentially reuniting families who might have become separated.

### Passenger response

Guests, of course, cannot be as thoroughly trained as the crew, and it is not hard to find video footage of cruise passengers behaving erratically during even minor emergencies. The principal challenge for operators is being able to move large numbers of people quickly and safely through the ship's decks. The EU has started to take a particular interest in evacuation procedures and passenger behaviour, allocating funding through the SAFEGUARD project.

Last July, researchers at the University of Greenwich, UK, conducted a mock mustering with real passengers on Royal Caribbean's *Jewel of the Seas*, using funding from the programme. In the study, guests wore an infrared tag which gave a precise record of their movements during the evacuation, and 100 cameras were placed throughout the ship to build a comprehensive video record. The results should enable operators and ship designers to develop more fluid procedures. Ultimately, the aim of

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SAFEGUARD is to shape future safety regulations, but as van Raalten notes, changes will come slowly.

In the meantime, cruise lines are taking the initiative in developing new ways to prepare guests for emergencies. One seemingly small change has had a big impact: on the largest ships, passengers are no longer required to wear their life jacket to the lifeboat drill. The shift has saved time and spared guests having to negotiate their way through crowds of bulked-up fellow passengers at the start of their vacation; thus speeding up the briefing and allowing guests to focus on their instructions.

In the event of an emergency, an automatic evacuation brief will be supplemented by a broadcast system that will relay important information to passengers and get them moving in the right direction. The system will even remind guests to continue taking their medication, and special crew teams will be on hand to retrieve any forgotten pills.

Of course, in many situations, the cruise operator will need to work with civilian authorities to complete a successful evacuation and rescue. Princess hosts a number of meetings and workshops to improve collaboration between emergency services and ship operators, and Debnam attended major events for the Pacific this year and for the Atlantic in 2009. “We feel close relationships are important,” he says.

### Roping in the port authorities

In well-developed cruise markets, government agencies are well prepared to deal with large-scale emergencies, but as operators seek to open up new destinations, they encounter ports less familiar with cruise vessels. The same automatic systems that relay information back to the lines' head offices can be used worldwide, but they are not a complete substitute for responsive local emergency services. In that situation, operators have to lend their experience and skills to help bring port authorities up to speed.

“They want to know how we carry out our emergency response, because it would be a very limiting factor for them to have a hazard tied up to their pier,” van Raalten explains.

Royal Caribbean will respond to requests from ports by laying out its procedures in detail. When a ship first arrives at a new destination, teams from the port will be invited on board to view its safety features for themselves and, if time permits, observe an emergency drill.

The critical element in an emergency response is planning; in unusual, tense situations people respond best when they have clearly defined and well-rehearsed roles to perform. So whatever new safety features are developed for ships in the future, the role of carefully devised plans for rare occurrences will not be diminished. While tweaks might be made, crews will continue to be thoroughly drilled, and passengers trooped down to muster stations, so that if the worst does happen, they will know how to respond. ■