Fire can become one of the most destructive and unforgiving forces known to man, destroying everything in its path. With this in mind we try to add some perspective on the prevention, detection and extinguishing of fires within ports and terminals as well as vessels.

The key areas are those of education first and foremost, closely followed by understanding risks and threats and then the implementation of passive and active fire protection, as well as notification.

Understanding your surroundings, storage, operating areas and contents are the first steps to reducing the risks of fire. It is advisable to get advice from specialists who can establish the layers of identification before you start to design out the threat of fire.

The layers of identification can be multiple and multi faceted. Starting with a footprint of the facility and understanding if you need to protect the property, people or products first. This will guide you towards the first layer of prevention required.

Together with this understanding, you also need to be a little creative with your approach and aim to apply notification on each layer. Without notification, whether through visual indication or audible alerts, you will lose a possibly critical chance to stop a fire.

The basic layers can be applied as follows:

**Facility footprint**
This should be a grid-referenced map of the land showing only the transportation routes and location of buildings. You will need to define access routes for emergency vehicles and first responders, locate muster stations and/or safe areas also making sure you input visual notification for such routes and areas.

In addition to this you can indicate where industrial firefighting equipment, storage tanks, fuel tanks, hazardous materials and emergency medical equipment are located. While doing this, also consider moving these items, if necessary to better locations. Ideally you don’t want fuel tanks, for example, next to a building used for industrial welding.

**Building footprint**
Understanding what each building is primarily used for is the next step. List your buildings and their contents together with the impact a fire could have on each. This will enable you to know what visual notification you need for personnel about to enter the building i.e. “this building contains highly flammable liquids, no smoking or naked flames!” You can also install boards outside that are capable of being updated as the contents of the building are changed. This gives great information for the emergency services when attending a possible fire.

Also this layer will allow you to look at whether you need passive fire suppression or active fire detection in the building.

Similarly, when identifying a building that is mainly occupied by staff or the public you need to ensure that your list identifies the need for a fire detection system designed to your national and local fire regulations and in accordance with your local Fire Department.

**Operational footprint**
The next layer should consider the operational side of the port or terminal and the personnel/public likely to be present. Notification is the most important aspect at this level. This can create the difference between a close call and catastrophe.

For your staff – training and observation is essential.

For the public – audible and visual notification is key. Designing these into your facility is essential, and looking at all possibilities should always lie in the hands of a specialist. Ensuring the safety of all is paramount and getting this wrong is unthinkable. You will again need to look at the design of fire detection systems, sprinkler systems and fire suppression systems, as well as the possibility of mass notification.

**Compiling your findings**
After following these general steps you will start to see where...
your facility is lacking coverage, indications, protection and notification. At this point it is advisable to gather specialists to help design out the risks and look at the notification for all staff and public that may visit the facility.

Depending on size and access around your facility you may need to look for systems, individual products, signage or complete notification and evacuation solutions.

Cutting through the confusion
In any emergency situation, seconds count. When many people are involved in the equation, communicating a desired message swiftly and effectively can, and does save lives. By taking an integrated approach to emergencies, identifying who needs to be made aware of the situation, and using the appropriate tools, the right message can be issued to the right people at the right time. This is no longer confined to a given site: with the availability of SMS text messaging, phone based call systems and e-mail, notifying personnel who are off-site is readily achievable. In modern-day society, with the threats we face, mass notification solutions provide the means to cut through the confusion and provide event-specific voice and visual messages, which can help control the chaos that is one of the major contributors to the consequential losses caused by a major incident.

First – Mass Notification Systems
- Outdoor (Giant Voice) Warning Systems
- Indoor Building Notification Systems
- Portable Alerting Systems
- Audible and Visual Notification Devices
Second – Personal and Regional Alerting Systems
- Desktop Alerts
- Email Notification
- Text messaging/SMS Alerting
- Automated Dialing Systems

Mass notification ensures safety of port operations, compliance with laws and regulations within the boundaries of the ports, and coordinates security and fire prevention activities.

With integration of your plan layers and prevention ideas, you will be in a very strong position to continually marshal your facility away from a major incident with the knowledge that whatever may happen, you can reach all of the people all of the time and have first responders on hand and notified of where the fire is, what is on fire and that all people are informed and directed to safe areas.

About the Author
Neil Primrose has over 20 years in the Fire and Security Industry covering specialist areas such as Fire, Security, Personal Protection, Project Placement Development and Implementation. He has worked on special projects in the US covering Risk and Threat Assessments to Ports and Harbours including NIPC, On working groups with the DRPA, CIOA and HLS, as well as the initial development group for TWIC. Mr Primrose has worked with specialists in Personal Protection and specialised in Designing Out Security. He is currently the Export Sales Manager for Cooper Fullon covering Audio and Visual products for Fire and Security through to Mass Notification.

About the Organisation
The Fire Industry Association, or FIA as it is commonly known, is a not-for-profit trade association with the aim of promoting the professional status of the UK fire safety industry. As well as promoting the professional standards of the fire safety industry, they provide training courses to members and non-members alike on all the latest legislation and regulations governing the industry and operators within it.