cabin safety update

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X-rated Screening: another health hazard?

As the issue of cosmic radiation hits the aviation news headlines again, crew members are understandably expressing their concern as to the potential damage this can do to their health. With reports emanating from Iceland indicating that aircrew may already be at greater risk of developing cancer than the general population, small wonder they are apprehensive about their bodies being subjected to X-ray screening for security purposes before they even board.

Philip Baum sets out to reassure us that the health risks are probably negligible...but that we might want to think twice about what we wear beneath our uniforms!

Many aircrew still feel that their being subjected to security screening at all is a complete waste of time. After all, they are entrusted with the safety and security of the flight...

Then again, it is true that aircrew, in the past, have taken it upon themselves to hijack aircraft or to smuggle weapons on board for 'friends' that are later used in criminal attacks against civil aviation. Furthermore, in the post 11 September world that we live in, few security experts are prepared to rule out any method of attack. After all, if terrorists can train to fly aeroplanes, it would be child's play for them to apply to become crew, or for other jobs, within the aviation industry.

Crew screening is, therefore, a cold reality. What's more, it is an area where there is likely to be even greater focus as authorities are actively encouraging screening personnel not to make such searches perfunctory – in other words, if they are going to search, they'd better do it properly no matter who they are screening.

Another harsh reality is that existing screening technology does little to guard against most of the threat items that could be taken on board a commercial jet.

news medical.

NEW SARS CASES REPORTED IN CHINA

A new case of SARS has been confirmed in Guandong, China - five months after the world epidemic was reported to be over.

The virus gene found in the sample taken from the latest victim was said to resemble the corona virus seen in civet cats. The discovery has fuelled the suspicion that the SARs virus may have been passed to humans from wild animals as civet cats are eaten in China as a delicacy.

An official from the Guandong health bureau, Feng Liuxiang, has told reporters that the region's wild animal markets are to be closed down and all the civet cats will be killed. "We will seek to seal and block all civet cats from other provinces and take action to kill civet cats in Guangdong province," he said.

Guangdong is also planning a health campaign which will involve exterminating rats and cockroaches.

The victim, a 32-year-old television producer, told doctors that he had

After all we, ourselves (as opposed to our bags), are only screened by metal detectors in the vast majority of locations. And a metal detector does exactly what it says on the box – it detects metal.

Tasmania Bound

If you need a case example, look no further than David Robinson a 40-year old suicidal individual who boarded a Qantas flight to Launceston, Tasmania, in May of this year. In Melbourne, he walked through the archway metal detector without anybody blinking an eyelid. No alarm. No buzz. No problem.

However, concealed on his person were two wooden stakes. Wood was hardly likely to cause a metal detector to alarm and he knew it. Neither would glass, nor ceramic, nor a host of other materials from which lethal weapons could be formed.

Using these two stakes, Robinson attempted to gain access to the cockpit and it was only the heroic efforts of flight attendants Greg Khan and Denise Hickson that prevented the Qantas flight, and its complement of passengers and crew, becoming the next set of victims.

Metal Detection

The archway metal detector and hand-held magnetometer (sometimes better known as either a hand wand or hand-held metal detector) are very much part and parcel of airport life. For 30 years they have been, together with the baggage X-ray machine, the first (and often last) line of defence against terrorism in the skies.

However, it is important to remember that, in the 1960s and 1970s, we were up against a very different kind of threat. Metal detection proved a successful tool to counter that threat as it was effective in the identification of the weapons traditionally used by the hijackers of that era – handguns and grenades. The threat has evolved, yet the security technology currently deployed has not…

Today, passengers carrying non-metallic weapons can walk through almost every airport in the world and gain access to passenger flights. Even with metallic items of the kind reportedly used on 11 September, security is relatively easily bypassed as long as we are reliant on metal detection alone.

Hijackers armed with small blades or box cutters, which are below the sensitivity level of most archway metal detectors, have the odds stacked in their favour.

In Search of The Box Cutter

In truth, I am a firm believer in profiling as the first line of defence as I do not think there is any technology that can match the ability of the trained human being to detect that something is wrong.

However, I too must accept the reality of a technology-driven world where automated solutions are perceived as being the 'way to go'. It's not that I dislike technology, but rather an issue of emphasis.

There are new products that have the potential to become key to safeguarding aviation as the century continues and many of those are ones that have the ability to detect a wide range of threat items, made from a range of different materials, that can be concealed on the human body…or even in it.

Body Orifices

Not the subject of polite dinner party conversation it's true, but from a professional standpoint we can hardly ignore the fact that our bodies do have orifices, which are not subject to pat down search, yet can still conceal weapons. Far fetched? No, far from it.

not eaten wild animal meat or left the region in the previous month. As a precaution, eighty-one people who had contact with the patient were quarantined, but they have all now been released - as has the patient.

There are also suspicions that a Philippine maid, who had been working in Hong Kong, and a 35-year-old investor may also be infected with the virus. These cases have not yet been confirmed, however, and the World Health Organisation (WHO) says that it is likely that more suspected cases are likely to surface as the symptoms can be confused with winter illnesses such as influenza.

Two Chinese cabin crewmembers have also been held in isolation at Sydney hospital after they showed signs similar to those of Severe Acute Respiratory Syndrome (SARS). Doctors have said, however, that early tests indicate that it is unlikely that they are suffering from SARS.

The cabin crewmembers flew into Sydney on a China Southern Airlines flight. Paul Armstrong, Acting Director of Communicable Diseases, New South Wales Health said that other passengers onboard the aircraft were not at any risk.

news industry.

BOEING DROPS SILKAIR LAWSUIT

Boeing has dropped a lawsuit against Silkair and one of carrier's pilots after new evidence has revealed that a mechanical fault may have been to blame for an accident in 1997.

Flying from Jakarta to Singapore, SilkAir Flight MI 185 crashed into Indonesia's Musi River - killing all 104 people on-board. Until now, the cause of the accident has been a mystery. Prior to the crash, air traffic controllers received no distress call

from the flight crew and Indonesian accident investigators failed to unearth any conclusive evidence that pinpointed the causal factors.

Following the tragedy, lawyers representing the families of the victims pointed towards the action of the pilot being responsible for the accident, claiming that the Captain Tsu Way Ming had deliberately put the aircraft into a nosedive.

Despite reaching an out of court settlement with the victims' families, Boeing had also alleged that pilot action was the cause of the accident and made the decision to issue a suit against the pilot and airline. With rudder malfunction now being cited as the probable cause, Boeing has dropped the lawsuit.

conferences.news

INTERNATIONAL FIRE AND SAFETY RESEARCH CONFERENCE

The Fourth International Fire and Cabin Safety Research Conference will be held on November 15-18, 2004 in Lisbon, Portugal.

The conference is organised by the Cabin Safety Research Technical Group (CSRTG) and will be held in Europe for the first time. It will advise the aviation community of recent, current and planned research activities in the areas of aircraft fire and cabin safety.

Registration details are available at www.caa.co.uk/srg/intsd/event

The CSRTG has membership from the majority of the major aviation regulatory authorities, including the Federal Aviation Administration (US), the European Joint Aviation Authorities (JAA), Transport Canada Civil Aviation, The Aviation Register of Russia, the Brazilian Department of Civil Aviation, the Civil Aviation

Prisoners, and their colleagues on the outside, have long used it as a method of transporting a range of goods into and out from their confines and the film 'Papillon' could be used as a 'How To Smuggle A Device' guide in this area.

Given the willingness of people to commandeer planes and fly them into population centres, anal or vaginal weapon secretion seems like a picnic in comparison.

Prisons actually do use one product specifically developed for the examination of body orifices - the Body Orifice Security Scanner (B.O.S.S.). Given its ability to detect metal in oral, nasal, vaginal and anal orifices, customs authorities are also exploring its potential. How long before we use it for screening passengers and crew?

Hopefully a long time, as like the archway and magnetometer, it only detects metal and we have already established that that is simply one threat material.

Human X-Ray

Like it or not, the technology currently most capable to screen us for all types of threat objects is the X-ray machine. Not the ones used for cabin or checked baggage, nor the ones used in hospitals, but rather tailored systems that can safely reveal what we have beneath, or in, our outer garments.

Regardless of assurances to the contrary, aircrew are likely to be more concerned than the general public. They already fear the levels of cosmic radiation to which they are exposed and when reports, such as the Icelandic one that recently generated so much media hype, say, "The increased risk of breast cancer and malignant melanoma among cabin attendants seems to be occupationally related", who can blame them?

The truth, however, is that the report has not stated that such incidents are the result of cosmic radiation, only that they may be 'occupationally related'. In other words, it could well be a lifestyle issue – we cannot exclude the fact that flight attendants have a greater proclivity for sunbathing than the general population!

Any X-ray machine deployed in a security screening process has to meet minimum standards to ensure that there is no risk to our health. And, encouragingly, the US Council for Radiological Protection has deemed the maximum quantity of scans a person should be subjected to (using the Rapiscan system) as being 2500 per annum – aircrew would struggle to get anywhere near that figure.

In a way to further reduce fears, the industry is now starting to refer to the technology as Compton Imaging, thereby avoiding the use of the word 'X-ray' with its perceived negative connotations.

Potentially harder to resolve is the privacy issue. Using backscatter X-rays, one can certainly get a very clear image of the body form as Susan Hallowell, director of the Transportation Security Administration's R&D laboratory, bravely demonstrated on 25 June 2003.

In the eyes of the world's media Hallowell, wearing a dark skirt and blazer in the flesh (as it were) appeared naked on screen, save for the gun and bomb she had hidden under her outfit.

"It does basically make you look fat and naked, but you see all this stuff," Hallowell said, leading by example. Perhaps one way of passengers accepting the technology is if they see crew agreeing to be so screened?

Encouraging? Yes, yet our valiant efforts may yet be thwarted by groups such as the all-powerful American Civil Liberties Union that seems set on denying us the very civil liberties it purports to protect the right to live in a safe society.

In a 2001 report on the X-raying of passengers and crew they stated that, "We oppose using this as part of a routine screening procedure. Passengers expect privacy underneath their clothing and should not be required to display highly personal details of their bodies such as evidence of mastectomies, colostomy appliances, penile implants, catheter tubes and the size of their breasts or genitals as a pre-requisite to boarding a plane."

Come on! In the same way the pacemaker patients can request a pat down search rather than be screened by an archway metal detector, so could others request alternative screening procedures to be effected should there be a valid medical reason backed up with appropriate documentation.

The privacy issue is also being addressed by the manufacturers who are developing algorithms that will result in the areas around the breasts and genitalia appearing clouded on the monitor.

Whilst an admirable achievement, it will result in a net reduction in the degree of security afforded and could potentially provide the criminal with a means of effectively secreting a weapon thereby negating the value of the technology.

There are three commercially available products for use in the airport environment. Rapiscan and American Science & Engineering both have personnel scanners that utilise X-ray backscatter technology, thereby generating images of the body such as Ms. Hallowell demonstrated.

MMC International (MMC), however, utilises transmission X-rays that generate images that are more similar to medical X-rays inasmuch as the screener gets an inside view of the body rather than a view of the passenger naked.

Transmission X-ray requires one scan only, whereas the backscatter approach necessitates the passenger to be screened four times to give views of the front, back and each side. Transmission also provides a much clearer image and enables the better detection of internal carries, such as drugs and diamonds that have been swallowed by couriers.

Each passenger becomes somewhat sexless so the privacy issue becomes less of a concern; whilst the underwire of a brassiere may give away the person's sex (let alone their physical presence in the scanner), there are no resultant images of breasts or genitalia.

Millimetric Wave Imaging

An emerging technology has been that of millimetric wave imaging which generates an image similar to that of the systems utilising X-ray backscatter technology yet without subjecting the passenger to any radiation. Health hazards are no longer an issue yet the privacy issue is still a battle to be won.

QinetiQ, in the UK, actually carried out trials of its millimetre wave scanner at London's Gatwick airport in June 2002 and the results were extremely encouraging, not only in respect of image quality, but also in respect of passenger acceptance.

According to QinetiQ's Kevin Murphy, "QinetiQ psychologists tested the reactions and views of 400 passengers who had passed through the mm-wave system. The passengers were broadly split evenly between male and female and across age groupings. All had been made aware before co-operating with the trials team that the system would be able to 'see' beneath their clothing.

The responses showed that a comfortable majority would prefer a screening technology to a pat down search, and many were reassured that new passenger screening technology was on the horizon that would make them safer in the skies. A few admitted to feeling a little embarrassed but only one passenger out of the 400 we tested was so uncomfortable that they refused to be screened."

Safety Authority Australia and the Japanese Civil Aviation Bureau.

news security.

SECURITY ALERT AT AMSTERDAM

An abandoned suitcase led to the evacuation of hundreds of passengers from Amsterdam's Schipol Airport. Sniffer dogs and a bomb squad were called in to deal with the matter and their investigations found the luggage to be free of explosives.

The suitcase was found close to a check-in desk for European flights and caused two departure halls to be completely sealed off for several hours.

The airport's third departure hall remained opened but was also affected by numerous flight delays.

AIR FRANCE FLIGHT DIVERTED

An Air France flight from New York to Paris was diverted to St John's, Newfoundland after a passenger who had checked in baggage did not board the aircraft.

The airline's New York team realised that the bag had been mistakenly loaded and alerted the pilot shortly after the aircraft had taken off.

On arrival in St John's, the incident was treated as an emergency with all of the 268 passengers and crew being evacuated and the local bomb squad being called in.

In a statement, Air France said, "This mistake was the result of a misunderstanding with a passenger at check-in who cancelled his trip because he had excess baggage to pay."

The airline went on to say that the individual in question was a frequent passenger with Air France and was

well known by the staff. The carrier confirmed that the Captain, nonetheless, decided to take the precaution of diverting and having the luggage off-loaded.

Along with British Airways, Air France cancelled several of its flights to the US over the Christmas holidays due to security concerns. There were also reports that US fighter jets had escorted some of the carrier's flights over US airspace, as a precautionary measure against September 11-style terrorist attacks.

However the Wall Street Journal Europe said that the flights might have been cancelled unnecessarily. The publication claimed that the US Federal Bureau of Investigation had given the carrier a list of six known militants linked to al Qaeda, together with information that they were planning to hijack an Air France jet.

Unfortunately there were a number of innocent passengers with names that matched those on the terrorist list. These included a child, a Welsh insurance agent and an elderly Chinese woman as well as three French citizens.

Aviation security analyst, Philip Baum spoke of the risk of such mix-ups when trying to match names. "It raises the whole question of whether or not you should be using this method as you could almost find a name match on every single flight."

While western intelligence agencies have provided information that has suggested an increased danger to certain flights, this has not been extensive enough to lead to suspects or make any specific arrests.

Security analysts have suggested that this may be due to much of the information being gleaned through email and telephone monitoring, which has been limited in its content and has only provided, "a piece of the puzzle", such as a flight number or routing. .

Such vague intelligence leaves the authorities with having to complete comprehensive checks on all individuals working on or in connection with a flight as well as on the passengers

QinetiQ is also developing privacy software. Israel has shown great interest in the product, yet even the nation that has the most invasive passenger screening system in the world feels that images of naked people may not go down well at home, especially (and understandably) amongst the religious communities. A similar reaction is to be expected from the Arab world.

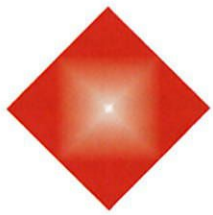
Conclusion

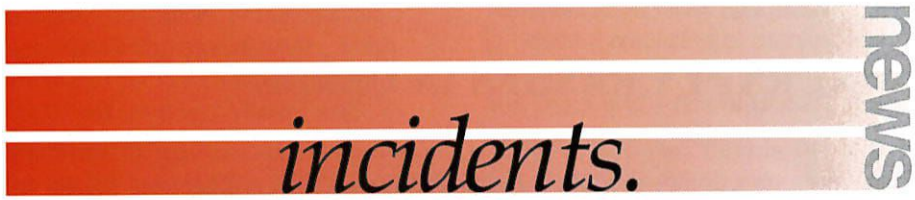
X-ray and millimetre wave imaging offer much greater screening potential than either metal detection or explosive detection technology. It's easy to find reasons not to embrace the technologies, but the sceptics need also to ask what other measures can practically be taken to effectively screen passengers.

Creative thinking is a necessity. For those concerned about privacy issues, it would appear that those who fear being seen naked are less concerned if the screener is placed out of sight. In other words, if the screener can only ever see a stream of X-ray or millimetre wave images and never see the actual passengers in their dressed state, no worries…

Pat down searches are, in my opinion, both much more invasive and far less likely to result in the detection of a threat object. They also necessitate greater manpower deployment at screening points as male and female screeners need to be available to effect searches on persons of a similar gender.

Remember that even X-ray and millimetre wave offer no guarantee against assault by duty free bottles, fists or even a fork from a meal tray, but they are the future. Or maybe even the present…





EIGHT INJURED IN EMERGENCY LANDING

Eight people were injured when an Austrian Airlines aircraft was forced to make an emergency landing in a field. The pilot advised the tower at Munich Airport that the Fokker 70 aircraft was suffering from engine problems and brought the aircraft down about two kilometres short of the runway. Heavy snow helped to soften the landing and the aircraft was said to have slid to a halt. Of the reported 28 passengers and four crew on-board, those that were injured were treated in hospital and at the airport's medical centre.

EGYPTIAN CRASH KILLS 148

A flight operated by Egyptian charter carrier, Flash Airlines, crashed into the sea killing all on board. The aircraft was reported to have gone down shortly after taking off from the resort of Sharm el Sheik. Although no distress call was reported, French and Egyptian officials have said that the preliminary findings suggest the accident may have been due to technical failure.