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Submission by the Australian Airline Pilots' Association On The Aviation Transport Security Amendment (Screening) Bill 2012

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Executive Summary

The Australian Airline Pilots' Association (AusALPA) is the Member Association of the International Federation of Airline Pilots' Associations (IFALPA) in Australia and represents over 5000 Australian professional pilots in safety and technical matters.

As a member of IFALPA, AusALPA has access to information on many safety and technical matters which have previously been addressed by other Member Associations and conforms to the policies of IFALPA. IFALPA rejects the use of any screening methodology that exposes crew members to ionizing radiation.

Whilst it is acknowledged that the initial introduction to Australia will be for international terminals, the extension of security screening from 01 July 2012 to all airports that have Regular Public Transport (RPT) services operated by aircraft above 20,000kgs has already been planned. Our submission is based on this being the future standard in all Australian high capacity terminals.

AusALPA has concerns over the introduction of these systems in four main areas, namely:

1. The effectiveness of the equipment,
2. Health issues,
3. Privacy issues, and
4. Mandatory compliance requirements.

Each of these factors will be addressed separately.

The Technology

The technology is one of two types of whole body imaging technologies currently being used to perform full-body scans of airline passengers to detect hidden weapons, tools, liquids, narcotics, currency, and other contraband. There are two forms of whole body imaging technologies, the Backscatter X-ray and Millimetre Wave scanners. These airport security machines are also referred to as "body scanner", "whole body imager (WBI)", and "security scanner".

Backscatter X-ray is an advanced X-ray imaging technology. Traditional X-ray machines detect hard and soft materials by the variation in transmission through the target. In contrast, backscatter X-ray detects the radiation that reflects from the target. It has potential applications, where less-destructive examination is required, and can be used if only one side of the target is available for examination.

Millimeter Wave scanners themselves come in two varieties: active and passive. Active scanners direct millimeter wave energy at the subject and then interpret the reflected energy. Passive systems read only the raw energy that is naturally emitted from the human body or objects concealed on the body. The key difference is that passive systems direct no energy at the subject being screened and are as safe as a digital camera for both the screener and the subject. (Harwood, 2010)**.**

The scanners proposed for deployment at Australian airports are Millimetre Wavelength Wave L-3 ProVision ATD (Automatic Target Detection) using active scanner technology.

Effectiveness of the Equipment

The Millimetre Wavelength scanners proposed for Australian airports have a history of mixed success. Results from several countries were discussed in an article entitled "Sweating bullets: Body scanners can see perspiration as a potential weapon" which notes:

"The scanner, known as the millimetre-wave machine, uses low-level electromagnetic waves that, unlike X-rays, have not been linked to cancer. The (USA) Transportation Security Administration already uses the millimetre-wave machine and says both types of scanners are highly effective at detecting explosives hidden under clothing. The TSA declined to answer detailed questions. Instead, the agency released a statement saying that it had tested the automated detection software rigorously.

'Once it met the same high standards as the technology currently in use, TSA successfully tested the software in airports to determine whether it was a viable option for deployment,' the statement said. 'While there are no silver bullet technologies, advanced imaging technology with this new software is effective at detecting both metallic and non-metallic threats.' But as late as last November, the head of the TSA told Congress that false alarms were too frequent to deploy the privacy software. The TSA said the rate has improved since then and now meets its standards, which it would not disclose.

The problem of false alarms comes down to fundamental physics. Millimetre waves penetrate clothing and reflect off objects. But because of their frequency, millimetre waves also reflect off water, which can cause the scanner to mistake sweat for a potentially dangerous object, said Doug McMakin, the lead researcher who developed the millimetre-wave scanner at the Pacific Northwest National Laboratory. In addition, millimetre waves penetrate clothing materials differently, and layers of clothing can create a barrier, triggering a false alarm.

But two of Europe's largest countries, France and Germany, have decided to forgo the millimetre-wave scanners because of false alarms triggered by folds in clothing, buttons and even sweat.

The German interior ministry tested two L-3 body scanners with the automated target detection software at Hamburg Airport, screening 809,000 airline passengers from September 2010 through July 2011. Despite the high rate of detection, the delays caused by frequent false alarms were so unbearable that Germany decided that the technology was not ready for everyday use.

Nearly seven out of 10 passengers had to be stopped for further screening. Although some passengers had forgotten coins or tissues in their pockets, 54 per cent of all passengers who went through the scanners triggered true false alarms -- meaning that no hidden objects were found on those people, a ministry spokesperson said. In Germany, the false positive rate was 54 per cent, meaning that every other person who went through the scanner had to undergo at least a limited pat-down that found nothing. Jan Korte, a German parliament member who focuses on homeland security, called the millimetre-wave scanner "a defective product."
France tested the scanners with and without the privacy software on more than 8,000 passengers flying out of Paris's Charles de Gaulle Airport to New York from February to May 2010. But the government decided not to deploy them because there were too many false alarms, said Eric Heraud, a spokesman for the French Civil Aviation Authority. Heraud wouldn't release specific figures but said the false alarm rate was

higher with the automated detection than when officers interpreted the images. France plans to conduct a new test of the millimetre-wave scanners in 2012.

Italy tested two L-3 scanners with the automated detection software at the airports in Rome and Milan. The test ended in September, and officials are awaiting a final decision on whether to deploy the machines later this month. Carrabba said he thinks Italy will use them, and that the false positive rate will improve with more training and better preparation of the passengers for screening. In Italy, the rate of false alarms was 23 per cent, said Giuseppe Daniele Carrabba, head of the airports coordination department for the Italian Civil Aviation Authority."

It had been stated that the technology to be introduced will be effective in identifying explosives and other non-metallic substances. There is, however, evidence to suggest that this is not so. *"The efficacy of millimeter wave scanners in detecting threatening objects has been questioned. Formal studies demonstrated the relative inability of these scanners in detecting objects—dangerous or not—on the person being scanned. Additionally, some studies suggested that the cost–benefit ratios of these scanners are poor. As of January 2011, there had been no report of a terrorist capture as a result of a body scanner."* (Stinchfield, 2011).

An article in the Independent highlighted public concerns in the United Kingdom in relations to the effectiveness of millimetre-wave technology when it stating:

"The explosive device smuggled in the clothing of the Detroit bomb suspect would not have been detected by body-scanners set to be introduced in British airports, an expert on the technology warned last night. The Independent on Sunday has also heard authoritative claims that officials at the Department for Transport (DfT) and the Home Office have already tested the scanners and were not persuaded that they would work comprehensively against terrorist threats to aviation.

"…body-scanners, using "millimetre-wave" technology and revealing a naked image of a passenger, have been touted as a solution to the problem of detecting explosive devices that are not picked up by traditional metal detectors – such as those containing liquids, chemicals or plastic explosive. Tests by scientists in the team at Qinetiq (Qinetiq is a British global defence technology company, formed from the greater part of the former UK government agency, Defence Evaluation and Research Agency (DERA), when it was split up in June 2001) …, showed the millimetre-wave scanners picked up shrapnel and heavy wax and metal, but plastic, chemicals and liquids were missed.

If a material is low density, such as powder, liquid or thin plastic – as well as the passenger's clothing – the millimetre waves pass through and the object is not shown on screen. High-density material such as metal knives, guns and dense plastic such as C4 explosive reflect the millimetre waves and leave an image of the object." (Merrick, 2010).

Similar concerns have been reported in the United States, as demonstrated by USA Today:

"Ability to detect weapons and explosives. The Government Accountability Office said in March that it "remains unclear" whether the machines would have detected the explosives in the underwear of a man who allegedly tried to blow up a Northwest Airlines jet bound for Detroit on Christmas Day.

Brian Sullivan and Steve Elson, two former Federal Aviation Administration security agents, say the machines are ineffective for finding explosives and preventing a terrorist from smuggling explosives on board an aircraft. Billie Vincent, the FAA's former security director, says the machines "incrementally improve" on metal detectors if TSA agents alertly resolve identified threats. There are no screening technologies that "are 100% effective," he says." (Stoller, 2010).

Backscatter X-Ray technology is also not invincible with regard to detecting explosives. Simply replacing millimetre-wave scanners with X-ray backscatter scanners would not necessarily resolve the problem. Leon Kaufman and Joseph W. Carlson, two professors at the University of California, San Francisco, stated in their paper, that:

"The findings are pretty clear-cut: a smart terrorist could defeat backscatter units …with relative ease. It is very likely that a large (15-20 cm in diameter), irregularly-shaped, cm-thick pancake with beveled edges, taped to the abdomen, would be invisible to this technology, ironically, because of its large volume, since it is easily confused with normal anatomy. Thus, a third of a kilo of PETN, easily picked up in a competent pat down, would be missed by backscatter "high technology". Forty grams of PETN, a purportedly dangerous amount, would fit in a 1.25 mm-thick pancake of the dimensions simulated here and be virtually invisible. Packed in a compact mode, say, a 1 cm×4 cm×5 cm brick, it would be detected…

It is also easy to see that an object such as a wire or a boxcutter blade, taped to the side of the body, or even a small gun in the same location, will be invisible." (Kaufman & Carlson, 2010).

In response to questions from the Senate Estimates Committee on 14 February 2012 regarding the "Strengthening Aviation Security Initiative", Mr. Paul Retter, Executive Director, Office of Transport Security, stated that the scanner trial in Australia had encompassed some 20,000 people and that *"the results were that we got about 40 per cent alarm rates, that is, at least one alarm on a passenger in 40 per cent of occasions."* He also stated in response to a question regarding false positive results that *"I do not have the report in front of me, but I suspect there were a number of prohibited items a passenger may have accidentally been taking through"…* (Rural and Regional Affairs And Transport Legislation Committee, 2012)

If the statistics from other countries are consistently applied then up to 70% of the positive results could have been false positives.

Recommendation: Health Issues

The Australian Government should adopt the principle that Whole Body Imaging is not the complete answer to anti-terrorist aviation security and adopt a layered approach which utilises a combination of all current methods and technologies and allows for introduction of future developments.

Health Issues

Much has been written on the relative safety of both Backscatter X-Ray and Millimetre Wavelength scanners. Whilst it is generally accepted that Millimetre scanners provide the lesser risk to health, there is no consensus on the level of risk produced by both types of scanner.

This can be highlighted in the article "TSA Body Scanners: Are They Safe?":

"The millimetre wave technology used in some body scanners has little, if any, negative health effects on the human body. Scanners using this technology emit waves that are contained within the T-ray range of the wave spectrum, which causes certain materials, such as clothing, to appear translucent, and creates a three dimensional image of a subject's body. Millimetre waves do not use radiation, and there is no evidence as of yet that suggests these waves cause or accelerate any form of cancer. There has been some speculation that the waves have an impact on a level of DNA strands, but this result has not been supported in any studies. The size and frequency of the waves used in these imaging scanners are generally considered insignificant to a person's health, especially when compared to the possible health problems associated with cell phones, and the radiation passengers are exposed to by flying in airplanes themselves.

Other body scanners use backscatter X-ray technology, which detects any radiation that a given object or subject may emit during the scan. The resulting two-dimensional image gives the observer a clear view of any materials that may be hidden by the subject beneath their clothing using ionized radiation. This radiation may have a negative effect on subatomic particles, causing them to react unnaturally. Though this form of X-ray does not produce the same radioactive damage as traditional X-ray devices, there is still some concern over long-lasting effects they may cause, particularly for people who are frequent fliers.

Ionized radiation, in high amounts with repeated exposure, can cause some serious biological damage, and though body scanners using backscatter X-rays use the waves in very small amounts, there is no known minimum to ensure that the rays will not damage tissue. Because there are no long-term experiments dealing with ionized radiation, the lasting effects of even small amounts of this radiation are unknown. Critics of full body scanners argue that, because of the lack of research regarding the dangers of extended exposure to ionized X-rays, they should not yet be implemented." (X-Ray Technician, 2011).

This concern is also evident in the extract below:

"The TSA says the backscatter technology has been evaluated by the Food and Drug Administration, the National Institute for Standards and Technology and the Johns Hopkins University Applied Physics Laboratory. Survey teams are using radiation-detecting dosimeters to check the machines at airports. The TSA says the results have all confirmed that the scanners don't pose a significant risk to public health.

According to the agency and many radiation experts, the dose is so low, even for children or cancer patients; that someone would have to pass through the machines more than a thousand times before approaching the annual limit set by radiation safety organizations. But the letter to the White House science adviser, signed by five professors at University of California, San Francisco, and one at Arizona State University, points out several flaws in the tests. Studies published in scientific journals in the last few months have also cast doubt on the radiation dose and the machines' ability to find explosives.

A number of scientists, including some who believe the radiation is trivial, say more testing should be done given the government's plans to put millions of passengers through the machines. And they have been disturbed by the TSA's reluctance to do so. 'There's no real data on these machines, and in fact, the best guess of the dose is much, much higher than certainly what the public thinks," said John Sedat, a professor emeritus in biochemistry and biophysics at UCSF and the primary author of the letter.'" (Grabell, 2011)

According to the TSA (n.d), 486 advanced imaging technology machines are being used at 78 airports nationwide. The agency says the devices are safe and meet national health and safety standards for all passengers, including children, pregnant women, and individuals with medical implants. David Brenner, director of the Center for Radiological Research at the Columbia University Medical Center stated *"I think one of the main issues with this paper is that it took doses direct from the manufacturers' data, but in other recent publications doses were estimated based on the actual x-ray backscatter images that the machine produces and were higher". (Rice, 2011).*

His article, published in April in the Journal Radiology, also it was found the radiation exposure to be small, but stated even though the cancer risk is low, it is possible. *"The bottom line is that both my paper and this suggest that there will be some cancers produced in the long run from mass screening with X-rays,"* he says. *"The analogy I usually give is with someone buying a lottery ticket. Your individual chance of winning is extremely small, but we do know that some people will indeed win. There is considerable uncertainty about just how many cancers that will be." (Rice, 2011).*

Health concerns were also noted by Boian Alexandrov from the Center for Nonlinear Studies:

"But what of the health effects of terahertz waves? At first glance, it's easy to dismiss any notion that they can be damaging. Terahertz photons are not energetic enough to break chemical bonds or ionise atoms or molecules, the chief reasons why higher energy photons such as x-rays and UV rays are so bad for us. But could there be another mechanism at work?

The evidence that terahertz radiation damages biological systems is mixed. "Some studies reported significant genetic damage while others, although similar, showed none," says Boian Alexandrov at the Center for Nonlinear Studies at Los Alamos National Laboratory in New Mexico and a few buddies. Now these guys think they know why.

Alexandrov and co have created a model to investigate how THz fields interact with double-stranded DNA and what they've found is remarkable. They say that although the forces generated are tiny, resonant effects allow THz waves to unzip double-stranded DNA, creating bubbles in the double strand that could significantly interfere

with processes such as gene expression and DNA replication. That's a jaw dropping conclusion.

And it also explains why the evidence has been so hard to garner. Ordinary resonant effects are not powerful enough to do this kind of damage but nonlinear resonances can. These nonlinear instabilities are much less likely to form which explains why the character of THz genotoxic effects are probabilistic rather than deterministic, say the team.

This should set the cat among the pigeons. Of course, terahertz waves are a natural part of environment, just like visible and infrared light. But a new generation of cameras are set to appear that not only record terahertz waves but also bombard us with them. And if our exposure is set to increase, the question that urgently needs answering is what level of terahertz exposure is safe." (The Physics arXiv Blog, 2009).

Whilst tests have been carried out and results published regarding the safety of body scanners, some doubt on the validity is now starting to be reported. In the United States the Electronic Privacy Information Centre reported that:

"In a FOIA lawsuit against the Department of Homeland Security, EPIC has just obtained documents concerning the radiation risks of TSA's airport body scanner program. The documents include agency emails, radiation studies, memoranda of agreement concerning radiation testing programs, and results of some radiation tests. One document set reveals that even after TSA employees identified cancer clusters possibly linked to radiation exposure, the agency failed to issue employees dosimeters - safety devices that could assess the level of radiation exposure.

Another document indicates that the DHS mischaracterized the findings of the National Institute of Standards and Technology, stating that NIST "affirmed the safety" of full body scanners. The documents obtained by EPIC reveal that NIST disputed that characterization and stated that the Institute did not, in fact, test the devices. Also, a Johns Hopkins University study revealed that radiation zones around body scanners could exceed the "General Public Dose Limit." (EPIC, n.d)

The concerns are not limited to the United States. *"In its approval of full body scanners for use at airports last week, the European Union banned the use of scanners that relied on backscatter radiation due to safety concerns. These types of scanners are widely used in the United States and have been source of sharp criticism, yet the Transportation Security Administration (TSA) has continued to insist that they are safe." (*Homeland Security, 2011).

Recommendation: Privacy Issues

The Australian Government should adopt the principle that only non-ionising radiation scanners may be used to effect body scanning at Australian airports and reject the use of X-ray technology. (AusALPA acknowledges that Minister Albanese confirmed in his speech to the Parliament on 16 February 2012 that only millimetre wavelength scanners will be used in Australia and, while supporting that stance, contends that there are still health issues which need to be addressed prior to their introduction).

Privacy Issues

The subject of privacy and retention of human dignity has been a topic of much discussion in relation to the introduction of body scanners. There is general consensus amongst nations that individual privacy must be balanced with achieving effective security outcomes.

The *Convention on Human Rights and Biomedicine* (art.1), states that:

*"Parties to this Convention shall protect the dignity and identity of all human beings and guarantee everyone, without discrimination, respect for their Integrity and other rights and fundamental freedoms with regard to the application of biology and medicine". (Council of Europe, 2009).*The Centre for Science, Society and Citizenship (CSSC) raised the contention that the principle of body integrity does not concern only violations of the body resulting in suffering or in adverse health conditions, but it also deals with intrusions without harmful effects. This leads to an additional issue, which is particularly relevant to the body scanner debate.

Does a bodily or psychological intrusion constitute a violation of integrity only if it is perceived as such? Or, on the contrary, are there objective criteria to establish when a violation infringes the right to integrity? Indeed the principle of the "inviolability of the body" includes two cognate, but different, concepts:

1. *The view "that the body is a 'sacredness' in the biological order"; and*
2. *The view of the body as personal property, whose borders cannot be trespassed without the owner's consent.*

(Ashton & Mordini, 2011)

There are then two diverse perspectives about body integrity, the former contends that the right to be free from bodily (and mental) intrusion is inherently part of the notion of human dignity, the latter maintains that bodily integrity is the right of "every human being ... to determine what shall be done with his own body" and to protect his physical privacy. While the dignitarian approach usually contends that body integrity is – at least in part – an objective concept, the privacy approach emphasises the subjective aspect of body integrity, which always implies the notion of consent (or lack of) to the intrusion." (Murray, 1987).

Following is an indication of the stance taken by several nations who have introduced or are introducing body scanners.

The *Information and Privacy Commissioner of Ontario*, Ms Ann Cavoukian, stated *"Whole Body Imaging technologies that incorporate strong privacy filters – rendering bodily images to mere outlines, to front-line screeners, can deliver privacy-protective security. When combined with appropriate viewing, usage and retention policies, privacy algorithms that obscure personal details, while still allowing potentially threatening concealed objects to be revealed, will allow WBI implementations to satisfy security requirements without sacrificing (and perhaps enhancing) passenger privacy. We believe that this positive-sum paradigm can, and should be, the end goal*

of such airport security passenger screening technologies – security and privacy, not one at the expense of the other". (Cavoukian 2009).

The following is an extract from the US TSA website "Frequently Asked Questions, Advanced Imaging Technology" (n.d):

Q. What has TSA done to protect my privacy?
A. TSA has implemented strict measures to protect passenger privacy, which is ensured through the anonymity of the image.

For Millimetre wave technology: Automated target recognition (ATR) software detects any metallic and non-metallic threats concealed under a passenger's clothing by displaying a generic outline of a person on a monitor attached to the AIT unit highlighting any areas that may require additional screening. The generic outline of a person will be identical for all passengers. If no anomalies are detected, an "OK" appears on the screen with no outline.

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For Backscatter technology: A remotely located officer views the image and does not see the passenger, and the officer assisting the passenger cannot view the image. The image cannot be stored, transmitted or printed, and is deleted immediately once viewed. Additionally, there is a privacy algorithm applied to blur the image.

Recommendation: Mandatory Compliance

That the Australian Government adopts the privacy principles practiced by the major Western democracies as World's Best Practice and ensure their introduction into the Australian Aviation Security programme.

Mandatory Compliance

For the year ending December 2011 the Australian Bureau of Statistics reported that there were a total number of approximately 55,000,000 passengers carried on Australian Domestic air routes. This equates, in a simple manner, to two flights per year per head of population. These two flights per year would result in two exposures to body scanning apparatus for those travellers. If the evidence on exposure rates is valid then this equates to a minimal health threat for those travellers.

The problem is exacerbated for frequent flyers and more so for aircrew, both pilots and cabin crew. It is not possible to estimate the rate of exposure for frequent flyers however an estimate can be made for aircrew. Aircrew, by nature of their employment, who attend work on four occasions per week face the possibility of exposure at least four times during that period and possibly up to eight times or more. This equates to a possible exposure rate of between 200 and 400 times per year and possibly significantly higher as crews changing between aircraft, terminals, flights or domestic/international operations could be screened multiple times during a single duty period.

By making scanning a mandatory requitement for travel the health risk for aircrew is therefore 100 to 200+ times higher than for the average traveller. In the United States the TSA has mandated that all pilots, on duty, who can provide two forms of ID, are not required to undergo any form of body scanning. The precedent supporting such exemption was set in relation to Liquid, Aerosol and Gel (LAGS) screening in which 18 of the world's major aviation countries (including the US, UK and Europe) exempted uniformed crew members from LAGS screening.

In addition to the health risk debate there are also question of religious and ethnic sensitivities.

Whilst mandatory screening is to be introduced both in Australia and Britain, it is not the case in the European Union or in the United States.

"The European Commission has adopted today a proposal for a European Union legal framework on security scanners. This legislation allows airports and Member States that wish to use security scanners for the screening of passengers to do so under strict operational and technical conditions…Passengers must be informed about conditions under which the security scanner control takes place. In addition, passengers are given the right to opt out from a control with scanners and be subject to an alternative method of screening." (European Commission, 2011).

The following is an extract from the US TSA website "Frequently Asked Questions, Advanced Imaging Technology" (n.d):

Q. Is imaging technology optional?
A. Yes, imaging technology screening is optional for all passengers. Passengers who do not wish to receive imagining technology screening will receive alternative screening, including a physical pat-down.
This is reinforced by the decision of the Department of Homeland Security on its website where it is stated:

"Individuals undergoing primary screening will have the option to select a WBI screening. Individuals referred to secondary inspection are offered the option to undergo WBI screening as an alternative to the pat-down screening that would otherwise be required. Individual participation and consent is exercised by the individual's selection of the screening method and no individual is required to use WBI for screening. Consent is informed by the availability of brochures that explain the technology and show a sample image." (TSA, n.d.)

Therefore in both the United States and the European Union, the areas of highest density air traffic in the world, it has not been judged necessary to implement mandatory screening in order to achieve the required security results.

In his speech to the Parliament on 16 February 2012, Minister Albanese gave what appear to be conflicting statements regarding screening requirements. At one stage he indicated that there would be signs which would indicate an ability to decline screening and that anyone not declining would be deemed to have consented. Later on he indicated that anyone who was randomly selected for a screening procedure would be required to undergo the screening or face being banned from travel. (Albanese, 2012).

Recommendation: Additional Options

The Australian Government should adopt the principle that participation in body scanning by passengers and crew at Australian airports is voluntary and ensure that other methods of achieving desired security outcomes are available as an option.

Passenger and crew rights need to be clearly defined in any future legislation.

Additional Options

There are other means of enhancing aviation security without the need for devices which impact on health and privacy. These focus on profiling and biometric recognition.

"There is no fool proof method of keeping passengers safe from terrorists. Airline security is more art than science, and no tool can safely be discarded out of hand. That noted, nobody does it better than Israel, who pretty much wrote the book on airport security – and it doesn't subject its passengers to X-ray machines and aggressive pat-downs. But Israel – gasp! – profiles. Yes, they use a combination of behavioural and racial profiling to increase their efficiency so they can focus on the people who want to do harm on a plane…

In Israel, those who fit a recognized pattern of would-be terrorists get special attention. That makes total *sense… Israel's security agents are highly trained, experienced experts – so much so that they can be* trusted *to exercise common-sense-based discretion."* (Uliasz, 2010).

On 15 July 2011 the United States TSA Blog contained the following information:

"In the last several months you've heard us talking about applying more risk-based screening procedures to our security checkpoints, based upon the latest intelligence. Well, the time has come and in the Fall, we will begin a passenger screening pilot for a select group of travelers who volunteer more information about themselves. If we can confirm a person's identity and learn a little more about them through information they opt to provide, and then combine that information with our other layers of security, we can strengthen air travel security for all Americans while at the same time speeding up the screening process for those participating in the pilot." (TSA, 2011).

During the first phase of testing, certain frequent fliers and certain members of CBP's Trusted Traveler programs, including members of Global Entry, SENTRI, and NEXUS, who are U.S. citizens, will be eligible to participate in this pilot, which could qualify them for expedited screening.

Both the United States and Canada have introduced programmes whereby aircrew who have their personal and work details properly registered can access airports through biometric scanning. These programmes have the ability to check the authenticity of the person seeking access and allow or deny access based on stored data. This has the ability to reduce the strain on the passenger screening system and reduce the exposure rate of aircrew to possible health effects of the scanners themselves.

Recommendation: Known Traveller Scheme and Biometric

The Australian Government should investigate the introduction of a “Known Traveller” scheme for passengers which would enhance and expedite security clearance procedures at Australian airports and that biometric screening be introduced for aircrew and airport workers.

Summary

The Australian Airline Pilots' Association supports the introduction of all measures aimed at enhancing aviation security. The introduction of such measures should, however, be tempered by consideration of the possible adverse effects of introduction. Every effort must be made to protect the travelling public and aircrew from such adverse effects be they health, privacy or any other unintended consequences.

Introduction of new technology in itself is not the total answer to the problem. Aviation security requires a layered approach utilising all available means from hi-tech scanners and trace detection to biometric recognition technology and the old fashioned observation of indicative behavior and physical screening.

The Association believes that there is still sufficient doubt about the effectiveness of the proposed technology and the health impact of its use to urge adoption of the cautionary principle and recommends that introduction should be delayed until further investigation into the reliability of the equipment and its possible adverse health effects is carried out. AusALPA believes that the use of the proposed screening equipment is not supported by the "science" and the results to date, and that other techniques, in particular profiling and biometric recognition, should be introduced instead as these are far more effective and efficient, and eliminate the health issues.

AusALPA Recommendations

If it is determined that the body imaging technology is to be introduced without further investigation, then the Australian Airline Pilots' Association strongly recommends:

1. That the Australian Government adopt the principle that Whole Body Imaging is not the complete answer to anti-terrorist aviation security and adopt a layered approach which utilises a combination of all current methods and technologies and allows for introduction of future developments.

2. That the Australian Government decree that only non-ionising radiation scanners may be used to effect body scanning at Australian airports.

3. That the Australian Government follow the lead of its counterparts in the United States of America and Europe and direct that screening of passengers using any active body scanning technology be conducted on a totally voluntary basis.

4. That, due to possible adverse health effects of prolonged and repeated exposure to body screening devices, aircrew and airport workers be declared exempt from active body scanning screening procedures on production of valid forms of identity. Such forms of identity must include a valid and current ASIC in the first place and a photo drivers licence or similar in the second.

5. That the Australian Government adopt the privacy principles practiced by the major Western democracies and ensure their introduction into the Australian Aviation Security programme.

6. That the Australian Government develop and introduce a "Know Traveller Programme" similar to and along the guidelines of that being developed in the United States of America.

7. That biometric scanning procedures be developed and be introduced as standard screening practice for all Australian aircrew and airport workers.

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