

31 July 2009

**By Electronic Submission**

Mr Nicolas Dowie  
Planning Policy and Environment Section  
Airports Branch  
Department of Infrastructure, Transport, Regional Development and Local Government  
GPO Box 594  
**CANBERRA ACT 2601**

Email: [safeguarding@infrastructure.gov.au](mailto:safeguarding@infrastructure.gov.au)

Our Ref: T40-0029

Dear Mr Dowie,

**Re: Safeguards for Airports and the Communities Around Them**

The Australian and International Pilots Association (**AIPA**) refers to your email dated 24 June 2009 inviting comment on the Discussion Paper entitled 'Safeguards for airports and the communities around them'. Our submission follows the framework outlined in Table 1 on pp. 4-5 of the Discussion Paper.

AIPA is the professional Association representing pilots employed by Qantas Airways Limited and its wholly owned subsidiaries in domestic and international airline operations.

AIPA represents over 2,600 airline transport category flight crew and is the largest professional body of airline pilots in Australia. AIPA's membership comprises Training Captains, Captains, First Officers and Second Officers flying aircraft ranging from regional turbo-props to 569 tonne Airbus A380.

The Association encourages the Government to view flight crew as an essential part of a quality control process that ensures safety remains at the centre of aviation decision making - an independent role that AIPA believes to be increasingly important within liberalised aviation settings.

In assuming this role, AIPA takes an active stake in the Australian aviation industry through participating in a wide range of Government, legislative and regulatory inquiries and development processes. Internationally, AIPA members are recognised as being among the most experienced flight crew in the world and AIPA is an active member of the global pilot body, the International Federation of Air Line Pilots Associations (**IFALPA**). A number of AIPA pilots hold IFALPA senior executive positions.

Both the Australian civil aviation legislation and Chicago Convention 1944 standards clearly define the pilot in command's role as being responsible for the safe conduct of a flight. All other considerations, such as the efficient operation of the aircraft, are secondary to the pilot's primary mission of safety.

## Protection of Operational Airspace

AIPA believes the development of consistent industry standards, enabling authorities to regulate the encroachment of developments onto certified and registered aerodromes, will go a long way in reducing the current and future effect of urban sprawl and its detrimental effects on aviation operations. As population centres continue to expand, infrastructure has historically been slow to respond. No other example is more prevalent than that of the recent rapid development of the precincts of Canberra Airport. There is an emerging trend of developers encroaching land originally set aside as aeroplane landing areas. As most aerodromes in Australia were federally owned up until about a decade ago, the threat of development on airfields only emerged when developers could see the windfall that could be harvested from creating large retail outlets on tracts of land perceived to be ~~wasted~~ space. In fact, aerodromes are designed according to standards set out in International Civil Aviation Organisation (ICAO) Annex 14, ICAO Procedures for Air Navigation Services: Aircraft Operations (Doc 8168), *Civil Aviation Safety Regulations 1998* Part 139 Manual of Standards and the Australian Defence Force Publication 602, where relevant.

Recognition should be given to the fact that all Civil Aviation Safety Authority (CASA) licensed aerodromes are not used by Regular Public Transport (RPT) operators. Accordingly, whilst an aerodrome in a regional centre, which is often owned and operated by local government, may not be subject to the requirements of an aerodrome servicing RPT, future-proofing the aerodrome for RPT capacity should be factored into planning. Land around airports is a scarce and valuable resource and should be protected for future development.

The Government and airport planners should not become complacent about future airport requirements. Predicted increases in air travel will not merely be absorbed by larger aircraft and higher load factors. In the long term, traffic congestion, as is currently being experienced at Sydney Airport, will necessitate investment in new terminals, additional runways and ultimately new airports.

Application of standards that have been strengthened and enforced will go a long way in helping protect airports from development encroachment into protected airspace. Regulatory authorities must ensure that development proposals with the potential to encroach airport environments and neighbouring airspace are closely scrutinised and comply with the prescribed requirements for development within airport zones.

As part of the planning process, safety impact statements are of utmost importance in determining whether an adverse effect on RPT and non-RPT operations will be had at licensed aerodromes. Commercial imperative alone is not reason enough to propose intrusion into protected airspace by developers. This would need to be a major point for consideration in the planning and approval process. AIPA welcomes the move by the Department of Infrastructure, Transport, Regional Development and Local Government (DITRD LG) to more closely regulate urban encroachment onto these important and vital national assets and rigorously supports this imperative.

### Tall Structure Developments Around Airports

In relation to tall structure developments around airports, AIPA supports the option requiring developers to provide a safety impact statement for their proposed development. The safety impact statement must address any potential detrimental impact on aviation safety, efficiency and regularity of aviation operations.

In relation to certified or registered aerodromes, other than federally leased airports, the Association understands that some local governments, on occasions, have not consulted with the relevant airport operators, Airservices Australia, CASA nor DITRDLG, resulting in the construction of structures, which have had a detrimental effect on aviation safety.

AIPA recommends that developers, or the local government on their behalf, be required to consult with DITRDLG (who in turn may seek advice from airport operators, Airservices Australia and CASA) for the conduct of a risk assessment on the impact the proposed development will have on airport operations. This consultation requirement should parallel the current Airspace Protection Regulations imposed on federally leased airports.

It is acknowledged that developers may be ignorant of their obligations in relation to the impact of tall structure developments on aviation safety. As part of their development application to local government, local government must be responsible for informing developers of their obligations under Airspace Protection Regulations, Building Control Regulations and any other associated legislation and working with them to ensure a safety impact statement is provided to DITRDLG.

DITRDLG should make available all necessary support documents (legislation, ICAO Standards and Recommended Practices (**SARPs**) etc) to equip local government with the necessary information to conduct their duties in relation to developments around airports.

## **Turbulence and Windshear**

### **Mechanical Turbulence**

For some time AIPA has raised questions about the reliability and validity of wind reports for landing and take-off. The actual wind encountered during the final approach and landing is known to significantly differ from the reported wind values at times. Wind varies in strength and direction because of the gustiness and instability of the air and the wind report merely contains a statistical picture of the current wind situation.

Building induced wind disturbances, referred here as mechanical turbulence, can increase the natural gustiness and instability of the air and can therefore increase the variation of wind. To limit widespread proliferation of building developments near runways (both on and off airport site), measures must be taken to assess acceptable wind disturbance by obstacles.<sup>1</sup>

Mechanical turbulence has been reported on Canberra Airport's short final approach for Runway 35, believed to be caused by buildings close to the runway threshold. What appears to have been rampant and minimally regulated development at Canberra Airport throughout 2006 has resulted in a threat to flight safety. This threat is associated with the positioning of a large hangar immediately adjacent to the airport's runways, on the Brindabella Park side. The structure sits directly in line with the prevailing wind, thus creating downstream turbulence across the take-off and landing zone of the airport's main runway.

Following pilot initiated Air Safety Incident Reports (**ASIRs**) describing problems with turbulence on landing, Airservices Australia took measures to warn pilots of the hazard in their operational publications. The En-Route Supplement Australia warns

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<sup>1</sup> Australian Transport Safety Bureau (2003). *Aviation Safety Investigation Report – Final, Boeing Co 737-476, VH-TJG*. Retrieved June 23, 2008, from [http://www.atsb.gov.au/publications/investigation\\_reports/2002/AAIR/air200205179.aspx](http://www.atsb.gov.au/publications/investigation_reports/2002/AAIR/air200205179.aspx)

pilots to expect severe turbulence on landing when the prevailing wind is strong. The increasing number of multi-storey office blocks now springing up in the same area of the airport on the upwind side of the main runway can only make the problem worse.

While airport operators may defend the size and positioning of their office blocks and hangars, the severe turbulence across the touch down area of the airport's main runway was not an issue prior to these structures being built. Canberra Airport is a prime example of relaxed approval processes leading to inappropriate development close to the main runway.

Sydney Airport is another example where pilots have been reporting for years the mechanical turbulence experienced on short final approach for Runway 16R when a south-westerly wind blows over the freight containers.

Qantas Airways Route Manual Supplement (an operational document) states:

Severe turbulence is possible on short final to Rwy 16R when the wind is between 200° and 220° and greater than 30kt due to rotor turbulence caused by the international and freight terminals.

This warning should be included in Airservices Australia's En-Route Supplement Australia and on the Automated Traffic Information Service to benefit all pilots.

In the past, responsibility for these issues has been passed from the (then known) Department of Transport and Regional Services to CASA and airport operators, airport operators to CASA and CASA back to airport operators, ultimately resulting in **no single point of responsibility**.

DITRDLG has jurisdiction over the *Airports (Protection of Airspace) Regulations* and AIPA is supportive of the measures being proposed in this Discussion Paper for developing adequate and consistent industry standards for mechanical turbulence and windshear for airports, developers and local government to identify, assess and mitigate the impact of turbulence and windshear potentially arising from new developments in close proximity to runways.

In the past and currently, airport operators have felt and continue to feel powerless in the face of a lack of concrete standards from Government, and even ICAO, in relation to this issue. Sydney Airport has previously stated during discussions with AIPA that it is prepared to fund a wind study if it can be assured that CASA will accept the results and not reject them due to the lack of standards.

Following a reported mechanical turbulence incident at Canberra Airport involving a Boeing 737, the Australian Transport Safety Bureau (**ATSB**) investigation report stated:

There are presently no building codes or standards in Australia that address the phenomena of building-induced turbulence with respect to proposed buildings to be located on or adjacent to aerodromes.<sup>2</sup>

An aviation industry working group involving DITRDLG, CASA, Airservices Australia, airport operators and pilot representatives should be established to further investigate the issue of mechanical turbulence and windshear and develop standards

<sup>2</sup> Australian Transport Safety Bureau (2003). *Aviation Safety Investigation Report – Final, Boeing Co 737-476, VH-TJG*. Retrieved June 23, 2008, from [http://www.atsb.gov.au/publications/investigation\\_reports/2002/AAIR/air200205179.aspx](http://www.atsb.gov.au/publications/investigation_reports/2002/AAIR/air200205179.aspx)

appropriate for Australia. The question of whether such standards should be prescriptive or allow for case by case assessment should be determined by the industry working group proposed and AIPA expects a combination of both as is currently the case with the trend towards safety outcome based legislation.

The Government should consider the following IFALPA policy, endorsed by AIPA, in its development of standards:

The effects of wind disturbance caused by buildings, other man-made structures [such as the shipping containers near Sydney Airport] and natural obstacles and objects on aircraft behaviour during the initial departure path, final approach path and the take off and the landing roll shall be assessed. This assessment must take place during the planning and design phase and shall be based on a scientific study. The study shall quantify the effects of the three aspects of wind disturbance: wake, vortices and turbulence.

The effects of the wind disturbance should be assessed against the controllability and performance of the aircraft according to its category. The results of the assessments should be compared with a known risk matrix such as JAR 25.1309, change 14, page 3-F-14 to determine the effects on aircraft operations.

In addition, similar assessments shall be carried out for existing buildings, structures and objects near existing runways [for years, pilots have reported mechanical turbulence from the shipping containers near Sydney Airport] ...

ō The construction of man made objects, structures or obstacles in the vicinity of the initial departure path, the final approach path and the take off and the landing roll, shall not be allowed, unless it is proven (by scientific methods) that the effect of the construction will not cause unacceptable levels of wake, turbulence or vortices to aircraft operations due to disturbance of the wind.

In addition, a safety assessment study must be carried out on the effects on flight operations, such as, but not limited to visual interference, of these man-made objects, structures or obstacles.

Note: Scientific methods include, but are not restricted to Computational Fluid Dynamics or advanced wind tunnel modelling.

The construction, extension or expansion of runways in the vicinity of man made structures or natural obstacles shall not be commenced unless it is proven (by scientific methods) that aircraft operations during initial departure, on the final approach path and the take off and the landing roll will not adversely be affected by wake, turbulence or vortices due to the disturbance of the wind by the aforementioned structures and obstacles.

For existing runways, the effects of wind disturbance, namely wake, turbulence and vortices of existing structures and obstacle within the vicinity of runways shall be assessed (by scientific methods). This assessment shall be used to determine acceptable levels of wind disturbance and shall be used in the selection of runways for day to day aircraft operation.

Buildings and facilities actively causing atmospheric disturbances or producing emissions which affect the flight path of the aircraft should also

be taken into consideration in the construction, extension or expansion of a runway.<sup>3</sup>

Expert modelling reports on turbulence and windshear should be mandatory for developments in close proximity to runways and the cost should be shared between the airport operator and the developer in the Association's view. The airport operator will use the expert modelling report to greater their understanding of what impact the proposal will have on safe operations at their airport. The developer, being the proponent, must also carry some financial burden in obtaining the report in support of their safety impact statement to DITRDLG.

## **LIDAR**

Australia's airline pilots recommend the Australian Government investigate and share the cost of installing new air traffic related safety technology such as Light Detection And Ranging Doppler (**LIDAR**) at code 3 and 4 airports nationally.

Windshear related accidents have resulted in more than 1,400 fatalities worldwide since 1943. The Hong Kong Observatory reported that LIDAR has achieved nearly 70 percent probability of detecting windshear and this success has now led to the acquisition of a second LIDAR system for improved coverage and redundancy<sup>4</sup>. Investment in technology such as LIDAR is likely to significantly aid the prevention of events such as the microburst incident involving a Qantas Boeing 747-438 at Sydney Airport on 15 April 2007. The incident is still under investigation by the ATSB. The preliminary aviation safety investigation report can be viewed via:

[http://www.atsb.gov.au/publications/investigation\\_reports/2007/AAIR/aair200702272.aspx](http://www.atsb.gov.au/publications/investigation_reports/2007/AAIR/aair200702272.aspx)

Cost-benefit studies should be conducted by the Government to assess windshear at airports and the safety benefits derived from LIDAR technology.

## **Wildlife Hazards**

AIPA encourages the Government to develop national standards and regulation for the effective management of risks posed by bird/animal strikes in relation to land use planning within 15km of airports and supports the establishment of formalised planning standards, such as those presented below, to complement aviation activity.

With the exception of the Commonwealth requirement to report birdstrikes to the ATSB, AIPA is unaware of the existence of aviation legislation to control birds and other wildlife within airport operating environments. Airport operators are responsible for safe operation of the airport and in respect to wildlife hazards, should establish bird control programmes as a tool to reduce threats and enhance aviation safety. However, it appears not all bird control programmes adequately mitigate risks. The Association understands that state environment departments/national parks and wildlife services have been known to place limits on wildlife population control at airports. If this is the case, responsibility for aviation safety must not be solely borne by airport operators but should be shared with those state departments responsible for imposing limits.

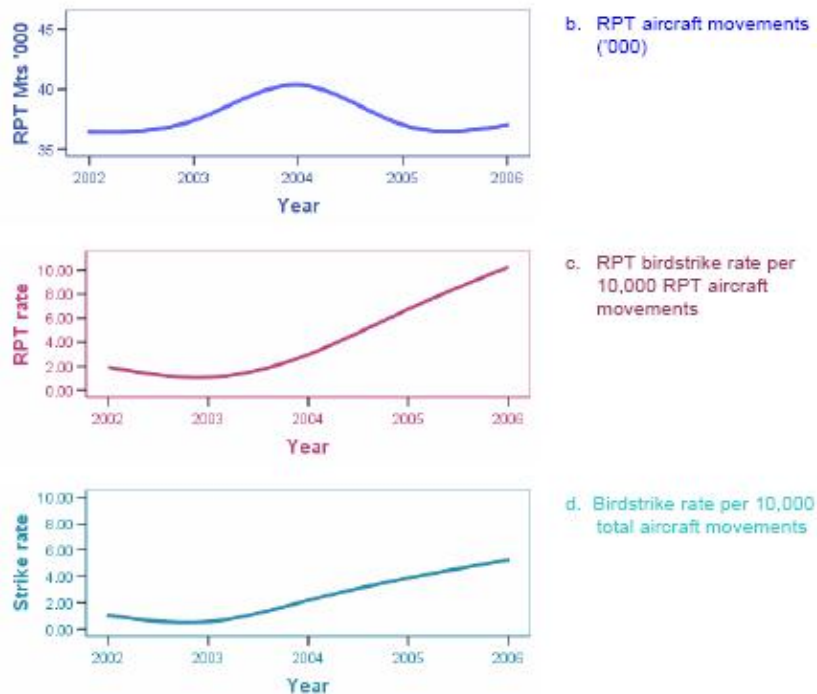
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<sup>3</sup> International Federation of Air Line Pilots Associations (2007,10-12) *IFALPA Technical Manual Annex 14 Volume 1 (Aerodromes)*. Surrey, UK.

<sup>4</sup> Keohan, C. (2007). Ground-based wind shear detection systems have become vital to safe operations. *ICAO Journal*, 2007 (2), 16-19.

The ATSB states that reports sent by flight crew decreased from 40 per cent (364 of 907) to 14 per cent (258 of 1839) over the reporting period [2002-2006] and acknowledges that the decline in flight crew reports may be the result of flight crews no longer submitting reports to the ATSB directly, but rather via their company reporting system<sup>5</sup>. AIPA has observed underreporting of incidents for other occurrence types and understands that unless specifically requested by the reporter, or the incident is considered by the operator to be an immediately reportable matter, ASIRs are not necessarily sent to the ATSB. In both cases reporting to the competent authority is voluntary, or at the least, predicated on individual interpretation of the necessity to report. More likely, such reports will be processed by the airline's safety department. While Australia has a mature aviation safety culture, this is a potential conflict of interest. AIPA believes that all ASIRs should be sent to the ATSB for processing. This would increase transparency of the reporting process and ensure all reports are provided to the ATSB for review and investigation.

AIPA believes planning approval authorities need to take into account the potential for developments to attract bird life within the vicinity of airports. For example, birdstrikes at Canberra Airport have continued at twice the pre-business park development rate. In the four years from 2000 to 2003 the average birdstrike rate was 16 per year. In the five years since development, 2004 to 2008, the average rate was 33 per year. The ATSB states that birdstrike rates have risen in a linear trend for RPT strikes and total movements, despite the fall in movements<sup>6</sup>. This is illustrated below.



The following International Bird Strike Committee standards for aerodrome bird/wildlife control are worlds-best practice and should apply to all aerodromes

<sup>5</sup> Australian Transport Safety Bureau (2008). *An analysis of Australian bird strike occurrences 2002 to 2006*. Canberra

<sup>6</sup> Australian Transport Safety Bureau (2008). *An analysis of Australian bird strike occurrences 2002 to 2006*. Canberra

carrying RPT traffic, irrespective of the movement frequency or aircraft type. These standards are endorsed by AIPA:

***“Standard 1***

A named member of the senior management team at the airport should be responsible for the implementation of the bird control programme, including both habitat management and active bird control.

***Standard 2***

An airport should undertake a review of the features on its property that attract hazardous birds/wildlife. The precise nature of the resource that they are attracted to should be identified and a management plan developed to eliminate or reduce the quantity of that resource, or to deny birds access to it as far as is practicable.

Where necessary, support from a professional bird/wildlife strike prevention specialist should be sought.

Documentary evidence of this process, its implementation and outcomes should be kept.

***Standard 3***

A properly trained and equipped bird/wildlife controller should be present on the airfield for at least 15 minutes prior to any aircraft departure or arrival. Thus, if aircraft are landing or taking off at intervals of less than 15 minutes there should be a continuous presence on the airfield throughout daylight hours. The controller should not be required to undertake any duties other than bird control during this time. Note that for aerodromes with infrequent aircraft movements, 15 minutes may not be long enough to disperse all hazardous birds/wildlife from the vicinity of the runway. In this case the controller should be deployed sufficiently in advance of the aircraft movement to allow full dispersal to be achieved.

At night, active runways and taxiways should be checked for the presence of birds/wildlife at regular intervals and the dispersal action taken as needed.

***Standard 4***

Bird control staff should be equipped with bird deterrent devices appropriate to the bird species encountered, the numbers of birds present, and to the area that they need to control. Staff should have access to appropriate devices for removal of birds/wildlife, such as firearms or traps, or the means of calling on expert support to supply these techniques at short notice. All staff should receive proper training in the use of bird control devices.

***Standard 5***

Airport bird/wildlife controllers should record the following at least every 30 minutes (if air traffic is sufficiently infrequent that bird patrols are more than 30 minutes apart, an entry should be made for each patrol carried out).

- “ areas of the airport patrolled,
- “ numbers, location and species of birds/wildlife seen,
- “ action taken to disperse the birds/wildlife,
- “ results of the action.

More general information such as the name of the bird controller on duty, time on and off duty, weather conditions etc should be recorded at the start of a duty period.

### **Standard 6**

Bird/wildlife incidents should therefore be defined in 3 categories:

#### **Confirmed strikes:**

~ Any reported collision between a bird or other wildlife and an aircraft for which evidence in the form of a carcass, remains or damage to the aircraft is found.

~ Any bird/wildlife found dead on an airfield where there is no other obvious cause of death (e.g. struck by a car, flew into a window etc.).

#### **Unconfirmed strikes:**

~ Any reported collision between a bird or other wildlife and an aircraft for which no physical evidence is found.

#### **Serious incidents:**

~ Incidents where the presence of birds/wildlife on or around the airfield has any effect on a flight whether or not evidence of a strike can be found.

### **Standard 7**

Airports should establish a mechanism to ensure that they are informed of all bird/wildlife strikes reported on or near their property.

The total number of birdstrikes should never be used as a measure of risk or of the performance of the bird control measures at an airport.

Airports should ensure that the identification of the species involved in birdstrikes is as complete as possible.

Airports should record all birdstrikes and include, as far as they are able, the data required for the standard ICAO reporting form. National Regulators should collate birdstrike data and submit this to ICAO annually.

### **Standard 8**

Airports should conduct a formal risk assessment of their birdstrike situation and use the results to help target their bird management measures and to monitor their effectiveness. Risk assessments should be updated at regular intervals, preferably annually.

### **Standard 9**

Airports should conduct an inventory of bird attracting sites within the ICAO defined 13km bird circle, paying particular attention to sites close to the airfield and the approach and departure corridors. A basic risk assessment should be carried out to determine whether the movement patterns of birds/wildlife attracted to these sites means that they cause, or may cause, a risk to air traffic. If this is the case, options for bird management at the site(s) concerned should be developed and a more detailed risk assessment performed to determine if it is possible and/or cost effective to implement management processes at the site(s) concerned. This process should be repeated annually to identify new sites or changes in the risk levels produced by existing sites.

Where national laws permit, airports, or airport authorities, should seek to have an input into planning decisions and land use practices within the 13km bird circle for any development that may attract significant numbers of hazardous birds/wildlife. Such developments should be subjected to a

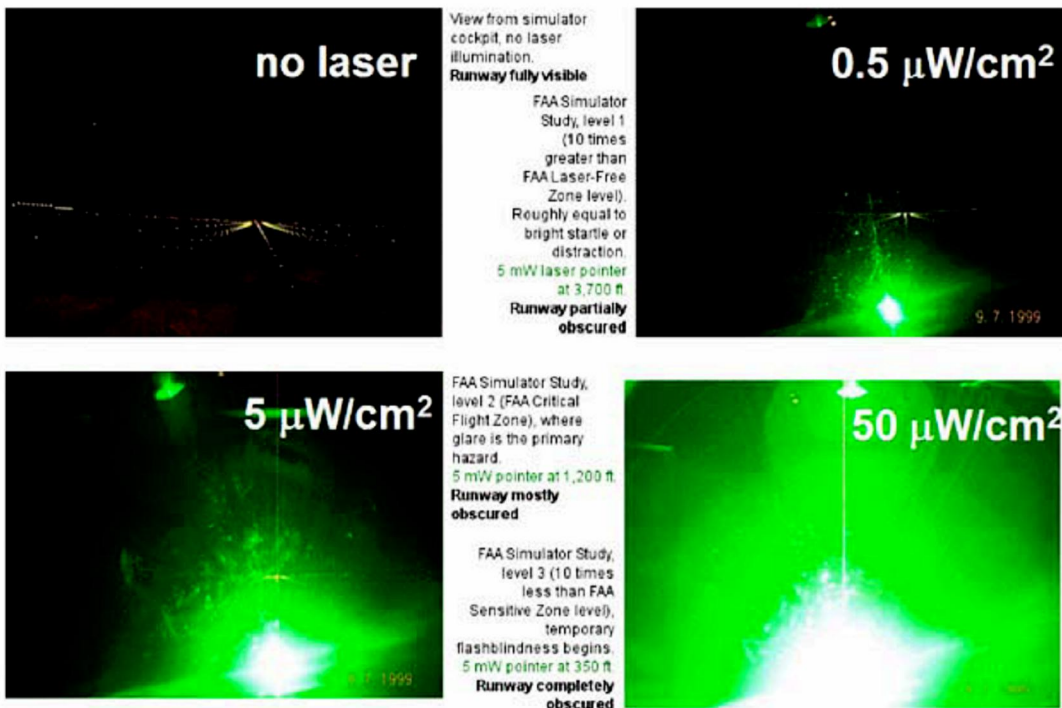
similar risk assessment process as described above and changes sought, or the proposal opposed, if a significant increase in birdstrike risk is likely to result.<sup>7</sup>

## Lighting and Pilot Distractions

Laser illumination of aircraft has increased in frequency over the last few years and in most instances can be attributed to deliberate action. Such action may be because the perpetrator has a lack of understanding of the consequences, or of more concern, the perpetrator understands the hazards of lasers and illuminates aircraft with the intent of doing harm. The problem has become more pronounced with the ease of which powerful lasers are available, often purchased via the Internet. For example, in March 2008, at least four aircraft were targeted with green lasers from up to four different locations during an approach to land at Sydney Airport. Air Traffic Control had to change the runway in use and this resulted in delays. The photos below illustrate the risk to aviation safety when pilots, at best, are distracted or, at worst, are blinded, by laser illumination aimed at aircraft during approach to land.<sup>8</sup>

### Example view from aircraft cockpit (in FAA flight simulator) during laser illumination flash

The simulator is showing the aircraft on the ground, at the take off position. The laser is steady for the photo, however, in the actual FAA simulator tests, pilots were exposed to a single flash lasting one second. So you can imagine pilots see this for one second. (The laser flashes because in real-life a hand-held laser could not be held steady on the target. The light would flash instead of remaining steady.)



All photos taken with the same setting: Kodak DC240 digital camera, aperture f/2.8, shutter speed 1/6 second.

In AIPAC's submission to the Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the *Aviation Legislation Amendment (2007 Measures No. 1) Bill 2007*, the Association raised concerns about the use of laser devices directed toward

<sup>7</sup> IFALPA AGE Briefing Leaflet . IBSC anti-birdstrike recommendations (09AGEBL02), June 2008

<sup>8</sup> IFALPA Medical Briefing Leaflet . The Effects of Laser Illumination of Aircraft (09MEDBL07), February 2009

aircraft by persons remote from the airport and brought the issue to the attention of the Government and safety regulator. As the issue occurs during the take-off or landing stages of flight, the safety implications of such acts are significant. AIPA supported the Bills proposed extension of safety and security legislation concerning interference with a crew member and specifically in the case of laser devices.

It is AIPA's view that current state and federal legislation strategically aim to deter laser illumination of aircraft and are appropriate.

To date there have been only a few successful prosecutions of individuals using lasers against aircraft. Whilst many of these attacks can be considered to be of the nuisance variety and are often perpetrated by youth who do not necessarily have a hostile intent, the potential danger of these attacks on aircraft cannot be dismissed or underestimated.

In AIPA's preparation to submit its comments to this Discussion Paper, the Association would have liked to have accessed statistics on safety occurrences resulting from laser illumination of aircraft for the ten years prior to the implementation of laser deterrence legislation in 2007 to date. As this was not possible in the limited timeframe to comment, AIPA requests the Government provide such information in its regular ATSB reporting of Aviation Occurrence Statistics and conduct an analysis on the adequacy of existing laws to restrict the use of lasers in the vicinity of airports.

### **Public Safety Zones (PSZ) and Third Party Risk**

AIPA acknowledges the issue of Public Safety Zones is likely to generate much contention to those already established land owners, residents and occupants who currently live or work in these areas. However, aviation safety is of paramount importance to society and the travelling public specifically and the Australian Government must ensure it is compliant with world's best practice aviation safety standards.

According to the international Flight Safety Foundation, runway excursions are the most common type of runway safety accident (96 per cent) and the most common type of fatal runway safety accident (80 per cent). Runway excursions constituted 29 per cent of total accidents between 1995 and 2007 and were the world's fourth largest cause of airline fatalities between 1997 and 2006.

Recent runway overrun accidents have occurred in:

- ① Tegucigalpa, Honduras, May 2008;
- ① Brussels, Belgium, May 2008;
- ① Sao Paulo, Brazil, July 2007;
- ① Butuan, Philippines, October 2007;
- ① Yogyakarta, Indonesia, March 2007;
- ① Irkutsk, Russia, July, 2006;
- ① Stord, Norway, 2006;
- ① Medellin, Columbia, 2006;
- ① Toronto, Canada, 2005; and
- ① Chicago, US, 2005.

Closer to home, an Airbus A340-500 departing from Melbourne Airport in March 2009 came very close to crashing on take-off. The preliminary accident investigation report has documented multiple contact marks within the overrun area<sup>9</sup>.

PSZs restrict development at the ends of runways in order to minimise risk of death and injury in the event of an aircraft accident. The ATSB states:

Airport operators and regulators can complement preventative controls by investing in recovery risk controls to minimise the injury and damage consequences for any aircraft that does overrun or veer off a runway. Recovery risk controls include runway end safety areas (RESAs), soft ground arrestor beds, and defined public safety zones around runways.<sup>10</sup>

The ATSB highlight that airport operators and regulators can be doing more to prevent the consequences associated with runway excursions through investing in recovery risk controls including PSZs, which AIPA supports. The Bureau also lists Runways End Safety Areas (**RESA**) and ground arrestor beds as further recovery risk controls that may be pursued.

Over the last few years, AIPA has been consistently advising airport operators and the Government to install Engineered Materials Arresting System (**EMAS**) as an alternative means of complying with the 240 metre international best practice for RESA, which could help prevent the world's fourth-largest cause of airline fatalities.

Sydney Airport is just one example of the many airport operators around the country who have not taken steps to upgrade their 90 metre RESA to the 240 metre RESA, or EMAS as an alternative, recommended by ICAO and CASA. CASA's recommendation states:

Additional length of RESA *should* be provided especially at international aerodromes, in accordance with the following ICAO recommendations:  
1. if the runway code number is 3 or 4 · 240 m; or  
2. if the runway code number is 1 or 2 · 120 m.  
Note: Where it is not practicable to provide the full length of RESA, the *provision may include an engineering solution to achieve the objective of RESA*, which is to enhance aeroplane deceleration. In the latter case, aerodrome operators will need to liaise with the relevant CASA office.<sup>11</sup>  
(italics added)

It is interesting to note that the United States Federal Aviation Administration (**FAA**) requires all commercial airports to have a 305 metre RESA, or EMAS as an alternative, which is well above the minimum ICAO SARPs.

Sydney Airport and other international airports around the country may be more likely to install EMAS and other critical safety infrastructure if the Government offered a cooperative funding arrangement.

<sup>9</sup> Australian Transport Safety Bureau (2009). *Aviation Occurrence Investigation – AO-2009-012 – Preliminary, Tail Strike Melbourne Airport, Vic. 20 March 2009 A6-ERG Airbus A340-500*. Retrieved July 29, 2009, from [http://www.atsb.gov.au/publications/investigation\\_reports/2009/AAIR/pdf/AQ2009012\\_Prelim.pdf](http://www.atsb.gov.au/publications/investigation_reports/2009/AAIR/pdf/AQ2009012_Prelim.pdf)

<sup>10</sup> Australian Transport Safety Bureau (2009). *Runway excursions: Part 2 – Minimising the likelihood and consequences of runway excursions, An Australian perspective*. Canberra, AUS: Author.

<sup>11</sup> Civil Aviation Safety Authority (2008, Apr). *Manual of Standards Part 139-Aerodromes, version 1.4*. Canberra, AUS: Author.

AIPA calls on the Australian Government to conduct cost-benefit studies for the installation of 240 metre RESA, or EMAS as an alternative, at all code 3 and 4 airports nation wide.

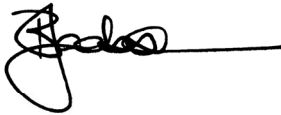
The FAA provides federal funding to support upgrades to Runway Safety Areas. EMAS is currently installed at 41 runway ends and 28 airports in the US, with plans to install an additional 18+ EMAS systems at 12 airports as indicated by the attached tables.<sup>12</sup>

The size required for a PSZ for larger airports and runway overrun risk to third parties will be considerably less for those airports that comply with the international recommended 240 metre RESA or EMAS practice.

AIPA supports the introduction of measures to identify PSZ to ensure new developments around the ends of runways do not lead to undue levels of risk. It is the Association's view that all airports, not just those servicing RPT, should have PSZ identified.

Thank you for the opportunity to comment on this important safety initiative. Should you require clarification on any of the points raised in this submission, please do not hesitate to contact our office on the telephone number or email address below. AIPA looks forward to participating in further industry consultation with DITRDLG should the opportunity arise.

Yours sincerely,



**Captain Barry Jackson**  
**President**

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<sup>12</sup> [http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=6279&print=go](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=6279&print=go)

**ATTACHMENT**

<b>Airport</b>	<b>Location</b>	<b>No. of Systems</b>	<b>Installation Date</b>
JFK International	Jamaica, NY	2	1996/2007
Minneapolis St. Paul	Minneapolis, MN	1	1999
Little Rock	Little Rock, AR	2	2000/2003
Rochester International	Rochester, NY	1	2001
Burbank	Burbank, CA	1	2002*
Baton Rouge Metropolitan	Baton Rouge, LA	1	2002
Greater Binghamton	Binghamton, NY	2	2002
Greenville Downtown	Greenville, SC	1	2003**
Barnstable Municipal	Hyannis, MA	1	2003
Roanoke Regional	Roanoke, VA	1	2004
Fort Lauderdale International	Fort Lauderdale, FL	2	2004
Dutchess County	Poughkeepsie, NY	1	2004
LaGuardia	Flushing, NY	2	2005
Boston Logan	Boston, MA	2	2005/2006
Laredo International	Laredo, TX	1	2006
San Diego International	San Diego, CA	1	2006
Teterboro	Teterboro , NJ	1	2006
Chicago Midway	Chicago, IL	4	2006/2007
Merle K. (Mudhole) Smith	Cordova, AK	1	2007
Charleston Yeager	Charleston , WV	1	2007
Manchester	Manchester, NH	1	2007
Wilkes-Barre/Scranton Intl.	Wilkes-Barre, PA	2	2008
San Luis Obispo	San Luis Obispo, CA	2	2008
Chicago-O'Hare	Chicago, IL	2	2008
Newark Liberty International	Newark, NJ	1	2008
Charlotte Douglas Intl	Charlotte, NC	1	2008
St. Paul Downtown	St. Paul, MN	2	2008
Worcester Regional	Worcester, MA	1	2008

\*Widened in 2008

\*\* General aviation airport

### Additional Projects Currently Under Contract

<b>Location</b>	<b>No. of Systems</b>	<b>Expected Installation Date</b>
Worcester, MA	1	2009
Arcata, CA	1	2009
Winston-Salem, NC	1	2009
Wilmington, DE	1	2009
Reading, PA	1	2009
Key West, FL	1	2009
Kansas City, MO	2	2010
Farmingdale, NY	1	2010
Lafayette , LA	2	2010
Groton-New London, CT	2	2011
Augusta, ME	2	2011
Telluride, CO	2	2012 <sup>13</sup>

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<sup>13</sup> [http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=6279](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=6279)