

21 July 2017

Noel McCann
Director, Planning & Government Relations
2 Brindabella Circuit
Brindabella Business Park
CANBERRA AIRPORT ACT 2609

Email: n.mccann@canberraairport.com.au

Our Ref: T40-00-86

Dear Noel,

**AUSALPA COMMENTS ON CANBERRA AIRPORT PTY LTD PROPOSED
SAFETY CASE TO MODERATE THE INCREASED RISK TO OPERATIONS
FROM THE CONSTRUCTION OF 9 MOLONGLO DRIVE**

The Australian Airline Pilots' Association (AusALPA) represents more than 5,000 professional pilots within Australia on safety and technical matters. We are the Member Association for Australia and a key member of the International Federation of Airline Pilot Associations (IFALPA) which represents over 100,000 pilots in 100 countries. Our membership places a very strong expectation of rational, risk and evidence-based safety behaviour on our government agencies and processes and we regard our participation in the work of Australia's safety-related agencies as essential to ensuring that our policy makers get the best of independent safety and technical advice.

Consultation

Our involvement in the development process for 9 Molonglo Drive has identified a number of concerns for us about the effectiveness of the current arrangements for consultation with relevant stakeholders. It has also highlighted a number of concerns about the safety management of airport developments in general, which we will continue to pursue with the Minister and his portfolio agencies.

Documentation

As late as two days ago, we received a number of communications related to our various concerns. Regardless of whether those documents were in the hands of the Department of Infrastructure and Regional Development (DIRD), the Civil Aviation Safety Authority (CASA) or Canberra Airport Pty Ltd (CAPL), none were voluntarily provided to us without us first discovering their existence and subsequently requesting their release. While we recognise that CAPL is but one of the three parties involved and we appreciate the quick and positive response to our requests, AusALPA nonetheless

must point out that such a process does not satisfy our expectations for safety-based stakeholder consultation.

The value to us of our recent exposure to the CASA and CAPL documents is in clarifying those agencies and processes where we need to pursue our remaining concerns about the safety-related consequences of airport developments in close proximity to runways. At the same time, it has also clarified the previously unknown extent to which CAPL has gone to redress our immediate concerns with the wind assessment of 9 Molonglo Drive.

Three Steps to Better Advice

In our initial advice to the then-Deputy Prime Minister we said:

AusALPA believes that the proposed development can only proceed as long as there is a three step process commenced immediately. The first step requires the completion of a much more in-depth technical evaluation which goes significantly beyond Guideline "B". The second step is a peer technical review to ensure best practice in applying the available science. The final step is the provision to you of appropriate operational risk management advice by a technically competent and operationally experienced group. These three steps are paramount, because it is inconceivable to mitigate risks that have not properly been identified nor reasonably shown to have acceptable consequences. AusALPA is ready to assist with Step 3.

We acknowledge that the involved parties have essentially conducted the three step process we recommended, although we still have some reservations about the steps preceding the Safety Case. Unfortunately, AusALPA does not have the resources or technical expertise to properly examine some of the technical underpinnings of the most recent Windtech information or the SLR peer review, particularly given the time available.

While we acknowledge the extra efforts of CAPL and Windtech to go beyond Guideline "B" and of CASA to implement the Peer Review, we remain concerned about the outcomes.

Residual Concerns

The SLR Peer Review expressed a number of what we read as adverse comments, but stopped short of recommending another wind tunnel assessment. We were particularly surprised that neither SLR nor CASA seem to see a problem with deciding that the building wake is essentially benign despite being sampled along a single line at mid-height of the required zone. CASA obviously discussed that outcome in detail with SLR before advising DIRD that the first two steps were complete.

Unfortunately, we also consider it more than just a missed opportunity that the Windtech selection of model scale excluded the Qantas hangar, since AusALPA considers that structure to be perhaps the most significant contributor to the adverse landing environment in strong winds. Any comparison of results that purport to represent the current environment in terms of either windshear or turbulence is not valid with the Qantas Hangar excluded.

We consider that our concerns about the appropriate wind data to be used remain unaddressed. However, if the our preferred threshold wind approach is adopted as per Appendix G to the Safety Case, then any further debate is limited to the probability of occurrence rather than the validity of the whole assessment.

Perhaps the most immediate of our concerns relates to Dr Truong's assertion in Item 7 of Appendix F to the Safety Case (provided on 19 July) in relation to one of the key

conclusions from the seminal NLR research. Despite NLR concluding that the OLS does not provide adequate protection from building-generated wakes and turbulence, Dr Truong asserts:

...This means that it was not the intention of the document to be used to assess the strength of the wakes caused by the specific building geometries tested.

NLR have used a wind climate model of wakes behind obstacles that produces unusually strong wakes such that conservative criteria can be developed. This is a prudent approach. However, it means that **it is misleading to make a direct comparison between real buildings and the simulated obstacles in the NLR Report.** [emphasis added]

While this is not an issue for CAPL, it certainly appears to be a challenge to some of the underpinnings of NASF Guideline “B” that requires both clarification and further research.

The Safety Case

General

The Safety Case needs a very clear disclaimer to avoid misapprehension and misapplication by readers less well-informed about the whole Canberra airport context.

It would otherwise be very easy to think that it is a general safety case for operations to Runway 35, rather than a very limited safety case applicable only to the wake and turbulence contribution of 9 Molonglo Drive at the test points shown in Figure 6. It should be made very clear that the related wind assessment does not include wake or turbulence assessments of the Qantas hangar which infringes the OLS abeam the touchdown zone or any other existing building not included in Figure 6.

More adverse wake and turbulence effects may already exist, unrelated to those identified in this Safety Case for 9 Molonglo Drive.

Section 1

The reference to, and inclusion of, Appendix A is misleading and irrelevant. The study to which it refers did not consider the NLR turbulence parameter and was superseded by the later work that has given rise to this Safety Case. The quoted CASA advice is based on an incomplete assessment and is therefore moot.

Section 1.2

The runway description may be enhanced by including the PCN of the runways to reinforce the operational limitation of RW 12/30 to Dash 8 or smaller aircraft without a pavement concession.

Section 1.3

Given the reference to “an office building” at 9 Molonglo Drive being approved in 2007, two things should be made very clear: whether the final design was the same as the current design; and the extent to which the final design was tested by MEL Consultants. If it was not the same design and was not wind tunnel tested to the same standards, then this section is potentially misleading.

Section 2.2

As a reference document, critical distances must be accurate. Rather than “The development site is 400 metres west of the Main Runway”, it would be more useful to

quote the actual distance from the runway centreline of the nearest and furthest points of the building based on the surveyed site plans.

Section 3.1

While AusALPA is unable to quantify the differences, we do note that the advice in Appendix H is based on the old data for BoM site 070014. Access to data from the new site (070351) is currently not available, but we are aware of a report for the ACT Commissioner for Sustainability and the Environment¹ that suggests a recent trend to increasing frequency and strength of westerly and north-westerly winds.

We note that the report appears to be based on the publicly available wind rose information of two observations per day, which we continue to maintain is an inappropriate metric in an era of continuous wind data capture.

Section 4

This introductory text confuses cause with effect. The existing controls are based on crosswind guidance because the existing developments create windshear in addition to any inherent natural turbulence that may exist. The issue with the existing controls is simply that they are empirical – to the best of our knowledge no attempt has ever been made to properly assess the vortices, wakes and turbulence due to development at Canberra Airport.

Section 4.2

In Figure 12, the use of “12kt crosswind warning issued” is inaccurate to the extent that the warning is a “turbulence warning” that is issued at various wind speeds. The caption may be more informative if rewritten to say “turbulence warning issued by ATC”, since it is only issued when the tower is active. Similar considerations apply to Table 6.

Section 4.3

Care should be taken in using the descriptor “significant” for winds of 20kts in this context, since in the previous section it is used in relation to winds of 12kts or more.

Section 5

Did MEL Consultants provide advice in 2006 on the wind speed required to exceed the 4 knot turbulence criterion posed by the December 2016 draft revision to Guideline B? AusALPA is curious as to the value added by multiple references to a study that is not included in the Safety Case materials, which is unlikely to have been conducted to a metric that did not exist at the time and for which we have no knowledge of the comparability of assessment methods.

We also suggest that there is a latent risk in Recommendation 1, given that a reduction to 19kts may still be too high a trigger for the existing wake effects of the Qantas hangar. This reiterates the difficulty for this particular Safety Case being based on such a limited analysis of the operating environment for RW35 at Canberra.

Importantly, while airlines have a responsibility to provide appropriate operational advice to their pilots in regard to destination and alternate airports, most of that advice relies on information provided in ERSA and similar products. The general notice

¹ Davis, C. and Lindesay, J. 2011. *Weather and Climate of the ACT 2007-11 and Decadal Trends*. Report for the Office of the Commissioner for Sustainability and the Environment. Canberra

currently in ERSA relies on individual interpretations of the adjective “strong”. Few airline pilots would consider 12kts crosswind to be “strong”, yet that speed is sufficient for ATC to issue the turbulence warning. AusALPA suggests that Recommendation 2 needs to be reconsidered in order to provide greater correlation between the ERSA advice and the ATC operational warnings.

Consideration of Temporary Effects

In examining the various materials associated with this Safety Case, Figure 17 of the 2012 SLR Working Paper used as background in writing Guideline B, *Guidance Material for Building-Induced Wake Effects at Airports*, alerted us to the possibility that staged developments or even the construction process for single buildings may create temporary wake and turbulence issues that are not currently assessed or mitigated.

Figure 17 illustrates a configuration of buildings that constituted a highly problematic shape that wasn't moderated until the final building of the complex was completed some considerable time after the development began.

Conclusion

AusALPA acknowledges that the process that we recommended to the Minister has been followed.

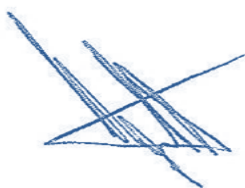
We continue to have reservations about a number of issues that may result in the real risks to aircraft operations being unexplored or undetected, but they are either beyond the control of CAPL or are unlikely to be resolved in a reasonable timeframe.

We strongly advise CAPL to provide a clear disclaimer about the limitations of the Safety Case in regard to the windshear, wake and turbulence effects of the existing buildings as distinct from the analysis of the 9 Molonglo Drive development.

We also believe that Recommendations 1 and 2 should be reconsidered in light of our advice – they are “no cost” changes that will enhance safety.

Please do not hesitate to contact us if further clarification or consultation is required.

Yours sincerely,



Captain Murray Butt
President AusALPA
President AIPA



Captain David Booth
President AFAP

Tel: 61 – 2 – 8307 7777

Fax: 61 – 2 – 8307 7799

Email: office@ausalpa.org.au
government.regulatory@aipa.org.au