

Evans Head Memorial Aerodrome Committee Incorporated



State Heritage Listed Evans Head Memorial Aerodrome World War II

Aviation Safety Regulation Review Submission

Closing Date 31 January 2014

Preamble

The Evans Head Memorial Aerodrome Committee (EMAC) is pleased to have the opportunity to comment on the *Aviation Safety Regulation Review* (ASRR) announced last year by Minister Truss.

The Evans Head Memorial Aerodrome was established by the wider community in 2000 following the decision of the then newly-amalgamated Richmond Valley Council to abandon its own Section 355¹ Evans Head Airfield Advisory Committee.

The Council Committee had been formed in the mid-1990's in response to community pressure to have a say in the future of the four airstrip Evans Head Memorial Aerodrome which the former Richmond River Shire Council had been carving up for housing development without the necessary permission of the Federal government as required by clause 2(p) of a *Transfer Deed* over the airfield².

The Purposes of EMAC are to represent community interests to appropriate authorities (including Local, State and Federal Governments) with regard to:

1. Maintenance and responsible development of the Evans Head Memorial Aerodrome as a 'working airfield', and
2. Preservation of the historical aspects of the aerodrome

Major Safety Concern

Assumption: Local government is best placed to make decisions about the development of its airfields

EMAC has been told repeatedly by Federal governments and the department responsible for aviation³ that local government is 'best placed' to make decisions about how it manages and develops its airfields. *Ipso facto* this means that local government is making decisions about aviation safety. Development often means encroachment by non-aviation real estate expansion on existing aviation infrastructure, and a failure to maintain existing aviation infrastructure which may put aircraft at risk during take-off and landing.

In the case of Evans Head Memorial Aerodrome, Richmond Valley Council [owner of the airfield] undertook a safety assessment for a development application for a retirement village to be built on aerodrome land 90 metres from the main runway.

As far as we know the council has and had no specialist knowledge with regard to aviation safety. Here is what the council officer had to say [in its entirety] in his report to the Joint Regional Planning Panel which heard the matter in 2012:

¹ Local Government Act NSW 1993 as amended

² This *Transfer Deed* was not unique to Evans Head but applied to over 200 ALOP aerodromes around Australia

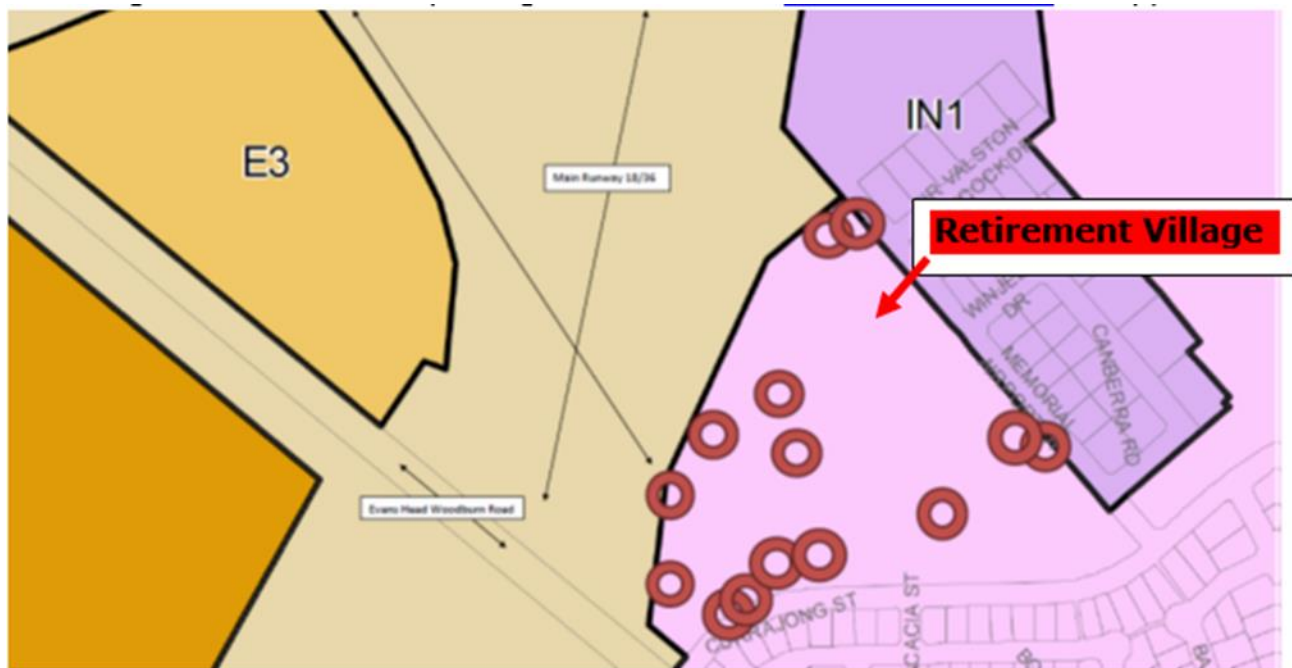
³ Subject to various name changes over the past 20 years



“The potential for physical impact by an aeroplane crashing or running off the runway on the IRV[retirement village] is considered extremely low given technological advances in both air control and in aeroplanes and the strict operating requirements pilots must satisfy as imposed by CASA and as the retirement village is approximately 90 metres from the open runway”.

In our view the safety assessment was inadequate. The matter was raised in Senate Estimates (23 May 2012). [Aircraft accident data from both Australia and California show a risk of accident at the retirement village site (see figure 1 below).]

The Australian Safety Transport Bureau failed to respond to correspondence about safety at Evans Head. The matter was referred to the Commonwealth Ombudsman following repeated attempts to obtain an answer without response. It took almost a year to get a response (see attachment 1). In our view the response was less than satisfactory.



Red Donuts show accident sites from California data sets for departures and landings superimposed on the proposed RSL LifeCare Regional Retirement Village. Source: California Airport Land Use Planning Handbook (2002) and Richmond Valley Local Environmental Plan 2012 Sheet LZN_010A

Figure 1: Red donuts show location of accident sites from California data sets for GA

It is very clear that the Australia government is using an **affordable risk model** in its assessment of aviation risk. Basically this is a model in which governments decide how much they can afford to pay should an aircraft crash. But where is the modelling which shows what the costs might be for Evans Head if the development had proceeded and, is this an appropriate model to use?

The ATSB seems to be operating off the notion that accidents are infrequent so therefore there is not a problem. However the problem with such thinking is that the ATSB cannot tell us when such an ‘infrequent’ accident might occur. Is it on the first occasion when a plane is taking off or on the 665,000th takeoff?

As it happens there was an aircraft crash at Casino airport [also owned by Richmond Valley Council] in 2013 (see Figure 3) in an adjacent retirement village built right at the western end of the main runway. What might have happened if a fully laden water bomber had crashed on take-off?

When council wrote to the Federal government to get permission to develop the retirement village at Casino it indicated that it would only cut 40 to 50 metres off the end of the main runway to accommodate the village but council subsequently cut off 485 metres compromising the strip which is used by the Rural Fire Service in NSW. They also built a house right at the end of the strip (see figure 2).



Figure 2: western end of the main runway at Casino Airport showing house located right at the end of the runway and site of air crash



Figure 3: aircraft crash at Casino near house at end of runway courtesy NBN News

It is our view that:

1. local government is not best placed to make decisions about aviation safety and development, and
2. the ATSB is using a flawed 'Affordable Risk' model for aviation safety which puts developments around airfields and aviators at risk. While frequency of accident might be low, the ATSB cannot predict when and where an

accident might occur. Where developments are close by it leaves little opportunity for the aviator to take steps to avoid impact on the developed areas.

Overall it is our view that:

1. Local government should not be involved in making development decisions which engage aviation safety issues as they do not have the necessary expertise or knowledge to make informed decisions and often have conflicts of interests as both owner and consent authority. As a result they may put both aviators and developments at risk.
2. State governments should also not be involved as they also have demonstrated similar lack of knowledge and experience in NSW.
3. The Federal government should be the only authority to make risk assessments so that there is uniformity in decision-making across States
4. There needs to be a review of the Affordable Risk model of aviation safety to ascertain whether it is the best model to be used for safety. We take the view that there are better models which minimize risk including significantly larger safety exclusion zones around airfields.

Assumption: ANEF noise measures are an effective surrogate for determination of safety zones around airfields.

It seems to be the case from Evans Head and Casino that ANEF contours are used to determine how close a development can be to an airfield, that is, are used to determine safety zones. We would be interested to see what empirical evidence there is to support this contention. How effective a surrogate are noise contours for aviation safety?

This assumption is particularly concerning as the big developer lobby seems to have taken control of the agenda with regard to a proposed revision of the AS2021 Standard, a review which is long overdue.

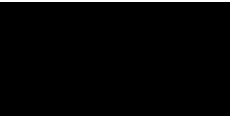



Political lobbying and exclusion of interested and key stakeholders from meetings held by Standards Australia suggest, in our view, that Standards Australia has been captured by the developer lobby with a vested interest. What this means for aviation safety is not clear.

AS2021 was determined many years ago and was based on a political decision. It appears to suit the big developer lobby to keep this 'noise nuisance' standard as it is. In our view it is time for the AS2021 standard to be reviewed by an independent body if it is going to continue to be used by developers to determine how close to an airfield a development can be built. This is a safety issue.

Concluding Remarks

Australia seems to have moved away from models of safety which maximized safety zones around airfield using open space. Instead we have moved to an affordable risk model which puts a value on human life based on infrequent accident and which allows developments to move closer and closer to working airfields to accommodate developers. Current planning decisions about proximity seem to be based on an ANEF standard which is in desperate need of review and which may or may not be an appropriate surrogate for development and safety curtilage.

It would seem that many decisions about safety are made by individuals at the local and state government level who do not have the necessary expertise and may have vested interests. It is time for the Federal government to review its own concepts of safety, put decision-making on a sound empirical base, and take responsibility for aviation safety out of the hands of local and state governments so that there is uniformity across State boundaries.


Dr Richard Gates
President
  



Australian Government
Australian Transport Safety Bureau

Chief Commissioner

Our reference: ATSB13/9

18 February 2013

Dr Richard Gates
President



Dear Dr Gates

You wrote to me on 12 June 2012 with some queries in relation to comments I made in response to questions about the risks relating to aircraft engine power loss on take-off from smaller airports. We believed that we had responded to your letter. Subsequently, however, the Commonwealth Ombudsman asked when we intended to reply. A subsequent search of our records failed to locate evidence of any reply having been sent.

I apologise for our oversight and regret any inconvenience you may have been caused as a result.

As regards your original letter, you wished to know the protocol, methodology or model underpinning the risk analysis we use to determine the significance of a safety issue. You also wished to know the empirical basis of our approach, including the decision theory on which it is based.

As a starting point, it may be helpful to describe some of the key components of our overall approach to safety investigation and analysis. We take safety to be the state in which the probability of harm to persons or of property damage is reduced to, and maintained at, a level which is as low as reasonably practicable. Both our investigations and our safety research work are directed to the identification of **safety factors**: events or conditions that increase safety risk (that is, if they occurred in the future, they would increase the likelihood of an occurrence, and/or the severity of the adverse consequences associated with an occurrence).

Some of the safety factors we identify are classified as **safety issues**: that is, they are assessed as having the potential to adversely affect the safety of future operations, and as being systemic and ongoing. When we identify a safety issue, we assess its risk level. The process of assessing risk level is in four parts: determining scenario, assessing likelihood, assessing consequence and applying the results.

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For scenario, we assess first what is the worst possible scenario that would result from an identified safety issue. Then, having assessed that in the light of existing risk controls, we determine the worst credible scenario. That scenario is then assessed for its consequence (minimal, moderate, major or catastrophic) and its likelihood (very rare, rare, occasional or frequent). For each of the classes of consequence and likelihood, we have indicative standards to guide the assessment. Application of the severity and consequence assessment results informs a decision about the level associated with risk of the safety issue as:

- Critical: associated with an intolerable level of risk, or
- Significant: associated with a risk level regarded as acceptable only if it is kept as low as reasonably practicable, or
- Minor: associated with a broadly acceptable level of risk.

Our approach to risk assessment of safety issues is based on the current international and Australian standard AS/NZS ISO 31000:2009 - *Risk management - Principles and guidelines* and associated material. That standard, however, is principally directed at proactive risk management by organisations, while the business of the ATSB as a safety investigation organisation focuses on understanding the potential significance of safety issues and assessing whether others might need to take action. For that reason, we have focused particularly on the risk analysis and evaluation components of the standard. We have also drawn on approaches and techniques used by major transport organisations.

The ATSB's risk analysis approach is not intended or required to be a complete analysis such as may be required for the purposes of a developing a safety case or as part of a formal cost-benefit analysis. It is intended to be a structured, objective and efficient approach to determining whether a safety issue has a risk level which appears to warrant corrective action or, in some cases, further ATSB investigation. Our analysis will often be qualitative rather than quantitative in nature and is based on the evidence available to us through investigation, reports of safety occurrences and our research and analysis.

To support our approach to determining risk level and the possible need for corrective action, we have documented our safety analysis methodology and process as part of our *Safety Investigation Quality System* (SIQS). SIQS is supported by structured safety analysis training for all our investigators and by elements of our supporting Safety Investigation Information Management System (SIIMS – our in-house information technology system).


At Budget Estimates in May 2012, I was asked for my views about the encroachment of non-aviation related infrastructure in the vicinity of aerodromes, and whether or not it elevated the risk arising from the occurrence of power-loss situations. I answered that, in accordance with the risk analysis that we undertake (which I have outlined in this letter), I did not see the associated safety issue as significant.

In terms of the methodology I have outlined, the most credible scenario arising from an interaction between partial engine failure and the development of non-aviation infrastructure would be a collision with a building resulting in injuries or fatalities to people on the ground.

In terms of our indicative standards, such a scenario would be assessed as having a moderate consequence. Our best evidence for likelihood is our database of aviation safety occurrences. During the last ten years, we have records showing two occasions where there have been minor injuries on the ground as a result of accidents in the vicinity of an aerodrome. We have no records of fatality or serious injury. This is in a context where there are about 14 accidents in the vicinity of aerodromes for each million departures, with no significant variation in trend. Based on this and the longer-term information in our database, we would assess the likelihood of on-ground injury or fatality as rare. A safety issue that is assessed as of moderate consequence and rare likelihood is generally given a risk rating of minor.

I trust that this provides sufficient context for understanding my remarks.

Yours sincerely

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Martin Dolan

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