riceres/steve

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Sent: Wednesday, 24 June 2009 3:49 p.m.
To: riceres/steve
Cc: armadillo.eng@xtra.co.nz
Subject: Response to BOI interim report and decision
Attachments: Letter to Board of InquiryV2 24 June 09[1].doc

Steve,

Pls find attached.

You may be able to tell we were not impressed

Allan McCreadie

Acting Chairman

AATUC

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22 June 2009

North Island Grid Upgrade
Board of Inquiry
c/- Steve Rice
Rice Resources

Dear Sirs

B.O.I. Draft Report & Decision
'Effects On Safe Use of Ardmore Airfield"

I respond to this draft as follows:-

"From big oak trees, little acorns come".

I have not responded to every aspect of what I consider to be inaccuracy in the B.O.I. report. There seems to be a very selective use of evidence to support an unbalanced decision.

My response is under the following headings:

I	AATUC position
II	Sullivan (and Stevens') independence of Airbiz Report
III	Airbiz Report
IV	Grid Risk
V	ICAO
VI	Sullivan Evidence
VII	Health & Safety in Employment
VIII	Multi-Pollution Model
IV	Reason Model

I AATUC Position

In B.O.I. [1463] the AATUC is badly misstated. The pragmatic solution of new line undergrounding (U/G) was an alternative solution to the academic option of another (more reliable) risk analysis and report - NOT an addition.

There was a further alternative offered in AATUC oral presentation (based on the "mitigate" aspect of the "avoid , mitigate, compensate" mantra of Health and Safety in Employment and p 21 of AS/NZS 4360:2004 (Changing the likelihood of the risk).

This involved U/G instead the OTA-WKM A, B and C lines, should the U/G of 400kv line prove technically infeasible.

A risk expert able to grasp the concept of cumulative risk from multiple (and spread) lines would be expected to confirm that the inability to avoid new risk could be mitigated by the retirement of old risk, so that the total is not increased by the new.

There is no severe technical challenge to this 200kv line U/G; and being closer to the airport, shorter U/G lengths would subtend the same fan clearance angle.

AATUC evidence acknowledged the "danger" of highlighting the omissions from Airbiz/Sullivan work was that risk may appear over stated. The AATUC point was adequately made that the problem we had with Airbiz/Sullivan evidence was that the omissions identified cast great doubt on their evidence into the point that the actual total risk was, we considered, never adequately analysed (as opposed to being automatically excessive), if our points were taken.

The B.O.I. seem to have taken the simplistic approach and incorrectly attributed an "automatic excess risk" to the AATUC position.

II Sullivan (and Stevens') Independence of the Airbiz Analysis & Report

The B.O.I. claim that Sullivan was independent of the Airbiz report is totally bizarre - and the person to be most surprised in learning this could be Mr Sullivan himself.

From the main body of Mr Sullivan's evidence:-

14. "In this respect, I worked directly with Iain Munro, the General Manager International of Airbiz Aviation Strategies Ltd."

17. "My evidence draws on the aviation risk-assessment study conducted by Airbiz and detailed in the Airbiz Report."

25. (explains how his definitions work with those of Airbiz)

29. (describes in great detail the methodology adopted by Airbiz and Sullivan combined)

31. "I attended all meetings as listed" (29.) "and participated in all activities apart from the on-site inspection conducted with Transpower personnel on 9 May 2007."

36. (described shared Airbiz/Sullivan limited context use of ICAO doc 9589 and AS/NZS 4360:2004)

104. & 108. to 120.
(covers Sullivan participation in, and apparent influence of the 8 May 2007 PHA (preliminary hazard analysis) and the HazID (hazard identification) of 28 May 2009)

(This passage includes the controversial denial by Airbiz/Sullivan of the 118(c) hazard as "not applicable"; and dealing to this politically unacceptable hazard in this manner is the only obvious substantive front-end input to content made by Airbiz/Sullivan.)

From Mr Sullivan's evidence in rebuttal:-

18. "I am one of three aviation specialists who took responsibility for the Airbiz risk assessment and prepared the subsequent report".

24. "While I hold no pilot qualification, my role in the Airbiz team was to provide expertise…"

My comment on Mr Sullivan's "independence" claimed by the B.O.I. report:-

- Given the credence given to Sullivan's evidence by the Board, this is hard to equate with the realisation that they do not appear to have read it. Readers could be forgiven for thinking someone else wrote the Board's report for them.

- If the Airbiz report is not of admissible evidence quality (and we contend it is not), then there is no separating Sullivan's evidence from this Airbiz report; they are all part and parcel of the same work. Sullivan's evidence must also therefore be rejected. The Airbiz report is a version of Sullivan's evidence, such was his influence on the lead up procedures and content.

Stevens' Independence

Steven was brought in last minute in rebuttal only of AATUC evidence.

He appeared hampered by his dependence on Sullivan research and the quality issues perceived with this.

It is most unfortunate that Max Steven was only utilised in this manner and paraded to fill in a vacuum conveniently created by the non-involvement of the CAA-proper.

III The Airbiz Report

With Sullivan evidence inseparable from the Airbiz report, this needs to be revisited to remind ourselves of the opportunity-lost and admissibility issues associated with this.

In the Airbiz report the new lines are not considered as an incremental increase in what may already be a marginal situation. The existing lines are used for comparison rather than accumulation of risk.

The Airbiz report only claims to be two steps of a three step process, and the third (not completed) step has been "assumed" to offer a ten-fold reduction in calculated risk required to get the risk into an acceptable probability.

And this is with the Sullivan 118(c) issue denied as "not applicable" - although a very real hazard to the pilot panel.

This is a Health and Safety in Employment issue for our professional pilots and their student clients. The same considerations apply to a business putting the public at risk through hazards their equipment and activities create. I contend the Airbiz/Sullivan evidence is not up to the required standard.

This Health and Safety in Employment is dealt with in Section VII.

IV Grid Risk

Also from B.O.I. interim report [1463], the Board record AATUC evidence concern regarding risk to the grid itself, but do not pass any comment on the fact that Airbiz/Sullivan have volunteered no evidence on grid risk from aircraft.

Sullivan claimed "it was not in their scope" (under McCreadie cross examination).

Sylvia Allen on the other hand, of MWH, who project-managed Airbiz and Sullivan, answered in her cross examination by myself, that no such limitation had been imposed - that she had in effect retained experts to give her the whole picture, not just one part of it - and that the denial of cumulative risk from multiple spread lines was similarly an Airbiz/Sullivan "contribution"; not a scope imposition by MWH.

In Sullivan's rebuttal 37. he seeks to imply that I would claim in the case of Mr Matthews' fatal 2008 accident at Whenuapai that - had a power line been in the vicinity - I would claim automatically that the line had contributed to the control loss (causes not yet notified).

First, we have to set aside the unsubstantiable supposition and Sullivan's personally insulting use of the death of a close acquaintance - inexcusable even allowing for the lack of culture that nurtured him.

What Sullivan has stumbled on here, still without recognising it, is that there is an important class of additional potential hazard to the lines that is not created by the lines - other than that their owners have deployed them in stupid places.

These are <u>not</u> situations where the lines create a hazard for the <u>pilots</u>. By the time <u>line</u> impact occurred, the pilot could already be dead (aircraft collision) or helpless (loss of control) - with no lines implication to cause.

Faced with an escalation in risk to lines where the total risk was not now limited to only the number of risks to pilots; Sylvia Allen queried under cross examination why the Ardmore pilots involved in the PHA and HazID had not identified the issue earlier. I was able to confirm that pilots would be unlikely to concern themselves about anything that was not about their own safety and concerns.

This leaves Transpower/MWH/Ms Allen with a substantial gap that the B.O.I were anxious I did not fill for some reason - lines exposure impacts are <u>additional</u> to pilot exposure accidents.

In cross examination, Sylvia Allen, being particularly astute, caught on immediately. My questioning was cut short by the Board and I was instructed to "leave it to the experts".

Even competent generalist project managers such as Ms Allen can be let down by their experts, and this looks like a classic case. Ms Allen claimed that the brief and scope given Airbiz/Sullivan did not exclude anything they considered relevant, so the assumed scope limits by this combined party were self-imposed and apparently inadequate.

Any survey of accident records would highlight the sadly frequent collision and control loss events close to airfields. Applying only memory I can recall five collisions within 6km of airfields:-

- CAA Piper Seneca at Walsh Memorial Scout Flying School Matamata (miraculously non-fatal).
- Two Havards over Ardmore, one fatal.
- Aircraft vs. helicopter near South Island tourist aerodrome - multiple fatalities.
- Aircraft vs. helicopter - Moorabin, 2008 (Melbourne, Australia) - fatal.
- Aircraft vs. helicopter - Paraparaumu, 2008 - fatal.

There can be multiple large parts created by a collision, and absolutely no control of their descent or landing point, especially if the pilots are incapacitated.

The only general aviation collision I can recall around New Zealand of recent years not associated with aerodrome traffic, is the Police helicopter/traffic spotter plane on motorway patrol.

Three "loss of control" accidents spring straight to mind without research - all at aerodromes in recent years.

- Mr Matthews at Whenuapia;
- A Tiger Moth at Taumaranui;
- An engine-out twin at Fielding;

and a quick review of accident records would add to this.

An aircraft which has lost flying speed descends without directional control; can land anywhere; and hit anything.

Disregarding the B.O.I. report, I hope that Ms Allen can prevail on Transpower to take some wise counsel on this - possibly Mr Stevens.

These are not risks to pilots from lines and we will not pursue this beyond the issue of credibility of the Airbiz/Sullivan evidence and expertise.

The situation highlights how little Airbiz/Sullivan brought to the tables of the PHA and HazID exercises.

V ICAO

In [1473] the B.O.I. record a section of my evidence in relation to ICAO documentation as "used" by Airbiz/Sullivan.

Starting with the last phrase of [1473], first we have the issue of uncontracted parties.

The New Zealand Government is contracted to ICAO and the connection has been made through the New Zealand Civil Aviation Authority.

The aviation industry is contracted by legislation to comply with the Civil Aviation Act and CAA rules and regulations, some of which are ICAO based.

But that's it for contracted parties: ICAO, New Zealand Government, CAA, Aviation Industry.

You will notice that the Ministry for the Environment, their B.O.I., hired guns, Transpower, and ex CA employees, do not feature in this chain of command.

While it may be entertaining (in the absence of CAA direct input) for these parties to indulge in games of "ICAO says", you need to get it straight: ICAO knows nothing of this project, and is not talking to you.

Our last contact with CAA on the subject is that CAA will not issue a Part 77 determination unless requested to do so by the Local Authority or Requiring Authority, i.e.,

- Manukau City Council,
- Papakura District Council,
- Ardmore Airport Limited,
- Transpower,
- Presumably, the B.O.I,

but no one did.

Note that this Part 77 does not limit the lines building, but would only specify new operational limitations (if any) on the aerodrome affected, should the lines be placed as proposed.

Any marked degree of procedural changes that could arise would point to heightened risk and compensation payable. AATUC cannot cause this determination to be generated. The Board could have directed that the ICAO related issues pass through the proper channels. The role of omnipotent bureaucracy seems to have been more attractive.

VI Sullivan Experience and Expertise

[1466] of the B.O.I. report acknowledges Mr Sullivan's credentials. There is no way that the expectations that these create do anything other than highlight for me the deficiencies I perceive in his work.

In 20 years of doing intermittent professional witness work (including a High Court action during the machinations of the B.O.I, where I assisted Simpson Grierson (Ak) prevail in Leaderbrands v Danfoss), I have never come up against work of the quality of Airbiz/Sullivan.

Admittedly, most of these actions have involved people like myself; professionals who have been required to provide witness, as opposed to witnesses by profession.

In Sullivan's main brief 80., the four transmission lines existing are acknowledged. Then "As I have noted earlier the ARI-PAK A line was constructed prior to the establishment of Ardmore Airport so it is reasonable to assume that has been judged to present an acceptable baseline risk for aircraft operators at or in the vicinity of the aerodrome."

The truth is that even in the restrictions of a war situation (1943), the aerodrome was set closer to the village of Papakura than ideal, to be further from the ARI-PAKA powerline.

On the three subsequent lines placed closer to Ardmore, what "assumptions" or presumptions does our expert have to offer? By his silence on this matter are we supposed to accept that the "assumption" regarding the first line automatically expands to cover the subsequent?

Is this what allows him to use these only for comparison with the new line increment rather than in accumulation?

If the whole exercise rests on an assumed foundation, what (if any) value does it have?

Do these assumptions represent expert risk analysis?

In 48. of his rebuttal, Mr Sullivan defends the claimed findings by Airbiz/Sullivan that loss of control while manoeuvring to miss the lines in an engine-out aircraft, is an impossible combination (despite the Ardmore pilot group giving it a priority as recorded Sullivan 118(c) of his main brief).

Although he claims support from Mr Stevens in this; Mr Stevens himself admitted in cross examination by McCreadie that the new lines would effectively "fence Ardmore in" and that a forced landing over the new lines in emergency could not be recommended. This obviously implies more manoeuvring for an engine-out aircraft and additional risk.

VII Health & Safety in Employment (H&SE)

The AATUC issue is a Health and Safety in Employment case - as we advised Transpower approx. 3 years ago. We were amazed at the gall of Transpower rolling this into a Planning Board of Inquiry. The Board Chairman confirmed that they were not interested in jurisdiction of H&SE issues (during my cross examination of Mr Sullivan).

Would that their report and decision contained this level of circumspection. Even if the Airbiz/Sullivan risk report and evidence were at what I understand the H&SE quality to be, I would have understood entirely if the Board had directed that AATUC and Transpower took their cases to the correct venue and brought back a solution, not a problem.

With the issue dragged before the B.O.I., we were forced to respond, but we are glad now we did not waste money on expert witnesses or counsel in the process. We were surprised to find the evidence not being given under oath.

What the B.O.I. did allow was the testing of Transpower evidence - only modestly in substance due to my lack of cross examination skills - but seriously in the consideration of the marriage of Transpower to that evidence.

Even if the B.O.I. final report is similar to the interim, Transpower can take no comfort, nor assume any absolution from H&SE action, since the B.O.I. specifically made the point at the hearings that this was not their jurisdiction.

We are able if necessary, to bring private H&SE action, as this provision is required (for instance) for industrial unions to bring action on behalf of their members should the Labour Department or CAA (the two H&SE enforcers in New Zealand), not do so.

In the H&SE environment of strict liability the Airbiz/Sullivan report would struggle, with its introductory disclaimer. This is "contracting out" of their responsibility which is not possible under strict liability. A considerable number of issues with Airbiz/Sullivan report and evidence have been highlighted in AATUC original evidence and some repeated above. Transpower and Airbiz/Sullivan could expect this to be tried to a much higher standard under a H&SE jurisdiction.

VIII Multi-Pollution Model

While we understand and accept that H&SE is not the jurisdiction of an MFE B.0.I., I would contend that issues of "pollution" are, and I would expect them to know how to respond to same.

We would content that the Ardmore emergency landing air space is polluted with power lines.

The Transpower/Airbiz/Sullivan contention (and now the B.O.I.) is that as long as a new additional pollution stream is no worse than the present maximum contributor, then this is quite all right. You do not have to consider the total pollution level.

Fast forward to 2009, and apply this logic to a stream or river. I cannot see an Environment Court condoning this approach, and cannot understand the B.O.I. accepting it either.

IX Reason Model

The Reason Model is a means of analysing human factors through an "organisation" or linear chain of command to evaluate the ability of each level to stop, filter out, or deflect the precursors to a disaster.

The logic is that if all the human and organisational procedural weaknesses in the various screen levels line up in a particular instance, the precursors can pass through and create the disaster.

The Reason Model is used to teach those in hazardous endeavour to adopt better mind-sets, procedures and organisational skills at each level so that each screen is as resistant as possible to the passage of the disaster precursors (poor concepts, bad details, politics replacing logic, lies replacing fact, lame excuses, bullying, incomplete specifications, poor planning, poor quality material, poor workmanship, inadequate training, reliance on assumptions, etc, etc).

Adopting this methodology, a few things become immediately and intuitively obvious:-

(i) In the optimum and most efficient system, the screens will catch those precursors generated in the level immediately above and reject them.

Each screen does the minimum work but totally effectively.

(ii) The worst system will have weak or hole ridden screens at all the upper levels and leave all screening to the bottom one or two. They may overload, clog or fail completely.

(iii) If you adopt (i), the screens can be specifically designed.

(iv) If your adopt (ii), they must be miracle catch-alls.

(v) More screens may be safer; but overdone, nothing will get done.

Transpower's resident aviation risk expert has taken the Reason Model and misapplied it to a simple probability exercise involving the failure of an engine on an aircraft in line-exposure (121. to 136. of his rebuttal evidence).

[While the exercise has a relevance, the only difference between his 1 fatal collision per 68 years, and my figures, are that I used 1 engine power loss per 2,000 hours engine life Mr Sullivan first proposed, while Mr Sullivan has now used 1 per 6,000 hours based on some figures from Mr Stevens. At 1 per 2,000, Mr Sullivan's figure becomes 1 fatal collision per 23 years, similar to my own (an unacceptable risk for an identifiable and avoidable hazard)].

This is totally irrelevant to the Reason Model, however, as that is intended to be used as a human factor behavioural modifier - right up to the top levels of governance - see (i) above.

Cutting to the case at hand, we see here a New Zealand political hot potato melting a set of perfectly aligned holes as it drops through all the plastic upper levels.

As usual, the only steel screens are at the bottom.

Allan McCreadie
Acting Chairman
Ardmore Airfield Tenants & Users Committee