

13th January 2012

Mr Peter Carr
Ministry of Transport
Wellington

Dear Sir

Re: RIS CAR Part 137

Thank you for making the RIS available to NZAAA.

NZAAA would like the Ministry of Transport to know that CAA undertook to consult with it over the development of this RIS. As a consequence of not consulting with NZAAA in the development of this RIS, there are areas in it that concern NZAAA as they are flawed. They are:

- 1) The basic conclusions of the RIS are sensitive to the hourly rate used in their calculations. Our view is that the hourly rate should reflect the actual costs to the industry. All parties, CAA, MOT and Industry are aware of the proposed price adjustments from 1 July next year. These should be used as the basis for the RIS as this reflects the most likely cost scenario for the industry
- 2) CAA maintains that the benefits roughly balance the costs based on its *current* charge out rate. Given that the Minister will concurrently with any consideration of these rule amendments also be reviewing price increases for CAA charges these increases should also be addressed in the RIS as this reflects the true impact on the industry.
- 3) There is a lack of understanding in CAA of the difference between 'overloaded for the conditions' and 'overloaded' in terms of legislation. It is difficult if not impossible to legislate 'for the conditions' however effectively this is what CAA is attempting to do.
- 4) The cost to NZ farmers has been acknowledged but no attempt has been made for it to be quantified. This cost could be many millions of dollars every year.
- 5) CAA's estimate for the cost of raising STC's for each aircraft type is significantly understated when comparing the estimate to what is actually being charged. CAA has also significantly changed the basis upon which modifications can be undertaken to aircraft and is now requiring an STC for every major modification – this is a practice that has changed since the NPRM was drafted and is now imposing substantial costs on the industry.

- 6) The decision to amend CAR Part 137 was based on the fixed wing accident rate that prevailed prior to 2008 and the number of incidents identified in the Agricultural Aircraft Safety Review. NZAAA view is that the AASR is flawed and its promised peer review has not taken place to substantiate its findings.
- 7) There has been no industry engagement over the appropriateness of the statistical period under review – this is significant as a 10 year horizon may not be the most appropriate and may in fact represent an aberration in performance as opposed to any long term trends- these are matters the affected industry should be consulted over. One legitimate question for example is - is not the last three years of performance more important than the last 10 in terms of indicative performance?
- 8) There is no comparative international data presented in the RIS to demonstrate whether New Zealand industry is comparatively equivalent to or has a better or worse safety record than comparable jurisdictions. NZAAA's understanding is that this information is available and we would consider this information to be an integral part of any RIS.
- 9) In our view the assessment of options to pursue ie rule making vs other options should have been subject to a full and transparent risk assessment – this process is already in place through the IAG and an IAG should have been convened to address the assessment. At the present time the assessment reflects only the views of the CAA and not those of the industry or wider community of interest such as the farmers.

We would like to comment on various items in the same order that they appear. You may take it that if we have not commented on any items then we do not dispute them.

Paragraph 6. NZAAA agrees that CAA is not resourced to visit individual airstrips and accordingly alternative strategies to address this issue must be put in place. We note, for example that staff from the CAA Ag Unit have made a determined effort to meet with pilots instead of just with operators and this is having positive outcomes.

Paragraph 10. It is misleading to say that *non-regulatory interventions have been implemented*. CAA has not implemented the Guideline by either enforcement of it or by reference to it in a rule. CAA *endorses* the Guideline.

Paragraph 16. The CAA's use of the term 'overloading' shows poor understanding of the issue. In 17 CAA says, *The highest profile problem is how pilots apply the overloading rules in Part 137 and the risk that pilots use incorrect information or do not pay due attention to determine their load for take-off*. NZAAA believes that only one accident aircraft in the last ten years was overloaded in terms of legislation. But in all the take-off accidents the aircraft were overloaded *for the conditions*. This is a point CAA seems to consistently misunderstand. And again in 18 they say *Part 137 should be rewritten so that operations at an increased maximum weight are addressed by aircraft certification rather than by operational decision*. And again in 29 *address the issue of overloading by requiring an operator who wishes to operate an aircraft with a higher weight than certified, to have it*

approved by the CAA. This will result in a flight manual supplement to specify the new weight and performance limitations that will mitigate overloading hazards.

NZAAA takes this opportunity to stress to MoT that addressing aircraft weight certification would not have prevented any of the take off accidents in the last ten years as in each case the aircraft were overloaded for the conditions – and except for one case, not necessarily overloaded in accordance with CAR Part 137. Overloaded for the conditions can be a consequence of any hopper load. Take off accidents in fixed wing aircraft are typically the result of poor decision making and risk assessment by the pilot. (see the next paragraph)

Paragraph 18. That the conclusions drawn from the Agricultural Aircraft Safety Review (AASR) were an influential component of the decision to delete CAR Part 137 Appendix B is beyond doubt. However, since 2009 NZAAA has repeatedly asked that the AASR be subject to a peer review because much of the AASR is based on unsubstantiated data with no supporting information. In other words it is data rich but information poor. For example, the report quotes a number of Cresco undercarriage failures but the part that was causing the problem was replaced years ago and is no longer available. That problem had been overcome by the time the report was published. CAA (including DCA) agreed that the AASR would be peer reviewed but that has not taken place. The consequence of this is that operators and customers are being faced with a very significant expense based on an unsubstantiated report.

Paragraph 23. *Objective: To improve the safety culture of the agricultural aviation industry, in particular by ensuring the safety risks associated with agricultural aviation are better identified and managed to ensure fewer accidents in the sector.*

NZAAA takes this opportunity to advise the Ministry that this objective is precisely what AIRCARE™ seeks to achieve. AIRCARE™ is an industry driven accreditation programme that was launched last May and requires operators to develop their own Safety Management Systems. Operators are required to develop robust risk management strategies in terms of flight safety and environmental safety and the entire programme is third party audited. For information on AIRCARE™ go to www.aircare.co.nz/resources For many Ag Operators this is their first exposure to management systems. It is the view of NZAAA that this programme is far more effective at preventing accidents than the removing of Appendix B from CAR Part 137 and replacing it with a new Agricultural Operating Weight (AOW).

Even if an AOW is established the aircraft may be overloaded for the conditions when its weight is *below* the AOW. Wind direction, airstrip surface/slope and aircraft performance are all factors that permit a safe take off. It is not just aircraft weight that determines whether or not a takeoff is successful and some in CAA do not seem to understand the importance of these other factors.

NZAAA believes that good decision making by pilots following good training and robust risk assessments bring better safety outcomes than legislation. This is not to say that NZAAA is opposed to legislation in its sector.

Paragraph 42. On the basis of information from one operator, the cost of establishing the AOW is grossly understated in the RIS. The cost of raising an STC for the Agricultural Conversion of the Pacific Aerospace 750XL was in excess of \$300,000 paid to a CAR Part 146 Organisation plus \$25,000 to CAA and the PAC 750XL is an aircraft that had already recently been certified to FAR 23, 34 and 36. Yet CAA in Appendix D to the RIS suggests the average cost to establish the AOW (by CAA's own call this involves the issue of an STC) is a mere \$33,975. It is interesting that CAA expended over 200 hours approving the 750XL STC when a 146 Organisation had already spent hundreds of hours justifying that design, yet in the RIS they have estimated an average of just 25 hours for each type.

NZAAA finds it difficult to have confidence in the 25 hour estimate quoted by CAA.

Paragraph 43. The argument for using less fuel is erroneous.

No costing has been produced to show the increased cost to farmers of aircraft carrying lighter loads and this area should have been covered by the RIS as it has the potential to have a significant impact.

Cost to farmers

To illustrate what outcomes smaller hopper loads can have, NZAAA is advised that when the hopper limiter was fitted to the PAC 750XL its useful load of Urea dropped from 1.9 tonne to 1.5 tonnes. That meant that over the first 1400 tonnes of Urea sown an estimated additional 46 hours were required and that equates to \$80,000 of extra cost to those farmers.

The example above is not an outcome of establishing an AOW. Rather it is an example of some CAA policy, but the example does serve the purpose of illustrating the level of cost that can be incurred when current carrying capacities are changed.

In the example, \$80,000 is the extra cost to farmers generated by just one aircraft in a three month period. NZAAA reminds Ministry of Transport that in the event that establishing AOW's means payloads less than those currently permitted by CAR Part 137 Appendix B, the example used above could apply to all 58 aircraft all year round with the consequent cost to the farming community of many millions of dollars.

Cost to the Economy

There is a direct correlation between the amount of fertiliser applied and the amount of increased production delivered. For example 1 kg of Urea grows 10 kg of dry matter and 10 kg of dry matter grows 1 kg of lamb weight. 1 kg of lamb is worth \$8 to the NZ Economy. In terms of export income the aerial topdressing industry was valued at \$1 billion in 1999. (Rob Davison, Economic Service, Meat & Wool NZ) Given 2011/12 returns that figure will have trebled. If farmers are faced with increased costs of application as a direct response to costs associated with either the rule change or lower productivity because of lower AOW's, then export income will diminish. And the reason for that is because farmers do not make a decision on topdressing requirements based on a certain amount of fertiliser per hectare. What they do is budget for expenditure on fertiliser with the amount that is actually applied varying to match its on the ground tonne cost. For example a farmer might budget \$40,000 for fertiliser. If the applied cost of the fertiliser is \$500 per tonne he will apply 80 tonnes but if the applied cost is \$540 per tonne then he will only apply 74 tonnes to stay on budget. The point about this is that both the farmer and the economy lose the benefit of those other 6 tonnes and using the Urea example the loss is significant.

The potential for this to unfold is real and should rightfully be considered in the RIS.

Paragraph 45. *The formal requirement for a flight-follower will formalise what 'should' be current aviation practice. There should not therefore be a financial cost imposed.* This argument is self defeating. There will be an extra cost but it is not easy to quantify. For example, using Spidertracks in four aircraft is costing one operator in excess of \$6000 per annum but it is not realistic to say that using Spidertracks to comply with the new rule will cost \$2000 per aircraft as there is the additional cost of making provision for someone to monitor Spidertracks. In any case Spidertracks is only one way to comply with the rule.

Paragraph 46. The comment that there are only 2-3 pilots doing an Ag Rating a year is erroneous and misinformed. There were 25 pilots complete the Initial Chemical Rating course in 2011 and all had flying jobs to go to so all had to do Ag Ratings. The cost of each of these chemical ratings to the individuals is \$2500 so it has to be acknowledged that a number of young people are still being attracted to the industry.

Paragraph 49. CAA is making a significant assumption when it says, *This assumes that operators share the costs of new aircraft operating weight determination.* Operators may not be willing to cost share in this manner.

Appendix B and D. NZAAA's concern with these is that all costs have been calculated using CAA's existing charge out rate of \$118.22 per hour when this rate will change on 1st July

2012 to a rate between \$178 and \$320 and it will be after that time that these costs are going to be faced.

NZAAA has recalculated the costs using a CAA charge out rate of \$250 per hour which is mid way between 178 and 320. The result is shown in the following two tables.

Appendix B Certification and Exposition Compliance Costs

	Small-Medium Operators (less than 5 aircraft)		Large Operators (5 or more aircraft)	
	Not Certificated	Part 135 Certificate	Not Certificated	Part 135 Certificate
Operators	47	45	6	6
Cost per Operator and Assumptions	\$12,994.68 <ul style="list-style-type: none"> ▪ 10 do themselves (100hrs at \$25/hr) ▪ 45 use a consultant (75hrs at \$85/hr) ▪ Most take 6hrs for CAA to accept, but ten percent take 60 hours 	\$11,633.33 <ul style="list-style-type: none"> ▪ All hire a consultant to adapt their Part 135 expositions (50 hrs at \$85/hr) ▪ Most take 6hrs for CAA to accept, but ten percent take 60 hours 	\$13,468.66 <ul style="list-style-type: none"> ▪ All operators hire a consultant (75 hrs at \$85/hr) ▪ All take CAA 10hrs to accept 	\$11,166.66 <ul style="list-style-type: none"> ▪ All hire a consultant to adapt their Part 135 expositions (50 hrs at \$85/hr) ▪ All take CAA 10hrs to accept
NZAAA figures \$1,282,062	\$610,750	\$523,500	\$80,812	\$67,000
RIS figures \$904,908	\$440,161	\$358,446	\$60,057	\$46,245

Only the CAA charge out rate has been changed.

Appendix D: Overload Costs by Aircraft Type

Type	Number	Cost	Cost per aeroplane
Air Tractor (AT-402B)	5	\$36,700	\$7,340
Cessna (A185)	1	\$25,000	\$25,000
DeHavilland Canada Beaver (DHC-2)	1	\$32,100	\$32,100
NZ Aerospace Fletcher (FU24)	21	\$54,600	\$2,600
NZ Aerospace Fletcher Turbine (FU24-X)	21	-	-
Gippsland (GA-200)	6	\$34,600	\$5,766
Grumman Ag-Cat (G-164)	1	\$37,100	\$37,100
Pacific Aerospace Cresco (08-600)	22	\$17,100	\$777
Pacific Aerospace 750XL	1	\$34,600	\$34,600
Zlin (Z-37T and Z-137T)	1	-	-
NZAAA Figure	80	\$271,800	
RIS Figure		\$245,444	

Only the CAA charge out rate has been changed.

As mentioned previously NZAAA believes that the CAA chargeable time that makes up the amounts in Appendix D is grossly understated. In the opinion of members who have recently applied for STC's the CAA chargeable hours should be quadrupled.

CAA has used the best case (lowest cost) scenario to put into its table. Using CAA's spreadsheet but with the new charge out rate assumed at \$250 + GST per hour the cost of establishing AOW's could be as high as \$1,314,800.

The table from Paragraph 30 is reproduced below showing the change with the \$250/hr CAA charge out rate.

Table 2 Summary of Compliance Costs for Whole Industry

Compliance activity	Cost	Frequency
Certification, creating expositions	\$1,282,062	year one
Potential subsequent amendments to expositions	\$65,000	per year
On-going CAA audits	\$87,750	per year
Re-certification	\$202,250	every five years
Fatigue management system and training	\$556,210	year one
Fatigue management software licensing	\$146,710	per year
Operating weight determination costs for Supplemental Type Certification (STC)	\$271,800	year one
Passenger seatbelts	\$30,000	year one
Weighing calibration	\$24,300	per year
Weighing calibration record-keeping	\$4,050	per year
New pilot competency assessment (flight examiner)	\$1,200	per year
NZAAA Total (present value at 8 percent discounting p.a.)	\$4.576 m	first 10 years
RIS Total (present value at 8 percent discounting p.a.)	\$3.51m	first 10 years

NZAAA emphasises that at the time of writing, the new CAA charge out rate is unknown because it will depend on what Passenger Levy the airlines settle on. Using the midpoint of \$250 per hour plus GST alters the cost benefit thus:

Total Discounted Costs	4,576,860
Total Discounted Benefits	3,656,525
Benefit Cost Ratio	0.799

In the worst case scenario of CAA's rate going to \$320 per hour and the maximum amount being allowed for establishing the AOW's then the cost benefit is this:

Total Discounted Costs	6,236,362
Total Discounted Benefits	3,656,525
Benefit Cost Ratio	0.586

Note these examples still use CAA's (ambitious) estimate of 25 hours per type to establish AOW.

The figures CAA quotes in the RIS by comparison are as follows:

Total Discounted Costs	3,511,132
Total Discounted Benefits	3,656,525
Benefit Cost Ratio	1.041

Whether the actual cost turns out to be \$4.5m or \$6.2 m, operators cannot absorb either amount so the farming community will need to pay. In turn this then impacts on the international competitiveness of our key export industries.

An alternative approach

The purpose of the rule change is to improve the safety culture of the fixed wing agricultural sector. Whilst not disagreeing that a culture change was required, culture change can be affected by a variety of options short of substantial rule change which the present draft Rule proposes.

The alternative is to move to a co-regulation model utilizing industry's existing AIRCARE™ Accreditation Programme¹. The AIRCARE™ Programme provides:

- Independent assurance via an independent audit company
- Accountability via an AIRCARE management structure
- Governance via an independent governance Board

Under this model CAA would control entry and exit control to the regulatory system.

NZAAA believes that AIRCARE™ is the programme to affect a culture change in Ag Aviation. The AIRCARE™ Programme teaches pilots and operators sound risk management processes and it provides the operators with a robust management system that provides safety assurance. As mentioned earlier this programme is likely to provide better safety outcomes because it has multiple levels of assurance and not simply the one relied upon with Rule making

There are currently 27 operators accredited or going through the process to become accredited which is impressive considering it was launched only in May 2011. On a cost benefit basis the 10 year cost of the AIRCARE™ Programme to all the of the Agricultural Aviation sector is less than half of the 'best case' example CAA estimates the cost of introducing and maintaining the proposed CAR Part 137 will be. In addition the programme

¹ CASA has undertaken substantial work on the co-regulatory model. A copy of the relevant document is attached and it is that model NZAAA wish to see applied and contextualized into the New Zealand environment. Note the model is not self administration or self regulation.

introduces SMS to the industry some three to five years prior to any possible rule change in that area relevant to Rule part 137 operators.

In terms of economic impact the cost to farmers of AIRCARE™ is negligible whereas the ten year cost to farmers under the 137 rule could be upwards of \$200 million. Compared to the high cost of introducing CAA's 137 Proposal, it is interesting to note that the introduction of the AIRCARE™ Programme is being part-funded by MAF's Sustainable Farming Fund.

In the last three years there has already been a significant culture change in the fixed wing agricultural sector. For the first time in the 62 year history of Agricultural Aviation, the industry has just gone three years without the loss of a life. A chart measuring Ag fatal accidents and the trend line appears following this letter. This point goes completely without acknowledgement in the RIS and in our view this is the point that should be highlighted to the Minister. Something significant has happened in the aerial Ag industry over the last three years.

Food for thought.

We trust you find this comment useful. NZAAA is willing to engage with you on any matters raised.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'John Sinclair', with a stylized flourish at the end.

John Sinclair

NZAAA Executive Officer

Ag Fatal Accidents

