AERIAL APPLICATION ASSOCIATION OF AUSTRALIA LTD.

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AAAA Submission on CAO 48.1 / Part 137Q

Introduction

Fatigue management regulation has been needlessly complex for aerial application operations.

This has been compounded by the inconsistent application of rules across rotary and fixed wing aerial application, with only fixed wing being covered by the requirements of CASR Part 137, and helicopters being captured by the requirements of the CAO 48 and 48.1 (Instrument 2013).

AAAA strongly supports both rotary and fixed wing operations being regulated by CASR Part 137 and the fatigue management aspects of that regulation being covered by a simplified but still robust approach to revised regulations in Part 137Q.

Given that CASA has promulgated a range of exemptions to exclude aerial application from the requirements of CAO 48.1 (for example see: CASA EX 92/16), and that CASA has also accepted the recommendation of the independent review to manage fatigue in aerial application through CASR Part 137Q, it is clear that there is considerable common ground to now improve CASR Part 137Q.

CASA has already agreed to incorporate rotary aerial application into Part 137 as part of the post-implementation process (Part 137 was introduced in 2007) and the essential hand-off between Parts 137 and 138.

This represents a significant resolution of the current problems caused by the discordant classification of operations issues created by the use of different terms under CAR 206 and Part 137 and rotary aerial application / agriculture being covered by a range of disparate regulations rather than a centralised approach through Part 137.

AAAA has developed a detailed approach to the improvement of CASA part 137Q based on years of safe practice.

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AAAA strongly recommends CASA agree to a review of CASR Part 137Q to remove the current complexity that remains an impediment to safety.

AAAA would like to move forward on two fronts:

1) the establishment of a much simpler prescriptive flight and duty time regime (see proposed regulation below) and

2) CASA approval of a Standard FRMS for the sector that would combine with AIMS accredited companies should they wish to avail themselves of the FRMS.

Risk profile

Aerial application is characterised by seasonal variability that ensures that in any 12 month period there is ample time for rest, free from all duty.

In addition to the traditional industrial relations requirement for 4 weeks of annual leave provided under the National Employment Standards and additional leave under the Air Pilots Award 2010, aerial application pilot's workload is highly dependent on seasonal variation and demands, as well as the day-to-day meteorological conditions that will permit operations such as spraying and fertilising.

This provides ample opportunity for fatigue management options that may not be available to pilots operating under rostering conditions that are not completely weather dependent.

For example, aerial application is generally organised around seasons, such as wheat (winter work), cotton or rice (summer work) or firebombing (summer work). Between seasons there are generally many weeks with no work.

Within any season and within crop types there are also significant highs and lows of work driven by crop development, pest pressure, rain events and disease outbreaks.

In addition to seasonal variation, the operational demands of aerial application are such that operations and consequently duty, are entirely dependent on suitable daily/weekly weather conditions.

Weather that can result in cancellation of a day's operations includes but is not limited to:

- too much wind (above 20km/h for example for spray drift management)
- too little wind (below 3km/h for example for spray drift management during a surface temperature inversion)
- rain or showers (that wash chemical off the target)
- temperatures above 30 degrees (plant physiology and chemical uptake)
- sunlight (due to phototoxicity from some chemicals)

Consequently, regulatory flexibility is very important to aerial application because of the considerable opportunities for appropriate fatigue management in an aerial application setting.

Aerial application is conducted by both fixed wing and rotary wing aircraft. The sector has a proven track record of safely managing fatigue through exemptions and through regulations that are more flexible and practical than CAO 48.1 (eg Part 137Q, and the earlier CAO 48)

Most aerial spraying and other agricultural applications - that is the significant majority of work of the sector - is carried out away from built-up areas, segregated from people, and generally lower than most other airspace users.

Other operations included in aerial application include firebombing, and these operations are often carried out in rural or remote areas such as national parks. Where they are not, an additional risk mitigation consideration is that all fire operations are under the control of State fire agencies and NAFC and have a high entry-level requirement of safety management systems and experienced pilots.

In addition, almost all operations are single pilot in highly specialised aircraft designed for the purpose, and generally include significant risk mitigation interventions including high crash worthiness of special purpose airframes, fitment of wire cutters, multi point harnesses, the almost universal wearing of flight helmets and the recent introduction of airbags.

Fatigue awareness and management training is also provided to the sector by AAAA through their science-based and regularly updated Wires, Human Factors and CRM course.

More information on the risk-limiting features of the sector can be found in the joint AAAA / CASA Sector Risk Profile.

International comparisons

While AAAA believes there are safety benefits and sound risk management in establishing a simple and robust fatigue management system in Australia for aerial application operations, AAAA notes that there are NO flight and duty time limitations on agricultural operations (they have a different classification of operations to Australia) in the US and a comparable safety record.

Prescriptive Limitations versus FRMS

AAAA believes that both prescriptive limitations and Fatigue Risk Management Systems have a place, but that it remains important to permit flexibility and choice between the two approaches that may reflect the capabilities, culture, needs, size and complexity of different operations.

For smaller operations with only one or a few aircraft, prescriptive limits may be more attractive because of simplicity.

For medium or larger operators, there are likely to be significant benefits of moving to an FRMS

approach, especially where the FRMS is buttressed by an SMS.

For aerial application companies in Australia of differing sizes and complexity, AAAA has developed the AIMS program that is recognised by CASA in the Sector Risk Profile. CASA has already undertaken an independent assessment of the AIMS program and recognised that the program provides a higher level of safety.

AAAA has also already developed a Standard FRMS for the sector which was proposed to CASA in 2012 but which was dismissed out of hand without any significant discussion of the different risk profile of the sector or opportunities for improvement.

A key stumbling point was CASA demands for significant sector-wide data to drive a closed loop feedback component of the FRMS - demonstrating a significant lack of knowledge of the sector, AAAA's role and resources and the ability of individual companies to manage this process well.

AAAA believes that CASA should introduce a simplified GA FRMS regulation and also permit the recognition of the AAAA Standard FRMS for those aerial application companies that have a functioning SMS (such as the AAAA AIMS program).

Proposed New CASR Part 137Q

The following details provide a starting point for a simpler approach to CASR137Q.

Importantly, this approach is robust, supported by both science and a long history of safe practice, and is relatively easy to understand, implement, record and monitor.

AAAA believes a regulation such as this would provide a useful model for the future management of fatigue in non-complex sectors.

There are approximately 100 fixed wing operators, and 30 rotary operators conducting aerial application.

If the proposed regulation is not able to be made in a relevant timeframe, it will be essential to create a new exemption that does the same work.

It is important to note that the current exemption that moves aerial application fatigue management out of CAO 48.1 and back to CASR Part 137Q **is due to lapse on the 31 May 2019.**

Consequently, CASA will be required to undertake work in this space before that time – with the likely outcome being a new exemption to replace CASA EX 92/16 that hopefully includes the new fatigue management regime proposed here.

Proposed Interim Exemption / Regulation Part 137Q

Applicability

The scope of this regulation is for all aerial application operations as defined in Part 137 but conducted in either fixed wing or rotary wing aircraft. Consequently, the definition of aerial application in Part 137 (see below), is amended in this exemption so that 'aeroplane' is amended to 'aircraft' to provide coverage for rotary wing operations.

137.010 Definitions

In this Part:

***aerial application operation** (or application operation) means:*

(a) a flight that is carried out by an aeroplane/aircraft to apply application material; and

(b) a flight by an aeroplane/aircraft that is for, or partly for, 1 or more of the following:

(i) inspection of a work area;

(ii) pilot training or checking relating to a flight mentioned in paragraph (a);

(iii) training of a crew member other than the pilot;

(iv) travel from a landing area to a work area and back;

(v) the carriage of a passenger specified in regulation 137.135 for a purpose set out in that regulation; and

(c) preparation for any activities mentioned in paragraphs (a) and (b).

Validity

This exemption should remain valid until such time as Part 137Q is amended to incorporate the content and intent of this exemption.

Exemption

This exemption exempts AOC holders who hold approvals to conduct fixed wing aerial application operations in accordance with CASR Part 137 or rotary wing aerial application, aerial agricultural or firebombing operations from compliance with all requirements of CASR 137 Part Q, and CAO 48.1 instrument 2013, and replaces those requirements with the requirements of Schedule 1 and the Conditions of Use below.

Conditions of Use

Notification, Record Keeping and Data Requirements

AOC holders who utilise this exemption must:

- Before commencing use of the exemption, have an internal system of accident and incident reporting, analysis and response that considers fatigue as a contributing factor

and that takes appropriate corrective action. Accreditation under the AAAA AIMS program would be accepted as compliant.
- Before commencing use of the exemption, notify all pilots working in the company of the proposed use of the exemption
- Before commencing use of the exemption, provide a company briefing session for all pilots on the use of the exemption, including record keeping requirements
- Before commencing use of the exemption, include a copy of the exemption on the company noticeboard, in the company operations manual or Schedule of Differences if using a AAAA Standard Operations Manual
- Notify AAAA in writing when:
  - Commencing operations under the exemption.
  - Any fatigue related incidents or accidents occur and/or corrective actions taken
  - Terminating use of the exemption
- The company Chief Pilot (HOFO) and pilots must have completed relevant human factors training with a fatigue management component during the previous two years. The AAAA Wires, Human Factors and CRM course would be accepted as compliant.

AAAA has agreed to provide CASA with:

- De-identified data regarding the use of the exemption as above
- De-identified numbers and types of incident or accidents related to fatigue that are reported to it
- De-identified information regarding corrective actions taken in response to a report of an incident or accident related to fatigue.

Schedule 1

The following flight time limits will apply:

Annual limit
No annual flight time limit: An annual limit bears no relevance to fatigue management and creates the situation of well rested pilots not being able to earn a living because of flight times from 12 months previous.

Monthly Limit
170 hours flight time limit with a reset provision.

Monthly Resets:
If a pilot attains 170 hours flight time within 30 days, following 72 hours (3 days) free from all duties, the 170 hours limit is reset to zero.

The reset provision can only be used for a maximum of 90 days from the commencement of the first 170 hour period.

Following three cycles of 170 hours as above, 5 consecutive days must be granted free from all duties.

If, at any time, a pilot has 5 consecutive days free from all duties, all provisions (including monthly, monthly reset, fortnightly and daily limits) are reset to zero.

14 day Limit
Within each 14 day period, a pilot must have a break that includes two cycles of approximately 8 hours sleep during a period free from all duty commencing with the start of the first sleep cycle to the conclusion of the 2nd sleep cycle.

(DRAFTING NOTE: This is based on AAAA's very successful experience of using a similar requirement over 25 years through exemptions and Part 137Q, but avoids the complexity and confusion of the current '36 hours free from all duty' requirement.)

Daily Limit
During any 24 hour period, maximum flight time shall be 15 hours.

If operationally necessary, the 15 hour limit can be extended by one hour if the pilot feels capable of continuing and the Chief Pilot agrees, having considered the circumstances.

If a pilot has achieved a rest period during the tour of duty, the maximum daily limit on flight time can be extended by 50% of the achieved rest time or to a maximum of 17hrs total.

If a pilot has achieved a sleep period during the tour of duty, the maximum daily limit on flight time can be extended by 100% of the achieved sleep time or to a maximum of 18hrs total.

Night operations
Night operation limitations are the same as day limitations.

(DRAFTING NOTE: This is based on the long term safety record of night application operations being superior to day operations. At least in part this is due to night application being conducted in target areas that are pre-surveyed, where hazards are limited and flying conditions (eg turbulence etc) can be significantly better than daytime summer conditions.)

Conducting other classes of operations
If a pilot is to conduct commercial operations in addition to concurrent aerial application operations covered by this exemption, the pilot must only conduct the flight if:

a) the pilot has had a minimum of 8 hours of sleep in the previous 24 hours and

b) the pilot's current flight time (on aerial application) has been less than 8 hours and

c) the proposed flight (other than aerial application) will be completed within a total daily

flight time of less than 12 hours.

ENDS

Appendix 1 - Proposed Fatigue Regs Comparison – Aerial Application – 2019

CURRENT RULES – CASR Part 137Q	PROPOSED new rules – CASR Part137Q
Annual Limit – Currently 1200 hours	Annual Limit - abolished
Monthly Limit – Currently 170 hours	Monthly Limit – 170 hours
	Monthly limit reset provision - take 3 days off (72hrs) and go again to 170 for no more than 3 consecutive months, followed by 5 days free from all duty. If 5 days off at any time, all limits reset to zero.
14 day limit – must have had 36 hours concurrent and free from all duties in last 14 days	14 day limit – break including 2 x 8r sleep periods - simplified for start/stop times
Off duty periods – various	Off duty periods – abolished
Daily limit – 14 hours +1	Daily Limit – 15 hours +1
Tour of duty extensions – various based on rest or sleep but limited by monthly and other limits including off duty periods	Tour of duty extensions – various based on rest or sleep to max 17/18 hrs
7 Day limit – Currently 98 hours	7 day Limit – abolished
3 Day limit – Currently 44 hours	3 Day limit – abolished
Other sector ops – highest requirements of other sector met	Other sector ops – 8 hrs sleep / last tour less than 8 hours / proposed tour less than 12