

10 November 2014

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Our Ref: S05-0012-2  
Your Ref: draft CAAP 48-1(1)

Dear Ian,

### **AIPA COMMENTS ON DRAFT CAAP 48-1(1)**

As you are aware, AIPA remains concerned about some aspects of the prescriptive Flight Time Limitations (FTL), particularly where we believe that the continuation of certain aspects of the Standard Industry Exemptions (SIEs) is lacking in both scientific and verified operational experience. We also remain concerned that there are a number of provisions that will, if used together, create a high fatigue risk in circumstances that we think are unlikely to be properly managed, monitored or analysed due to the residual focus of many operators on compliance rather than safety outcomes.

Nonetheless, AIPA welcomes the opportunity to offer comments on the Draft CAAP with a view to enhancing the overall industry knowledge of the complexities of managing fatigue risk.

The attached comments go largely to details in the document rather than a broader approach, since that seems to us to be the most productive outcome. While there may be some comments about rationale, they are primarily intended to prompt greater explanation by CASA within the CAAP as a means to reduce avenues for exploitation by those who seek out loopholes rather than true safety outcomes.

Overall, you and your team are to be congratulated on putting together a very useful and informative document that goes some way towards explaining both your intentions and reasoning in designing many of the provisions of the Instrument.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Shane Loney', is enclosed in a light blue rectangular box.

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Attachment: AIPA Comments on Draft CAAP 48-1(1)

## AIPA COMMENTS ON DRAFT CAAP 48-1(1)

### Cover Sheet

1. It may be useful to state that the CAAP does not cover Ultra-long Range (ULR) operations, which are operations involving flight times greater than 16 hours or duty periods greater than 18 hours and which require special considerations within an FRMS.
2. It may be useful to state that all references in this CAAP to CAO 48.1 are references to CAO 48.1 Instrument 2013. While the Instrument is included as the only CAO reference on page 2, we believe a more positive statement is necessary. AIPA expects that post-implementation monitoring and review will result in modification to this CAAP around mid-2016, thus removing any future ambiguity.

### Definition of Sleep Opportunity

3. Sub-paragraph a. requires an appropriate “and” at the end of sub-sub-paragraph v.
4. AIPA is concerned at the inclusion of the phrase “under normal circumstances” in sub-paragraph b. Nowhere in the CAAP is there any explanation of the abnormal circumstances under which an operator may interrupt a sleep opportunity without destroying the fundamental purpose for which it is designed. In fact, the second paragraph of sub-section C5.2 on page 46 states what seems to be the expected approach to all Appendices rather than just to Appendix 1. What was the intention behind the inclusion of this phrase in the definition?

### Paragraph 4.4

5. This paragraph would benefit from a statement that the existing FRMS guidance from ICAO and CASA describes a framework and a set of principles within which an operator needs to develop a rule set tailored to their operational environment. That rule set needs to reflect a proper risk management approach, thereby largely precluding legacy FTLs. All matters considered in this CAAP are just as relevant to a Tier 3 FRMS and as such CASA should more strongly urge operators to apply the content of this CAAP to any FRMS they may produce.

### Paragraph 5.2.1

6. AIPA is concerned at the inclusion of the phrase “in work contracts” in the dot point related to crew sharing options. It seems quite irrelevant how those options may be controlled and the mention of one option could be taken to exclude others. What was the intention behind the inclusion of this phrase in the dot point?

### Paragraph 5.4.3

7. Sleep inertia as a physiological and neurological phenomenon is of sufficient import to include a brief description in the CAAP of what it is - some people will not know and will be unable to source the references. From Ferrara & DeGennaro:

"Sleep inertia (SI) defines a period of transitory hypovigilance, confusion, disorientation of behavior and impaired cognitive and sensory-motor performance that immediately follows awakening."

### **Paragraph 5.5.2/3**

8. It is worth noting that the examples in Appendix E (presumably based on FAID and Dawson's sleep-wake model) only refer to a 48 hour history which we consider to be too short to provide sufficient sleep information. Additionally, it is inconsistent with paragraph 5.5.4 of the CAAP where you state that "...it is advisable to provide a 72 hour sleep history."

### **Paragraph 8.6.1**

9. AIPA suggests that the "soft"/"hard" limit approach is lacking in both clarity and strength. A statement such as:

"This will avoid the necessity to exceed the 'hard' limits prescribed in the operator's operations manual."

clearly implies that it is acceptable to exceed the hard limits, whereas we expect that hard limits shouldn't be exceeded! It should be made very clear that the Operations Manual limits are legal limits that replace the Instrument limits and that there is no option to operate somewhere in between, as has long been another industry 'custom and practise'.

10. If the Operations Manual limits are exceeded in any reasonably foreseeable circumstances, AIPA suggests that the consequences should be a mandatory incident report and, as a deterrent, an operationally expensive fatigue recovery procedure. We believe that the equivocation should be reduced or removed and suggest that your very own paragraph 11.4.4 is a much better approach which should be up front in the generic sections.

### **Paragraph 10.3**

11. We suggest adding:

"This is particularly pertinent for augmented operations and the subsequent in-flight rest planning."

### **Paragraph 10.4.4**

12. When using the phrase "the maximum FDP limit", it is not immediately clear whether "limit" means the duration or the endpoint of the FDP. Given the variations of durations and/or endpoints that subsection 10.4 raises, a cross-reference to Table 3 in Section C5 of Appendix C may avoid any misconceptions.

### **Paragraph 10.4.8**

13. AIPA notes the inclusion of "where possible" as an acknowledgement by CASA that it is physiologically and neurobiologically unlikely that an FCM, fresh from a well planned and executed sleep opportunity, can readjust their sleep schedule without chemical assistance to achieve the same level of alertness some 10-12 hours later when they would normally be reaching their circadian trigger for restorative sleep. We strongly recommend that CASA should formally identify this risk by adding:

“As it is likely that a delay of 10 hours or more may lead to significant circadian disruption for some FCMs, operations manual procedures should require both operators and FCMs to carefully reassess the fatigue risks associated with the new FDP.”

### Paragraph 10.4.9

14. While we agree with operators “paying particular attention to protecting and not interrupting FCMs’ sleep opportunities”, we note that this sentence highlights the inconsistency in the “Sleep Opportunity” definition mentioned above.

15. AIPA strongly suggests that this paragraph would benefit from the inclusion of the statement in Sub-section C5.2 on page 47:

- For delays of more than four hours – the operator, for rostering purposes, must assume that the FCM has been awake for a reasonable period and is accruing fatigue; **therefore, the maximum FDP limits are not appropriate without modification.** [emphasis added]

### Sub-section 11.5

16. It appears from the numbering sequence and the context that a heading has inadvertently been deleted or overlooked. We suspect that a specific heading may well have made the following paragraphs somewhat more cohesive.

### Paragraph 11.5

17. The paragraph numbering is inconsistent.

18. AIPA gathers that this was written to imply but never specifically mention that ‘duty time factoring’ is a logical but unresearched risk mitigator. Pragmatically, ‘duty time factoring’ for training was one of the few smart things to come out of the SIEs and the concept should be explicitly suggested rather than merely hinted at in this paragraph. It is used explicitly in Appendix F examples! At the very least, CASA should recommend that operators and FCMs, through the FSAG process, should consider factors for line training, base training and simulator training.

### Paragraph 11.5.1

19. This paragraph seems unnecessarily messy. Again, it appears to us that much is lost by an apparent effort to clarify that simulator time is duty but not flight duty. While it is true that a consequence of that classification is that simulator duty is not subject to FDP limits, the reality is that all training should be planned on the overall basis of good fatigue management. The example on page 40 is entirely consistent with that principle. While AIPA understands that the CAAP is about fatigue risk management during flight time, that focus should not be used to avoid giving sensible advice on directly related subjects.

20. Regardless of the need to provide operators with flexibility in meeting their operational and training requirements, AIPA offers the view that adding simulator training or checking before or after an FDP is bad training design for a number of sound scientific reasons and should be an exceptional circumstances practice only. Furthermore, simulator training should be planned as if it were a flight, particularly as fatigue-effected performance may well have adverse employment outcomes. We think CASA should say that.

21. The distinction between duty and flight duty and impact of duties taking place before and/or after a flight duty period is worthy of its own sub-section. The specific case of “positioning” is treated extensively in sub-section C8 of Appendix C, but we suggest an earlier exposition of the concept rather than burying it within this paragraph.

### **Sub-section 11.8**

22. We suggest this should be retitled as “Fatigue Management Training” to distinguish it from the broader topic.

### **Sub-section 12.3/Paragraph 12.3.1**

23. The phrase “the voluntary reporting system” presumably refers to an operator’s SMS, if they have one, although some reports may be mandatory in an employer-employee sense. Perhaps it may be clearer if called “the operator’s normal reporting system” or something similar. There is also an inconsistency where it is stated that “...fatigue reporting is essential...” but then refers only to a “voluntary reporting system”. It should be stressed that operators must make every effort through fatigue training to highlight the importance of accurate voluntary reporting.

### **Paragraph 13.3.4**

24. The characterisation of non-recreational private flying based on scheduling is unconvincing. We suggest it may be rewritten as:

“13.3.4 These operations are seen as more difficult to cancel or reschedule and generally involve more planning and operational complexity than traditional recreational flight. They therefore may have an effect on a subsequent FDP ...”

## **APPENDIX A**

25. It may be clearer to use “(see to this)” or use footnotes for the cross references, rather than just “(CAAP Appendix C)” or similar.

## **APPENDIX C**

26. “Aappendix” appears in line 1 on page 33.

### **Sub-section C1.1**

27. As mentioned earlier, AIPA finds the inclusion of “under normal circumstances” to be problematical. CASA’s intentions must be clarified.

28. In the example provided, CASA has effectively stated that, subtracting the 30 minutes transit time, the remaining 30 minutes is sufficient to eat, drink, use the toilet, wash and dress. AIPA challenges CASA to provide some evidence that supports that timing. In our experience, 30 minutes would be sufficient if the relevant meal is foregone (but provided onboard with sufficient sector length to consume) and none of the other functions are protracted. In our view, CASA has now set an undoubtedly inadvertent but largely indefensible benchmark in the absence of compensating arrangements which will leave FCMs with little choice but to sacrifice part of their sleep opportunity.

## Sub-section C1.2

### General

29. AIPA suggests that the timeline that is generated by the first dot point, known fairly commonly as a Precision Timing Schedule (PTS), should not be a unilateral decision by the operator but rather should be an outcome of the FSAG process.

30. We note that the second dot point does not raise the possibility of abnormal circumstances interruption to the sleep opportunity, despite the definitional issue.

31. We are also concerned at the import of the third dot point, given that paragraph 10.4.4 says:

“10.4.4 For delays less than four hours, the assumption is that **the FCM may be able to rest**; however, it is unlikely they will be able to return to sleep.” [emphasis added]

Our expectation is that as a minimum the operator should direct a “minimise” contact policy in such situations in order to positively maximise any restorative rest that may occur.

32. There are two instances of unfilled parentheses at the end of the third and fourth dot points.

### Appendix 5

33. There appears to be a word missing from the sentence beginning: “Operator must not schedule FDPs...” and presumably “Operator” should be in the plural.

34. That sentence and the example (but certainly not the ‘anxiety’ reasoning) is much more generally applicable than to Appendix 5 operations alone. There are examples industry-wide of these situations being the normal ‘custom and practise’ as a way of maximising available duty time and, collaterally, remuneration. This warning needs to be generic and placed in the General comments of sub-section C2.2 to ensure that required sleep opportunities are not sacrificed to depart on time where the PTS is inadequate.

## Sub-section C2.2

### Appendix 2

35. Is there a missing preposition in the first sentence?

36. AIPA suggests that the use of “should” in the sentence in the fourth paragraph:

“The operator **should** provide adequate fatigue training, as well as tools for staff to use when assessing their own alertness.”

is inappropriate given that it is an obligation under section 15 of the Instrument.

37. We also suggest that the first dot point on page 39 should give rise to a cross-reference to Appendix D as a means of clarifying the concept.

38. In the context of the example on page 40, we reiterate our position as set out in our comments on paragraph 11.5.1 above.

## Sub-section C3.1

39. The sentence:

“Verification of facilities for suitable resting and suitable sleeping accommodation may be required if the operator’s facilities have not been assessed by CASA before.”

appears to indicate a new role for CASA. Is CASA now going to start assessing commercial accommodation? While it may make some sense, AIPA is curious as to the head of power and the standards under which such activities might be conducted?

#### Appendix 2, 3, 4 and 6

40. AIPA suggests that the language used in the first three dot points on page 42 may benefit from restructuring along similar lines to this example:

- ensure that where there is access to suitable sleeping accommodation, the maximum FDP extension must not exceed four hours for Appendix 4 and 6, or four hours for Appendix 2 and 3 and that the maximum FDP must not exceed 16 hours

#### Appendix 5

41. Similarly, the first two dot points on page 43 might be better expressed along the lines of:

- a split-duty rest period (of at least three consecutive hours) at suitable sleeping accommodation must be achieved before the maximum FDP operations limit can be increased by not more than the duration of the split-duty rest period

### **Sub-section C4.2**

42. The restatement of the note to paragraph 5.3(b) of the Instrument raises the issue of the background to this assertion. AIPA suggests that the reasoning may not be well known and therefore the CAAP would benefit from a more detailed explanation as distinct from merely repeating the law.

43. AIPA suggests that the fourth dot point may be enhanced by adding an abnormal circumstances consideration:

- designation of a responsible person amongst the crew for scheduling in-flight crew rest and reassessing crew rest schedules in the event of unforeseen operational circumstances, particularly in-flight diversions or air returns

### **Sub-section C5.2**

#### Appendix 1

44. Given the unequivocal statement about interrupting a sleep opportunity in this case and AIPA’s concerns as expressed in our comments on the definition of “sleep opportunity” above, we believe that there is significant benefit to be gained by an explanation of how this context differs from that pertaining to the other Appendices.

#### Appendix 2, 3 and 4

#### Delays of less than 10 hours – with operations manual procedures

45. Third line – repeated periods.

46. AIPA applauds the concept of the second dot point, but reiterates our concern about FDPs that are delayed by more than 10 hours and the problems of trying to readjust a rest pattern preparatory to the new FDP. There are very clearly increased

risks due to circadian disruption and we believe that the CAAP fails to adequately stress the need to actively risk manage these delays.

#### Cancellations where sufficient notice is provided – with, or without, operations manual procedures

47. There appears to be something of a conceptual gap between cancellations and reassignment. The Instrument limits reassignment to a post-sign-on event while treating cancellation as an essentially pre-sign-on process. In many airline situations, the FDP is not cancelled entirely, i.e. no flying that day, but involves reassignment to another pattern. Arguably, interrupting the original sleep opportunity to reassign an FCM and providing a new sleep opportunity relevant to the new pattern is often preferable to waiting until the last minute. AIPA suggests that this issue might be a very useful and relevant example for the CAAP to expand upon.

### **Sub-section C6.1**

#### Reassignment

48. The second and third sentences need restructuring.

#### Extension

49. AIPA takes the view that the statement:

“The maximum FDP limits in all CAO 48.1 appendices are not designed with the expectation that there would be extensions.”

is an explicit statement that any extension increases fatigue risk. While the FCM remains the last line of defence, the reality is that he/she are not always best placed to properly assess or mitigate that increased risk. We therefore believe that CASA should make a very strong statement that the operator should independently and formally risk assess the proposed extension before approaching the crew.

50. Similarly, the final sentence on page 51 totally misses the point about risk management and shared responsibility. Merely checking FCM fitness is not enough. Crews will invariably be pressured for purely commercial (or personal) imperatives, yet are clearly identified in the science as not being the best judge. Operators must be forced to take responsibility for the initial plan to use an extension.

51. AIPA also takes the view that the second sentence on page 52 reflects an inappropriate risk identification: the risk of requiring an extension is a planning or procedural risk, whereas the real risk is the fatigue risk associated with extensions. We suggest this may be more accurately written as:

Rostering to planning, or ‘soft’ limits (see subsection 8.5 above) is a recommended practice to decrease the fatigue risk inherent in using extensions to the ‘hard’ limits in the operations manual.

### **Sub-section C6.2**

#### Appendix 1

#### Extensions

52. The penultimate sentence says:

“It is permitted for an extension to result in an FCM exceeding the limit in subclause 2.1 that requires all assigned FDPs be completed by 2200 (local time).”

It appears to us that the Instrument does not support this outcome. Paragraph 2.4 provides for exceedances only in accordance with Clause 3 and neither paragraphs 3.1 nor 3.2 provide relief from paragraph 2.1. The reason proffered is also problematical.

53. The last sentence says:

“This is because an extension is by definition not an assigned FDP.”

Where is ‘extension’ defined and by what legal construct can the expressed outcome be explained?

54. Perhaps more importantly, as discussed in recent correspondence between CASA and AIPA, the issue of assigned FDPs was aired, albeit in a slightly different context. In a letter dated 08 September 2014, CASA said:

“A person is rostered if Qantas provides a document or communication to a pilot setting out the times when the pilot is assigned to undertake duties.”

In our view, it is inescapable that the operator must undertake a range of processes in managing a delay or diversion, including compliance checking and authorising the FCMs to undertake a modified FDP that includes any extension. Furthermore, AIPA believes that it is legally tenable to treat an extension as an explicitly assigned FDP that is merely modified from that which existed at the start of the FDP.

55. In this specific context, AIPA is not concerned by the fatigue risk of the particular outcome but rather by the erroneous reasoning that logically applies to the other Appendices and which may lead to inadvertent compliance errors based on ‘mistake of fact’ induced by CASA.

#### Appendix 2, 3, 4 and 6

##### Reassignment

56. Prior to the making of the Instrument, ‘custom and practise’ in the industry under CAO Part 48 and the SIEs was that an FCM should be prepared to work to the maximum allowable FDP regardless of the length of the assigned FDP. AIPA understands that the Instrument introduces this new restriction but we wonder what CASA contemplates is the difference in rest planning that would be expected to occur between that for a 1, 5, 9 or 13 hour FDP?

57. The final paragraph in this section relates to what CASA has previously referred to as “mixed crewing” in the Qantas long haul context. While the scenario discussed is from non-augmented to augmented crewing, AIPA suggests that a change from augmented back to basic crewing may well be more problematical and should be included in the discussion. We also believe that it should be made clear if and at what point it is considered acceptable for a FCM to be added to the duty: i.e., prior to sign on for the original duty or at some point after the FDP has commenced.

##### Extensions

58. AIPA reiterates the concerns regarding the risk assessment of extensions as set out in paragraphs 49 and 50 above.

### **Sub-section C7.1**

59. The second paragraph relates to maximising the effectiveness of any rest/sleep opportunities that the FCM might have while being on standby. Given that the FCM should have completed an 8 hour sleep opportunity immediately before commencing the standby, what reasonable expectation is there that the FCM will be in an equivalent restorative sleep state at the 12 hour point as an FCM just starting a maximum permissible FDP under Appendix 2 of the Instrument?

60. Importantly, why is the CASA risk assessment of standby different from that of "delayed reporting time"?

### **Sub-section C7.2**

#### Appendix 2, 3, 4 and 6

61. In regard to the dot point at the top of page 57, AIPA recommends that an example of how the maximum FDP is calculated should be included to remove any doubt that may exist.

#### Appendix 5

62. AIPA notes that "continuous 24 hour periods of standby" would require justification by way of frequency of call-out data, in that such arrangements seem practical only where the likelihood of call-out is very low.

63. AIPA suggests that the second paragraph should include as main text the "split-duty" exception set out in note 2 at the end of the sub-section.

### **Sub-section C8.1**

64. There should be some clarity provided in this section of the CAAP about the difference between the provisions of paragraph 6.2 and the positioning clauses in the Appendices to the Instrument. It appears to us that paragraph 6.2 defines the allocation of the time spent positioning to either flight duty or duty, whereas the positioning clauses explicitly empower the FCM to choose not to embark on a positioning flight at the completion of an FDP.

65. The second paragraph on calculating displacement time perhaps should note that Section 7 of the Instrument relates solely to an FCM's location and takes no account of the manner or role they played in getting there.

### **Sub-section C8.2**

#### Appendix 2, 3, 4 and 6

66. There appears to be some confusion about the intent and content of the second paragraph (positioning before or after?) and consequently there appears to be considerable redundancy. This needs a substantial redrafting.

## **Sub-section C9.2**

### General

#### Acute Fatigue

67. The Nine hour minimum ODP provision example provided on page 60 highlights some practical implementation problems without really exploring them in any detail. AIPA considers this carry-over from the SIEs to be inappropriate fatigue management in many ways. Given that compliance is predicated on the outcome of the 'first' tour of duty, the rest reduction can only be activated at sign-off for that duty. Importantly, the rest reduction is also dependent upon the outcome of the second tour of duty, so the pilot(s) involved must be wary of delays and extensions that will effect compliance. As best as we are able to determine, there is no regulatory penalty for a compliance breach.

68. AIPA is greatly concerned about this provision and the example because it appears to suggest that CASA seriously believes that 30 minutes either side of the sleep opportunity is sufficient time to do everything? We have already expressed our views about verifying a PTS that seeks to justify using this provision in paragraph 28 above. Nonetheless, we cannot understand why there is no recognition of the time it takes to do these things. The PTS issue needs to be explicitly dealt with here in this CAAP.

#### Cumulative fatigue

69. AIPA notes that the 36 in 168 hour ODP requirement may be breached by a significant amount (worst case 10 hours two pilot, 12 hours three pilots and 14 hour four pilot) without penalty in the case of a call-out from standby, other than a corresponding reduction at the end of the following week. While we recognise that frequency of call-out will vary with the operator, we suggest that the CAAP should recommend that standby should not be allocated where the projected end of the standby period coincides with the end of the 36 in 168 hour compliance window given the risk profile.

### Appendix 2

#### Acute Fatigue

70. AIPA reiterates our position on reduced rest.

#### Cumulative fatigue

71. AIPA notes that paragraph 10.5 of the Instrument has the effect that any delayed reporting time or reassignment requires compliance checking before the FCM can be allocated to the modified FDP. We also believe that it is a consideration for extensions and call-outs from standby, subject to legal confirmation, on the basis that both events lead to new FDP assignments. The CAAP would be enhanced by specific treatment of these issues.

72. We also note that the CAAP would benefit from an explicit statement about how the days are calculated for the purposes of paragraph 10.6, presumably from midnight on the day preceding the day of the flight since the mention of days means whole days as defined in the Instrument.

## **APPENDIX D**

### Scenario 3

73. In the penultimate paragraph on page 73 there is a reference to a “concession” of 12 hours. We suggest the word “credit” may be more appropriate.

74. On the last part of the paragraph on page 74, there is a reference to “48 hours” which we think should be “36 hours”.

### Scenario 4

75. AIPA suggests that a new Scenario 4 may be instructive in terms of the geographical coverage that is possible while remaining acclimatised. The suggested scenario works in winter but not in summer due to Daylight Saving in Australia:

The original location is Adelaide. In winter, Perth is 1:30 earlier than Adelaide so on arrival Perth I am acclimatised to Perth. If I depart Perth for Urimqi in Western China, I arrive acclimatised because Urimqi is the same time as Perth (due to China being a single time zone, although at 87.5E Urimqi would normally be at least 2 hours different from Perth). If I then fly 2820 nm to Narita, the time is only 1 hour difference from Urimqi and I remain acclimatised. If I then return to Perth or ADL, I am acclimatised to either destination.

In summer, Perth becomes 2:30 earlier and the 36 hour clock to an unknown state of acclimatisation begins at the start of the FDP in Adelaide.

## **APPENDIX E**

76. AIPA notes that the sleep history is only 48 hours, rather than the CAAP recommendation of 72 hours. Some commentary may be useful.

## **APPENDIX G**

77. AIPA notes that the sleep history is only 48 hours, rather than the CAAP recommendation of 72 hours. Some commentary may be useful.

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