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## 230626 - S155 COMCARE WH&S INFORMATION AND DOCUMENTATION

### References:

- A. REFERENCE A - 230623 - Email - <sup>s47E(c)</sup> - S155 Comcare WH&S information and documentation
- B. REFERENCE B - AAP 6734.001 Defence Aviation Safety Manual (2017).
- C. REFERENCE C - 2017 Workplace Policy and Risk Management
- D. REFERENCE D - 230626 - 2017 2FTS Daily Flying Program Extracts
- E. REFERENCE E - 230628 - 2023 2FTS Daily Flying Program Extracts
- F. REFERENCE F – 2023 Workplace Policy and Risk Management
- G. REFERENCE G - 111189 - Flying Supervisor Course - LMP Vers 2.3 Approved 20 Feb 23
- H. REFERENCE H - DFSB Aviation Safety Officer Courses [Pages - Welcome \(defence.gov.au\)](#)
- I. REFERENCE I – PC/9A Maintenance Support Contract V310152 – Attachment A Part1 Statement of Work Appendix 1 – PC/9 Operations Program – 2FTS
- J. REFERENCE J – Contract No <sup>s47E(d)</sup> Annex F to Attachment A, Rate of Effort

**TASK:** Provide information and / or documents regarding the alleged operation of the Department of Defence (Defence) Royal Australian Air force (RAAF) aircraft outside of the safe operating hours recommended by the RAAF safety manual (the safety manual) (however described), at RAAF Pearce in Bullsbrook (the workplace) during 2017.

### SECTION A: NOTICE MC00030706-NT01

1. Provide written responses to the following questions:

- a) What were the recommendations of the safety manual regarding RAAF training flight hours at the workplace in 2017.

REFERENCE B - AAP 6734.001 Defence Aviation Safety Manual (2017)

- This Reference has been used as it was the current Defence Aviation Safety Manual for the duration of 2017. AL4 (amendment) was published in 2015, however, when AL7 was published in Jun 17, AL4 was the published amendment for Section 3, Chapter 07, Annex D.
- The recommendations of the safety manual regarding RAAF training flight hours at the workplace are detailed below:

[AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3 Chapter 07 Annex D, para 22a-e](#)

22. Reliance on prescriptive hours of duty-rest periods does not guarantee that one is free from fatigue-related risk. After the application of limits, there may be further need for executives to manage fatigue risk, particularly where new schedules or operations are planned, or where operations move outside the published limits. Commanders and managers should consider, at a minimum, the following factors when managing the risks associated with fatigue:

- a. Scheduling and hours of work (e.g. consecutive night shifts, long hours in a single duty period or across a duty cycle, prolonged and/or regular periods of separation, short breaks within duty periods, inadequate recovery periods between duty periods and duty blocks, duty start/finish between 2200hrs and 0600hrs and irregular shift scheduling).
- b. Commuting time to and from work.
- c. Individual and non-work factors (e.g. lifestyle, home environment and health).
- d. Task related factors (e.g. workload, repetitive or monotonous work, sustained and/or complex physical or mental effort, length/complexity of flying mission).
- e. Work environment factors (e.g. adverse work conditions such as heat, noise, stress, tempo and organisational climate).

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AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3, Chapter 07, Annex D, para 24-25a-o

**Scheduling and Rostering**

**24. Disruptive Schedules.** The impact of consecutive night duties, early starts and duty transitions provides a strong argument for additional fatigue management measures. For example, there is evidence to suggest duty periods that either begin or finish during the primary window of circadian low (between 0200 and 0600) have a higher potential of fatigue and increased requirements for recovery. Likewise, incorporating an intervening night's sleep between day/night and night/day duty transitions is recommended.

**25. Shift Design.** There is no 'optimal' shift schedule or design. There is considerable disagreement in the scientific literature, based mainly on civilian sector research, about the timing and duration of shifts, speed and direction of shift rotation, and flexibility of shift systems. Nevertheless, the list below provides some useful guidelines for developing shift schedules that are 'human-centred':

- a. Avoid any schedule that is not tied to the 24 hour circadian cycle.
  - b. Allow a major rest/sleep period within every 24 hours.
  - c. Schedule the main rest period for the same time each 24 hour period.
  - d. Attempt either to allow at least a week on each shift before a rotation, or limit night shifts to only one or two consecutive nights (the latter is especially important for individuals who appear 'night shift intolerant'). Longer rotation periods are best if optimum performance is the primary priority because the body clock is allowed to adapt to the new schedule. The rationale for a one or two night rotation period is that the body clock has only just begun its adaptation and should readjust to the day shift relatively quickly and with few adverse side-effects. In addition, short night shift rotations generally provide for a more balanced social life and contribute to perceptions of equity among the pool of shift workers.
  - e. A span of successive night shifts should be limited to six for shifts of up to eight hours long, four for shifts of eight to ten hours long, and two for shifts of ten hours or longer. Wherever possible these limits should not be extended.
  - f. During periods of critical work demands, attempt to provide a 10 hour rest/non-work period each 24 hour period (this generally allows for a six to eight hour period for sleeping, depending on commute times). An eight hour rest period normally will only allow up to six hours of sleep which is below the recommended amount.
  - g. Avoid daily or continuously rotating schedules (those who advocate rapidly rotating shifts tend to do so mainly for social considerations).
  - h. Forward or clockwise shift rotation (morning to afternoon to night) is favoured as it allows longer rest intervals and parallels the body's natural tendency to extend past a 24 hour cycle. (Refer Footnote 1)
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- i. When possible, do not commence morning shift before 0700 hours to avoid beginning work during the circadian trough and to maximise restorative sleep.
  - j. A span of successive morning or day shifts that start before 0700 should be limited to four, immediately following which there should be a minimum of two successive rest days. Wherever possible these limits should not be extended.
  - k. Shift length should be determined by the physical and mental characteristics of likely duties. Hours should be reduced for highly complex and demanding tasks (such as developing operational orders for complex and unanticipated events).
  - l. When possible, program short nap periods into night shifts. There is need for education about napping if this strategy is to be effective. Similarly, there may need to be a change in organisational culture if the practice of napping in the workplace is to be accepted.
  - m. Set shift rosters ahead of time and avoid sudden changes to allow workers to plan leisure time.
  - n. When possible, offer alternatives to members who may have difficulties adjusting to working hours.
  - o. When possible, consult with members and design shift rosters that will enable workers to meet both work and personal commitments.

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- The individual and organisational responsibilities are detailed below:

AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3, Chapter 07, Annex D, para 7-8

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| <p>7. Individual responsibilities with respect to the management of fatigue include:</p> <ul style="list-style-type: none"><li>a. arriving at work in a fit and rested state so that there is a reasonable expectation of being adequately alert throughout the duty period,</li><li>b. communicating fatigue-related safety and performance concerns with work peers and supervisors,</li><li>c. reporting all fatigue-related safety incidents,</li><li>d. being aware of fatigue and how to counter it in the workplace, and</li><li>e. identifying and managing fatigue-related hazards when encountered during a duty period.</li></ul> <p>8. Organisational (commanders and managers) responsibilities with respect to the management of fatigue include:</p> <ul style="list-style-type: none"><li>a. the assessment, monitoring, and reactive management of fatigue-related hazards;</li><li>b. developing policies, procedures and practices that manage fatigue-related risks;</li><li>c. ensuring safe work practices, such as sensible work schedules;</li><li>d. encouraging and incorporating the participation of personnel in the development of workplace policies, procedures and practices; and</li><li>e. providing tailored information and training in relation to the management of fatigue.</li></ul> |
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b) Were RAAF training flights being operated between 22.00hrs and 06.00hrs at the workplace in 2017 and why?

REFERENCE D: 230626 - 2017 2FTS Daily Flying Program Extracts

- Yes – RAAF training flights were operated between 2200 and 0600 at 2FTS in 2017.
- A total of 181 flights were planned with 130 conducted between 2200 and 0600 in calendar year 2017 at 2FTS. Of note, no flights were planned or conducted prior to 0600 in the morning. Of the 181 flights conducted, 124 were conducted between 2200 and 2300, with 57 conducted between 2300 and midnight.
- Reference D contains screenshots extracted from ULTRA FlightPro which is the programming tool and record management software used by Defence to manage and record the daily flying program.
- The flights included:
  - Training flights for trainees as part of a ‘curriculum event’ on advanced pilot course
  - Staff continuation training flights to support trainee curriculum events
  - Staff continuation training flights to achieve instructor flying currency requirements

230626 – 2017 2FTS Daily Flying Program Extracts

Training Flights and Personnel Working or Planned to Work between 2200-0600 hours in 2017						
Month, 2017	Training Flights	Staff Continuation Training Flights	Flying Supervisor	Training Flights – Planned but not flown	Staff Continuation Training Flights – Planned but not flown	Flying Supervisors – Planned but not required
Jan	6	-	2	6	-	1
Feb	41	8	16	1	-	-
Mar	-	-	-	-	-	-
Apr	23	3	7	-	-	-
May	34	2	7	7	-	-
Jun	-	-	-	-	-	-
Jul	15	4	7	15	-	1
Aug	19	3	8	4*	3*	7
Sep	-	-	-	-	-	-
Oct	18	5	9	11	1	1*
Nov	-	-	-	3	0	2
Dec	-	-	-	-	-	-
<b>Total</b>	<b>156</b>	<b>25</b>	<b>56</b>	<b>47*</b>	<b>4*</b>	<b>12*</b>

\* = this is the minimum number for this cell. It is almost certain that the number would be higher. See raw data below for an explanation.

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- c) **What risk assessments were conducted in relation to RAAF training flights, flying between 22.00hrs and 06.00hrs at the workplace in 2017.**

**Note: the written explanation must include:**

- i) **What existing guidance, standards and/or assessments made by suitably competent person(s) Defence relied on to implement the associated control measures.**

**REFERENCE C: 2017 Workplace Policy and Risk Management**

- Reference C-1 is a collation of all hierarchical documents related to risk management of RAAF training flights and the operation of flights between 2200 and 0600 in the workplace in 2017.
- 2FTS held a risk register which is located in Reference C-2 – *2FTS MRP and RMP Risk Register*. There were a number of risk assessments conducted by 2FTS (Reference C-3 through to Reference C-6) that are reasonable to associate with RAAF training flights, flying between 2200 and 0600 at the work place in 2017. None of the identified documents contained any risk management or controls specifically for flying between 2200 and 0600 at the workplace in 2017, as they applied to all operating hours.
- ATW risk register and associated risk management files could not be found in the area that they should have been located on Objective as the 'Safety' folder was unable to be located. From the image below, it can be seen that the 2FTS structure has a 'Safety' folder, and the ATW structure is missing the 'Safety' folder.
  - Further investigation would likely uncover the risk management folder and any associated controls, however, there was not enough time to gather the data. The current Wing Aviation Safety Officer at Air Academy is the best person to locate the desired files if required.
- As no control measures were identified through the hierarchy of OIP (identified in Reference C-1), it is reasonable to imply that specific control measures for flying between 2200 and 0600 were absent. Control measures in Night Flying MRP and RMP at unit (2FTS) or higher headquarters (ATW) did not specify specific time constraints as they were applicable to all night operations.
- The lack of controls present for operations between 2200 and 0600 is due to the normal unit operating hours and guidance under Reference A. The normal flying operating periods for 2FTS were constrained within the hours specified at Reference H; with application at night from approximately last light for a maximum of five hours, with a contracted maintenance end of duty at 0100hrs. Aircraft were required to land one hour prior to cessation of maintenance, ie last landing by midnight. In accordance with the guidance within Reference A above, no specific policy was required for operations between 2200 and midnight outside of normal daily limits covered under broader MRP or RMP for day and night operations. See the response to question 'd' for more detail on policy.
- The controls in place across night flying in general from ATW would have been aligned with higher level OIP and provided over-arching guidance to unit OIP with examples listed below.
  - REFERENCE B - AAP 6734.001 Defence Aviation Safety Manual (2017)
  - REFERENCE C-7 - Joint Directive 24\_2016 - The Defence Aviation Safety Framework – FOUO
  - REFERENCE C-8 - AAP 8000.010 Defence Operational Airworthiness Manual
  - REFERENCE C-9 - DI (AF) OPS 01-04 Flying Hours Management Cancelled 2017

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- REFERENCE C-10 - 161031 - Instruction - ATW SI (OPS) 06-01 - Aviation Safety Management System
- REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits (31 OCT 16)
- REFERENCE C-12 - 2FTS SI (OPS) Combined - Published 18 Nov 15
- REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties
- REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management 7.0 (#24) (May 17)
- REFERENCE C-15 - 160704 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System (vU9552515)

2017 Workplace Policy and Risk Management – 2017 Objective Record Management folder structure ATW

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d) **What was the policy and or procedure regarding the hours of flight operation at the workplace in 2017.**

**REFERENCE B:** AAP 6734.001 Defence Aviation Safety Manual (2017)

**REFERENCE C:** 2017 Workplace Policy and Risk Management

**REFERENCE C-1 - 230628 - 2017 Workplace Policy and Risk Management**

**REFERENCE C-8 - AAP 8000.010 Defence Operational Airworthiness Manual**

**REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits (31 OCT 16)**

**REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties**

**REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management 7.0 (#24) (May 17)**

- Reference B extracts and are listed above in question 1. The main points can be found in the References.

[AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3 Chapter 07 Annex D, para 22a-e](#)

[AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3, Chapter 07, Annex D, para 24-25a-o](#)

- Reference C-1 -230628 – 2017 Workplace Policy and Risk Management identifies the following:
  - Reference *C-8 - AAP 8000.010 – Defence Operational Airworthiness Manual* contained the regulations and required that OIP must ensure ‘*crew duty limits are specified*’ and pointed to Reference B (above) which prescribed the policy and contemporary Defence aviation safety policy and risk management tools.
  - Reference *C-11 – ATW SI (OPS) 06-06 – Crew Duty Limits* only prescribed maximum and minimum limits for PC-9 operations (extract below). It did not describe duty period adjustments based on working start or finish times for the PC-9 aircraft, but did for the B300 (an aircraft also managed by ATW). Of note, the roles of the B300 allows variable response to tasks without contractual constraints and so consideration of operations between 2200 and 0600 is appropriate. In contrast, the contractually constrained operating windows of the PC-9/A flying training did not require this approach.
  - Reference *C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management 7.0 (#24) (May 17)* only prescribes normal crew days and normal duty periods (extract below). It refers to Reference *C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties* which only provides the daily routine during daylight hours and does not mention night routines (extract below).
- Reference I describes the contracted maintenance support hours of operation (AL15 of the contract document from 2019, however applicable to 2017). Normal maintenance operating hours were:
  - 0830 to 1700 Monday
  - 0800 to 1700 Tuesday – Thursday
  - 0800 to 1500 Friday.
  - Night Flying (when programmed) Monday – Thursday only, day start times until 0100.
- Flying programming was constrained within the above maintenance operating hours to conduct three day waves per day at 0900, 1200 and 1500. The only variance to this was under surge conditions the first wave could be brought forward to 0800. No flights occurred in the period prior to 0600.
- The end of flying programming was constrained within the normal maintenance working period, practically one hour prior, so concluding by midnight. Additionally, while not a formal

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policy, all training night flying was completed by 2300 in winter (due to 5 hours maximum night flying period post last light and commencement of night flying at 1800), or by midnight in summer due to broader fly-neighbourly considerations for local communities and base support services.

- Aircrew conducting flying operations complied with crew duty requirements as indicated under References C-11 and C-14, noting that the start time was adjusted to cater for a later finish time when night flying. As Reference A did not require consideration of circadian rhythm issues until after midnight, there was no specific policy required as PC-9/A did not fly at those times.

REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits - Annex A (all)

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ANNEX A TO  
ATW SI(OPS) 06-06

**ANNEX A: CREW DUTY LIMITS - SINGLE ENGINE TRAINING AIRCRAFT**

**Table 1: Crew Duty limits: Duty Period - single engine training aircraft**

Maximum Number of Consecutive Flying Days	Maximum Duty Period (h)	Minimum Rest Period (h)
12 d	11 h	10 h

**Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft**

Sortie Type	Limit							
	Daily		In 48 Hours		In 7 Days		30 Days	12 Months
	FH	Sorties	FH	Sorties	FH	Sorties	FH	Sorties
QFI/SCT/Other	6 h	4	10 h	7	21 h	18	65 h	550
UGRAD Student	4 h	3	7 h	5	14 h	10	40 h	NA

1. **Limits.** Single engine training aircraft flying operations are to be conducted IAW the limits in Table 1: Crew Duty limits: Duty Period - single engine training aircraft and Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft.
2. **Limit Extension:**
  - a. **CO - Duty Period limit:** may approve an extension of up to 60 minutes.
  - b. **OC ATW:**
    - (1) **Duty Period limit:** may approve an extension of up to an additional 60 minutes (ie, for a total increase of 120 minutes to the promulgated limit)
    - (2) **Flying Hour and sortie limits—non-QFI tasking:** may approve an extension for appropriate tasking (eg, Pearce to East Sale transit and Roulette deployment).
3. **Rest Period following extended Duty Period.** When an actual duty period exceeds the promulgated limit, any required rest period is to be increased by one hour for every hour or part thereof of the duty period exceedence.
4. **Following 12 consecutive flying days:** a 24 hour rest period is required before the next duty period.

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REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits - Annex B, para g

- g. **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and Table 6: Duty Period Adjustment - Planned Commencement Time - B300.

**Table 6: Duty Period Adjustment - Planned Commencement Time - B300**

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500-1359	No reduction
1400-1829	-2 hours
1830-0459	-3 hours

REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management, Para7-10

7. **Nominal crew duty day** The crew duty day commences from the time of arrival at work. In order to maximise the workday this should be either; just prior to morning brief, as stipulated in FlightPro, or one hour before taxi; whichever is most appropriate. Cessation of work is normally as per [2FTS SI\(ADMIN\) 5-1](#) or 30 minutes after aircraft shutdown taking into account the following limitations:

- a. The maximum normal crew duty day is 10 hours.
- b. FLTCDRs may approve up to 11 hours.
- 8. **Rest periods.** The limitations for rest periods are:
  - a. A minimum of 12 hours between crew duty days.
  - b. FLTCDRs may approve a minimum of 10 hours

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2FTS SI(OPS) 06-06

9. **Nominal duty periods.** Limitations of duty periods are as follows:
- a. The maximum continuous duty period is 10 days followed by a minimum of a 24-hr break.
  - b. FLTCDRs may approve 12 days continuous duty but this must be followed by a 48-hr break.
10. **Monitoring.** Staff and Student pilots are to monitor their own flying rates. Students are to advise their instructor if they are likely to exceed any duty limit contained in [ATW SI\(OPS\) 06-06](#). Notwithstanding the need for self-supervision, staff are to be aware of the flying rate and duty periods of their respective student(s).

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REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties, para 5+6

**Work Routine**

5 **Daily routine - staff.** The normal working day routine for 2FTS staff is to commence at 0750 H and ends at 1700 H (1500 H on a Friday). FLTCDRs may vary these times and Ultra will notify individuals of different start and cease work times if required. Members are encouraged to maintain a healthy work life balance, and when not required for tasking may vary these hours in consultation with their supervisor.

6 **Daily routine - students.** Students are to comply with the following routine on working days:

- a. Breakfast - As per meal times, OMA (living in students)
- b. Assembly - refer para 7 below
- c. Morning briefing - 0750 H
- d. Lunch - as required by the flying program
- e. Stand-down - 1650 H (1500 H Friday)
- f. Dinner - As per meal time, OMA (living in students)

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e) Is the operation of RAAF training flight aircraft outside of times recommended by the safety manual ongoing at the workplace?

- REFERENCE E: 230628 - 2023 2FTS Daily Flying Program Extracts
- REFERENCE F-2 - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021
- REFERENCE F-3 - DFSB Aviation Fatigue Management Guidebook
- REFERENCE F-4 - DFSB fatigue risk management chart – poster
- REFERENCE F-5 - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management
- REFERENCE F-6 - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System
- REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits
- REFERENCE F-8 - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)
- REFERENCE F-9 - 220516 - AE628 - CRP - PC21 Night Flying

- Yes – RAAF training flights were operated between 2200 and 0600 at 2FTS in 2023.
- A total of 49 flights were planned with 25 conducted between 2200 and 0600 in calendar year 2023 to date at 2FTS. No flights were planned or conducted prior to 0600 in the morning. Of the flights conducted, 17 were conducted between 2200 and 2300, with 18 conducted between 2300 and midnight. Reference E refers.
- The 2023 version of the safety manual (Reference F-2 DASM) does not contain fatigue management details as in previous versions (Reference B). Additionally the DASM does not prohibit operations outside the recommended times, noting that Military operations often require operating in this period. Of note, training in night flying is therefore a critical requirement for Defence. The Defence Flight Safety Bureau (DFSB) has published alternative Fatigue Management Guidance in Reference F-3 and F4.
- REFERENCE F-4 - DFSB fatigue risk management chart identifies the following possible options for risk management and controls:
  - Avoid start or finish times between 2200 and 0700
  - Considerations for those shifts working between 2200 and 0600
  - Reduced length of shift
  - Inclusion of deliberate risk management for planned operations between 2200 and 0600 to ensure the risk is being managed.

REFERENCE F-4 – DFSB Fatigue Risk Management Chart

WORK SCHEDULING & PLANNING – SHIFT WORK	Lower Risk	Moderate Risk	Higher Risk	POSSIBLE OPTIONS
1. Length of shift 2. Time of shift 3. Speed and direction of shift 4. Split shifts/variable shifts	1. 10 hours 2. Day shifts 3. Forward rotation (avoid late evenings) 4.	10 hours Afternoon shifts Backward rotation (if unavoidable) slower rotation (max 2-4 weeks) 13 hour periods	14 hours Night shifts	• Hours of work in a single shift; consider travel time to and from work • Reduce working hours or implement additional controls • Increase resourcing • Eliminate the use of extended hours for safety-critical jobs or activities • Control the length of shifts • Limit the use of duty extensions • Monitor hours of work • Offer alternative accommodation or transport at the end of overtime/long shift • Allow for naps during shifts • Allow at least a week on each shift before rotation • Use forward-rotating shifts • Provide rest days (opportunity for two consecutive night sleeps) • Improve the timing of shifts • Ensure exchange of shifts does not result in excessive hours • Eliminate use of split shifts • Avoid start or finish times between 2200 and 0700 • Where split shifts are used, arrange timing so sleep is not disrupted due to the times they are required to work • Ensure time for adequate communication at shift handovers • Set shift rosters ahead of time and avoid sudden changes of shifts to allow personnel to plan leisure time • Control shift swapping • Avoid any schedule not tied to the 24-hour circadian cycle
WORK SCHEDULING & PLANNING – NIGHT WORK	Lower Risk	Moderate Risk	Higher Risk	POSSIBLE OPTIONS
1. Shift end (for those working eight hours or more between 10.00pm and 6.00am) 2. Length of shift 3. Sequential night shifts 4. Period of non-work following a sequence of night shifts 5. Breaks during work – frequency 6. Breaks between work periods – recovery time  NOTE: Night shift in this chart refers to 12 hours (1900 to 0700)  An example of a rotating defence roster • 0700 to 1600 • 1600 to 2359 • 2359 to 0700	1. After 10.00pm 2. 8 hours 3. Adequate and regular breaks 4. Adequate time for sleep, travel, meals, etc.	10 hours 6 or more 8 hour shifts, 4 or more 9-10 hour shifts, 2 or more 10+ hour shifts Less than 48 hours Insignificant or no breaks Inadequate time for sleep, travel, meals, etc.	12 hours 48 hours More than 48 hours	• Night shifts, including the number of consecutive night shifts • Limit the use of nightshifts for particular jobs or activities • Schedule complex tasks for daytime • Schedule work for hours when the risks may be lower – for example, complex and safety-critical tasks (do not schedule tasks between 2am and 6am and, to a lesser degree, between 2pm and 4pm) • Avoid scheduling higher risk tasks on the first night of a night shift cycle. If unavoidable, when planning the task consider additional controls such as job rotation or additional rest breaks • Minimise routine administrative tasks to ensure personnel can focus on core duties during their shift • Allow for naps during shifts • Limit the number of consecutive night shifts worked – no more than four night shifts in a row refer note • Ensure that rosters allow for at least two full nights' sleep after the last night shift • Arrange shifts so that day sleep is adequate • Use a forward-rotation shift system (ie moving to afternoon, afternoon to night) • Improve the order, speed, direction and length of rotation of the shift cycle • Except for emergencies, give at least 24 hours notice before night work. • Provide a longer period of notice so that personnel have time to adjust their activities

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- Reference E contains timings of the flights within the 2200 to 0600 period across 2023 via screenshots extracted from ULTRA Flight Pro which is the programming tool and record management software used by Defence to manage and record the daily flying program. Flights in the period included:
  - Training flights for trainees as part of a ‘curriculum event’ on advanced pilot course
  - Simulator training flights for trainees as part of a ‘curriculum event’
  - Staff continuation training flights to achieve instructor flying currency requirements

REFERENCE E - 230628 – 2023 2FTS Daily Flying Program Extracts

Training Flights and Personnel Working or Planned to Work between 2200-0600 hours in 2023

Month, 2023	Training Flights	Simulator Training Flights	Flying Supervisor	Training Flights – Planned but not flown	Simulator Training Flights – Planned but not flown	Flying Supervisors – Planned but not required
Jan	17	4 <sup>^</sup>	3	2	-	1
Feb	10	8	6	3	-	2
Mar	14 <sup>^</sup>	4	4	19	1	4
Apr	2	-	1	-	-	-
May	-	-	-	-	-	-
Jun	-	-	-	-	-	-
<b>Total</b>	<b>33</b>	<b>16</b>	<b>14</b>	<b>24</b>	<b>1</b>	<b>7</b>

<sup>^</sup> = this denotes a staff continuation training event that has been added to this cell in order to reduce the number of columns required for this table. See raw data below detailed breakdown.

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**Note: If the operation of aircraft outside of times recommended by the safety manual is ongoing, the written explanation must include:**

- i) What assessments were conducted to identify potential hazards and risks associated with RAAF training flights occurring outside of times recommended by the safety manual;**
- No risk assessments or control measures were identified across the hierarchy of OIP (identified in Reference F-1) that specifically discusses training flights between 2200 and 0600. Control measures present in Night Flying MRP and RMP at unit (2FTS) and higher headquarters (Air Academy) do not specify specific time constraints as they are applicable to all night operations.
  - Crew duty limitations are not specific to start and finish times for PC-21 as they relate to a standard operating window for the training system, aligned with the PC-21 contracted 14 hour support window (Reference J Part 3.2.1 a. and b. refer). Similar to the PC-9/A contract and as detailed in previous answers, support is provisioned from 0800 to 1700 Monday to Thursday, or until 0100 when night flying. Additionally, similarly to the previous PC-9/A contract, aircraft do not take off prior to 0800 or land after midnight to avoid contract penalties and maintain local community support relations.
  - The broader context of PC-21 operations at 2FTS, coupled with the broader and more general controls in place across night flying in general from Air Academy are aligned with higher level OIP and provided over-arching guidance to unit OIP with examples listed below
- REFERENCE F-2 - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021
  - REFERENCE F-3 - DFSB Aviation Fatigue Management Guidebook
  - REFERENCE F-4 - DFSB fatigue risk management chart – poster
  - REFERENCE F-5 - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management
  - REFERENCE F-6 - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System
  - REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits
  - REFERENCE F-8 - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)
  - REFERENCE F-9 - 220516 - AE628 - CRP - PC21 Night Flying

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- ii) What controls have been implemented to prevent and/or mitigate each of the identified risks;
  - Controls are in place to manage fatigue, the broader rate of effort and maximum crew day as per the following information. Of note, specific controls are not in place for flying operations within the PC-21 operating period from 2200 to midnight for night flying as recommended in the DASM. This is now a recognised gap in the risk controls and Air Academy will review and update risk documentation.
    - REFERENCE F-7 – 230627 – AirA SI (OPS) 06-06 – Crew Duty Limits prescribes maximum and minimum duty limits for PC-21 operations (extract below). It does not describe adjustments to duty periods based on working start or finish times for the PC-21, but does for the B300 and 100SQN. Of note, the roles of both B300 and 100SQN allow variable response to tasks without contractual constraints and so consideration of operations between 2200 and 0600 is appropriate. As per previous responses, the contractually constrained operating windows of the PC-21 flying training has not required this approach; as noted above consideration will be given to the 2200 to midnight period by AirA.

REFERENCE F-7 – 230627 – AirA SI (OPS) 06-06 – Crew Duty Limits - Annex A, para 1 - 4

ANNEX A TO AirA SI (OPS) 6-6 ANNEX A: CREW DUTY LIMITS - SINGLE ENGINE TRAINING AIRCRAFT								
Maximum Number of Consecutive Flying Days		Maximum Duty Period (h)				Minimum Rest Period (h)		
12 d		11 h				10 h		

Table 1: Crew Duty limits: Duty Period - single engine training aircraft

Sortie Type	Limit							
	Daily		In 48 Hours		In 7 Days		30 Days	12 Months
	FH	Sorties	FH	Sorties	FH	Sorties	FH	Sorties
QFI/SCT	6 h	4	10 h	7	21 h	18	85 h	550
Other								
UGRAD	4 h	3	7 h	5	14 h	10	40 h	NA
Trainee								

Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft

- Limits.** Single engine training aircraft flying operations are to be conducted IAW the limits in Table 1: Crew Duty limits: Duty Period - single engine training aircraft and Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft. PC-21 FTD time counts towards a pilot's flying hours and sortie limits.
- Planned Duty Period.** For planning purposes, a duty period will span from 60 minutes before first lines time to 30 minutes after the last lines time.

**Limit Extension:**

- CO - Duty Period limit: may approve an extension of up to 60 minutes.
- OC AirA:
  - Duty Period limit: may approve an extension of up to an additional 60 minutes (ie, for a total increase of 120 minutes to the promulgated limit)

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REFERENCE F-7 – 230627 – AirA SI (OPS) 06-06 – Crew Duty Limits - Annex C, para 11 g

- g. **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and [Table 6: Duty Period Adjustment - Planned Commencement Time - B300](#).

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500–1359	No reduction
1400–1829	–2 hours
1830–0459	–3 hours

Table 6: Duty Period Adjustment - Planned Commencement Time - B300

REFERENCE F-7 – 230627 – AirA SI (OPS) 06-06 – Crew Duty Limits - Annex E, para 6

6. **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and [Table 11: Duty Period Adjustment - Planned Commencement Time – 100SQN](#).

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500–1359	No reduction
1400–1829	–2 hours
1830–0459	–3 hours

Table 11: Duty Period Adjustment - Planned Commencement Time – 100SQN

- iii) **What existing guidance, standards and/or assessments made by suitably competent person(s) (competent person(s)) Defence relied on to implement the associated control measures, (including the qualifications, training, and experience of the competent person(s)); and,**
- As previously identified, given the contractually constrained operating window of the PC-21, and limited exposure to the 2200 to 0600 period (being 2200 to midnight only), no specific control measures have been put in place to date.
  - The broader context of PC-21 operations at 2FTS, coupled with the broader and more general controls in place across night flying in general from Air Academy are aligned with higher level OIP and provided over-arching guidance to unit OIP with examples listed below
    - REFERENCE F-2 - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021
    - REFERENCE F-3 - DFSB Aviation Fatigue Management Guidebook
    - REFERENCE F-4 - DFSB fatigue risk management chart – poster
    - REFERENCE F-5 - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management
    - REFERENCE F-6 - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System
    - REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits
    - REFERENCE F-8 - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)
    - REFERENCE F-9 - 220516 - AE628 - CRP - PC21 Night Flying

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- iv) **What training, information and instruction regarding the identified hazards, risks and associated control measures was provided to Defence workers tasked with managing and operating RAAF training flights outside of times recommended by the safety manual.**

**REFERENCE F-10:** 220705 - AC SI(OPS) 01-39 - Aviation Medical Requirements

**REFERENCE G:** 111189 - Flying Supervisor Course - LMP Vers 2.3 Approved 20 Feb 23

**REFERENCE H:** DFSB Aviation Safety Officer Courses [Pages - Welcome \(defence.gov.au\)](#)

- All ADF aircrew receive training for fatigue management from specific currency courses such as through Aviation Medicine Refresher (see below), supervisors receive additional training through the Flying Supervisors Course (see below). Units all have safety officers who receive flying safety officer training, which also focusses on similar aspects, as does higher headquarters safety personnel (see below).
- As previously noted, due to the constrained operating hours of the PC-21 within the training system exposure to circadian rhythm concerns and the 2200 to 0600 period is minimal. The DASM changes that now include recommended consideration of controls after 2200 has not been an item of concern however AirA will review any additional controls that could be implemented.
- 220705 - AC SI(OPS) 01-39 - Aviation Medical Requirements
  - This document provides the training and currency requirements that must be met for all aircrew.
  - The Aviation Medical training listed in the document covers physiological effects of fatigue and the management of fatigue for aircrew. The training is delivered by the Institute of Aviation Medicine (IAM) [Pages - Courses at IAM \(defence.gov.au\)](#).
- Flying Supervisor Course – Conducted by Central Flying School for all flying supervisors in the ADF. [Pages - Flying Supervisor Course \(defence.gov.au\)](#). Content includes:
  - OIP Session – discuss the regulatory framework pertaining to flying supervision and authorisation
  - AVRMS – discuss the application of AVRMS concepts for flying supervision, including applying SFARP; identifying aviation hazards and risks; considerations around eliminating or minimising risks; and application of MRP/RMP process to flight authorisation.
  - AVMED Factors – outline AVMED factors relative to flying supervision, including fatigue considerations
  - Human Factors – outline human factors relative to flying supervision, including fatigue management, roles and responsibilities of flying supervisors to manage fatigue related risk
- Aviation Safety Officer Courses – Conducted by DFSB for Aviation Safety Officers that are trained to conduct and advise on Aviation Risk Management policy and procedures. Information can be found on the DFSB intranet page [Pages - Welcome \(defence.gov.au\)](#)

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**SECTION B:**

Provide unredacted copies of each document Defence relied on to support the written responses provided for items 3a,3b,3c,3c(i), 3d, 3e and 3e(i) to 3e(iv) (inclusive).

( Note in relation to 3a – for ease of processing please only provide sections in the manual relevant and specific to recommended flight times for aircraft ).

- All References that have been listed in this document or have been used to ascertain information about past or present policy or guidance have been attached in the same area as this document at the time of submission.

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**REFERENCE D – 230626 - 2FTS Daily Flying Program Extracts 2017**

The below extracts display the days, and times sorties were flown between 2200-0600 hours local in 2017.

The comments below each screenshot detail the day and number of sorties programmed on that day between 2200-0600. It also includes the number of flying supervisors who operated between 2200-0600 and those events which were planned that did not go ahead, mostly due to weather cancellations.

**Training Flights and Personnel Working or Planned to Work between 2200-0600 hours in 2017**

Month, 2017	Training Flights	Staff Continuation Training Flights	Flying Supervisor	Training Flights – Planned but not flown	Staff Continuation Training Flights – Planned but not flown	Flying Supervisors – Planned but not required
Jan	6	-	2	6	-	1
Feb	41	8	16	1	-	-
Mar	-	-	-	-	-	-
Apr	23	3	7	-	-	-
May	34	2	7	7	-	-
Jun	-	-	-	-	-	-
Jul	15	4	7	15	-	1
Aug	19	3	8	4*	3*	7
Sep	-	-	-	-	-	-
Oct	18	5	9	11	1	1*
Nov	-	-	-	3	0	2
Dec	-	-	-	-	-	-
<b>Total</b>	<b>156</b>	<b>25</b>	<b>56</b>	<b>47*</b>	<b>4*</b>	<b>12*</b>

\* = this is the minimum number for this cell. It is almost certain that the number would be higher. See raw data below for an explanation.

**Assumptions**

- Flying supervisors are listed as DUTY EXEC and are Qualified Flying Instructors (pilots) who are posted to the unit as staff. For the DUTY EXEC task, the pilot is positioned in the operations room at the squadron and has access to a radio so they can assist with any emergency handling or operational consideration as well as manage the flying program. They have authority and oversight of all flying operations for the squadron on behalf of the squadron’s Chief Flying Instructor.
- Duty instructors are listed as DI YPEA and are qualified pilots who are posted to the unit as staff. For the DI YPEA task, the pilot is positioned in the air traffic control tower and visually supervises the trainees who are flying solo (without an instructor) as they conduct touch and gos.
- Assessments on how many RAAF training flights were operating between 2200-0600 hours, 30 minutes is added to the end of a sortie to account for flight critical tasks such as taxi, shutdown, walk around, returning aircraft and life support to maintenance and post flight reporting.

REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits (31 OCT 16) para 7

7. **Duty Period.** A duty period is defined as that period of time between when a member commences duties associated with their employment until they are finally relieved of all such duties and commence a rest period. The duty period therefore includes periods before and after the actual flight(s).

REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management 7.0

7. **Nominal crew duty day** The crew duty day commences from the time of arrival at work. In order to maximise the workday this should be either; just prior to morning brief, as stipulated in FlightPro, or one hour before taxi; whichever is most appropriate. Cessation of work is normally as per [2FTS SI\(ADMIN\) 5-1](#) or 30 minutes after aircraft shutdown taking into account the following limitations:

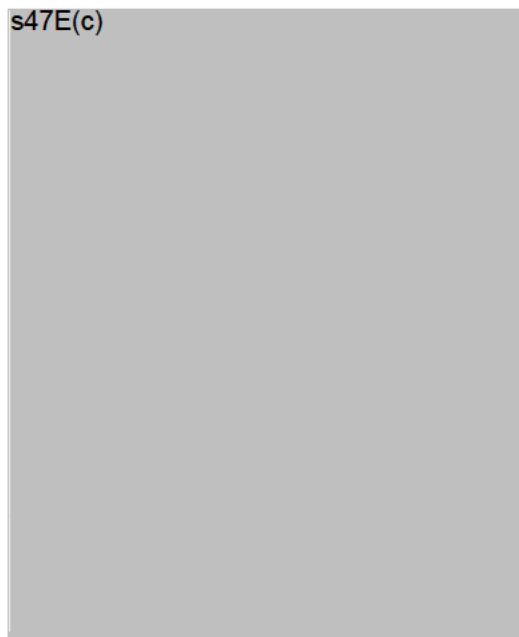
- a. The maximum normal crew duty day is 10 hours.
- b. FLTCDRs may approve up to 11 hours.

REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties

#### **Work Routine**

5 **Daily routine - staff.** The normal working day routine for 2FTS staff is to commence at 0750 H and ends at 1700 H (1500 H on a Friday). FLTCDRs may vary these times and Ultra will notify individuals of different start and cease work times if required. Members are encouraged to maintain a healthy work life balance, and when not required for tasking may vary these hours in consultation with their supervisor.

## Legend



### **On Schedule (no indicator)**

This is the default status for new Strips. This status indicates that the strip is due to fly 'On Schedule'.

### **Added (green diamond)**

This status indicates that the Strip has recently been added to the Programming Board.

### **Changed (diagonal pink line)**

This status highlights that a significant change has been made to the Strip. Common areas of change are personnel, asset, task, currency details and timings.

### **Moved Forward (right blue chevron)**

This status indicates that the Strip has been 'moved forward' to an earlier time than was previously scheduled.

### **Delayed (left blue chevron)**

This status indicates that the Strip has been 'delayed' to a later time than was previously scheduled.

### **Cancelled (diagonal red cross)**

This status indicates that the Strip has been cancelled.

### **On Hold (two blue chevrons)**

This status indicates that the Strip is 'on hold' until it is placed into the schedule.

### **In Planning (inverted grey V)**

This status indicates that the Strip is still in the 'planning' phase and has yet to be finalised

**Jan 2017**

20:00	21:00	22:00	23:00	00:00
s47E(c)				Tue 31

**30Jan17**

6 training flights planned but not flown – Cancelled due weather

20:00	21:00	22:00	23:00	00:00
Tue 31	s47E(c)			Wed 01

**31Jan17**

6 training flights and 2 flying supervisors

**Feb 2017**

20:00	21:00	22:00	23:00	00:00 Thu 02
s47E(c)				
s47E(c)				

**01 Feb 17**

5 training flights and 2 flying supervisors  
 1 training flight planned but not flown

20:00	21:00	22:00	23:00	00:00 Fri 03
s47E(c)				

**02 Feb 17**

7 training flights and 2 flying supervisors

20:00 21:00 22:00 23:00 00:00  
Tue 07

s47E(c)



**06 Feb 17**

4 training flights and 2 flying supervisors

20:00 21:00 22:00 23:00 00:00  
Wed 08

s47E(c)

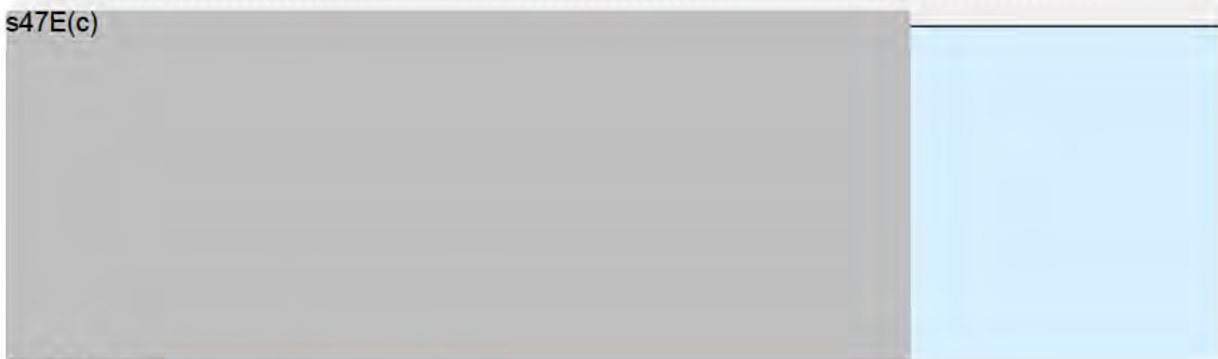


**07 Feb 17**

3 training flight, 4 staff continuation training flights and 3 flying supervisors

20:00 21:00 22:00 23:00 00:00  
Wed 22

s47E(c)



**21 Feb 17**

4 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Thu 23
s47E(c)				

**22 Feb 17**

4 training flights, 1 staff continuation training flight and 2 flying supervisors

20:00	21:00	22:00	23:00	00:00 Fri 24
s47E(c)				

**23 Feb 17**

6 training flights and 2 flying supervisors

20:00	21:00	22:00	23:00	00:00 Tue 28
s47E(c)				

**27 Feb 17**

6 training flights, 2 staff continuation training flight and 1 flying supervisor



20:00	21:00	22:00	23:00	00:00 Wed 01
s47E(c)				

**28 Feb 17**

4 training flight, 1 staff continuation training flight and 1 flying supervisor

**Mar 2017**

Nil observations

**Apr 2017**

20:00	21:00	22:00	23:00	00:00
s47E(c)				

**19 Apr 17**

9 training flights, 1 staff continuation training flight and 2 flying supervisors

20:00	21:00	22:00	23:00	00:00
s47E(c)				

**20 Apr 17**

4 training flights, 2 staff continuation training flights and 2 flying supervisors

20:00	21:00	22:00	23:00	00:00 Thu 27
s47E(c)				

**26 Apr 17**  
5 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Fri 28
s47E(c)				

**27 Apr 17**  
5 training flights and 2 flying supervisors

**May 2017**

20:00	21:00	22:00	23:00	00:00
s47E(c)				Tue 09

**08 May 17**

6 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00
s47E(c)				Wed 10

**09 May 17**

6 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Fri 11
s47E(c)				

**10 May 17**

5 training flights, 1 staff continuation training flight and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Fri 12
s47E(c)				

**11 May 17**

3 training flights, 1 staff continuation training flight and 1 flying supervisor

7 training flights cancelled due *Curriculum variation* – Authorisation Commanding Officer 2FTS

20:00	21:00	22:00	23:00	00:00 Tue 30
s47E(c)				

**29 May 17**  
5 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Wed 31
s47E(c)				

**30 May 17**  
6 training flights and 1 flying supervisor

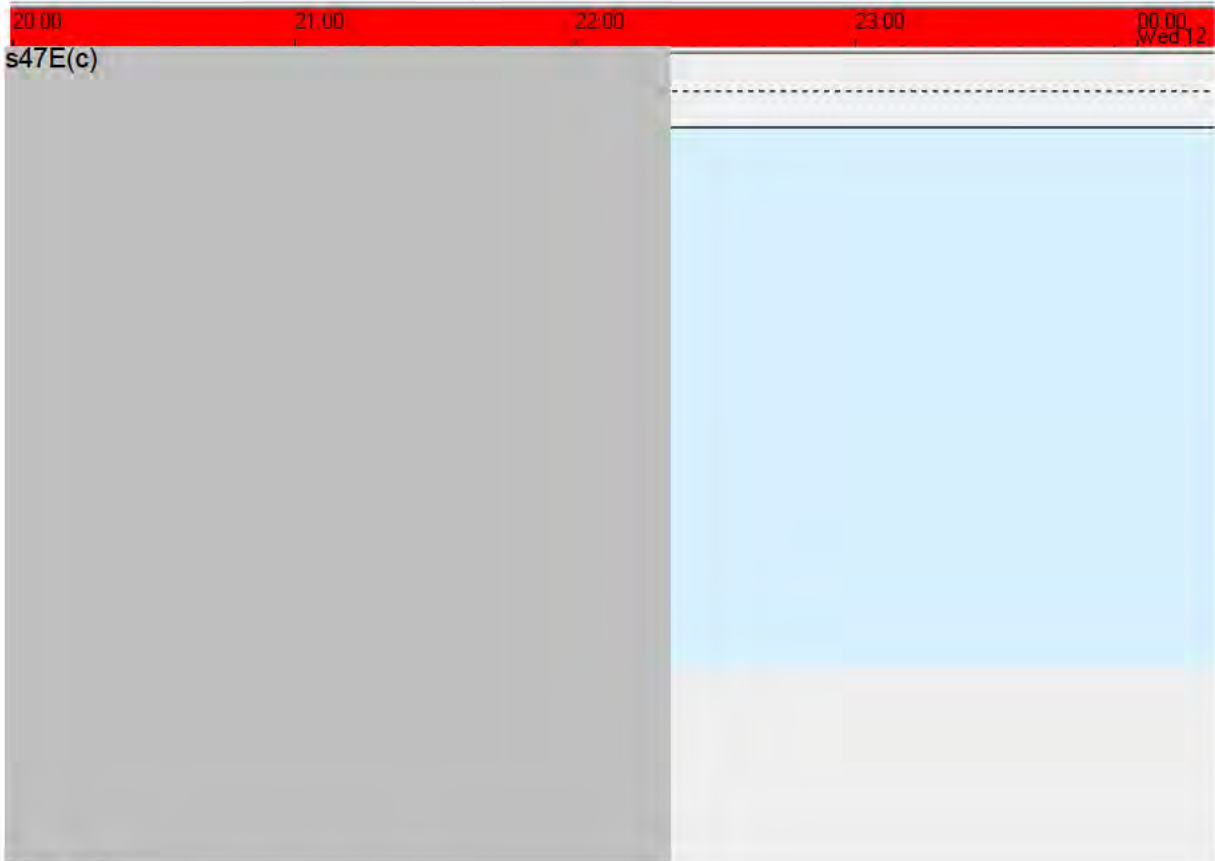
20:00	21:00	22:00	23:00	00:00 Thu 01
s47E(c)				

**31 May 17**  
3 training flights and 1 flying supervisor

**Jun 2017**

Nil observations

Jul 2017



11 Jul 17  
6 training flights planned but not flown



12 Jul 17  
6 training flights planned but not flown



20:00	21:00	22:00	23:00	00:00
s47E(c)				00:00 Fri 14
[Redacted]				[Redacted]

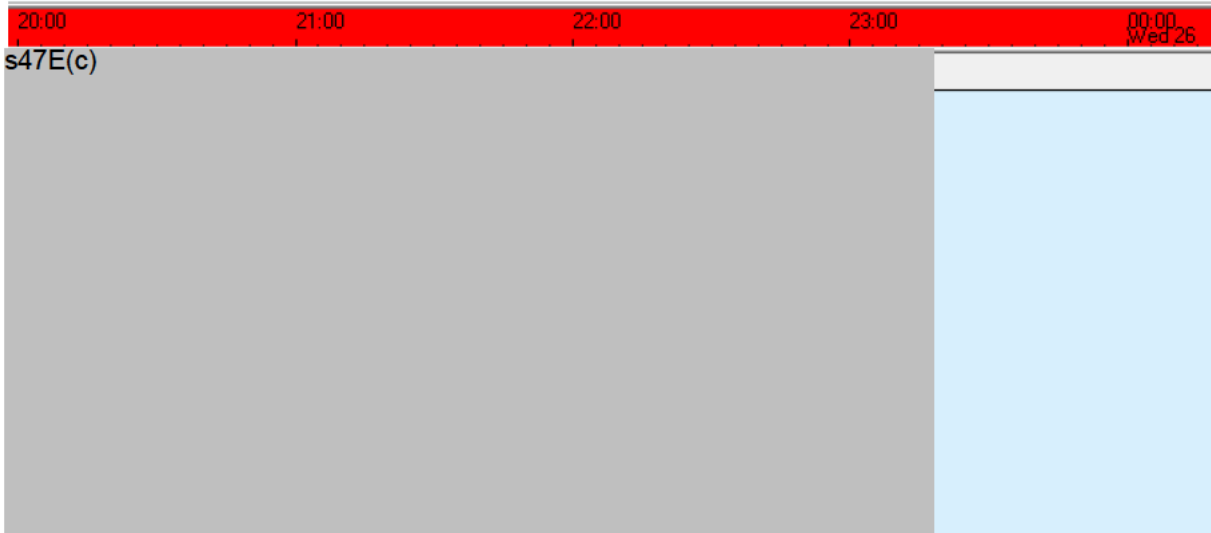
**13 Jul 17**

5 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00
s47E(c)				00:00 Tue 25
[Redacted]				

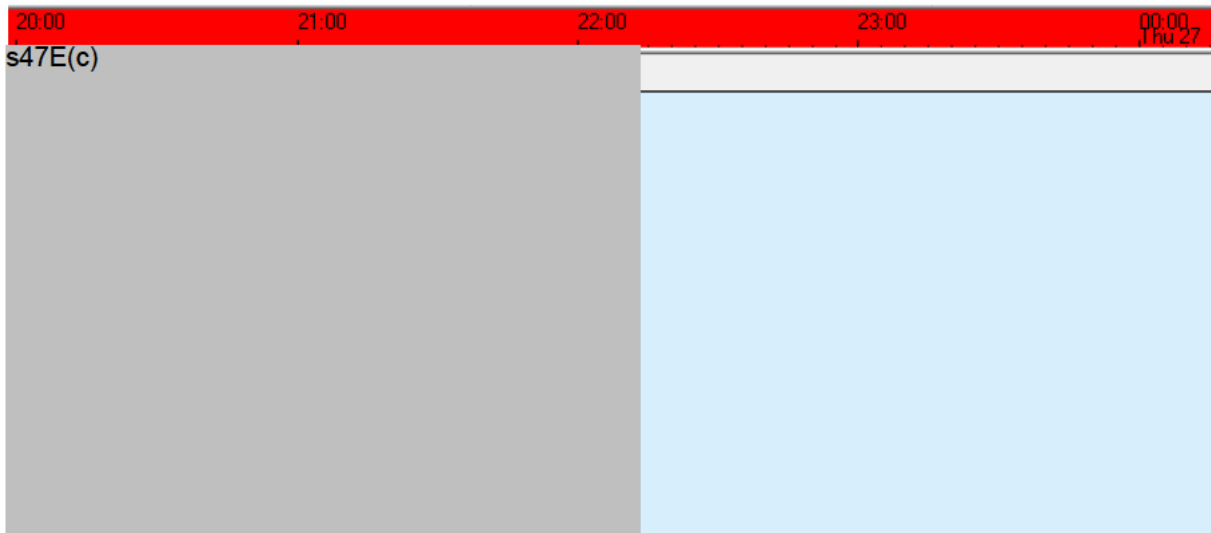
**24 Jul 17**

5 training flights and 2 flying supervisors



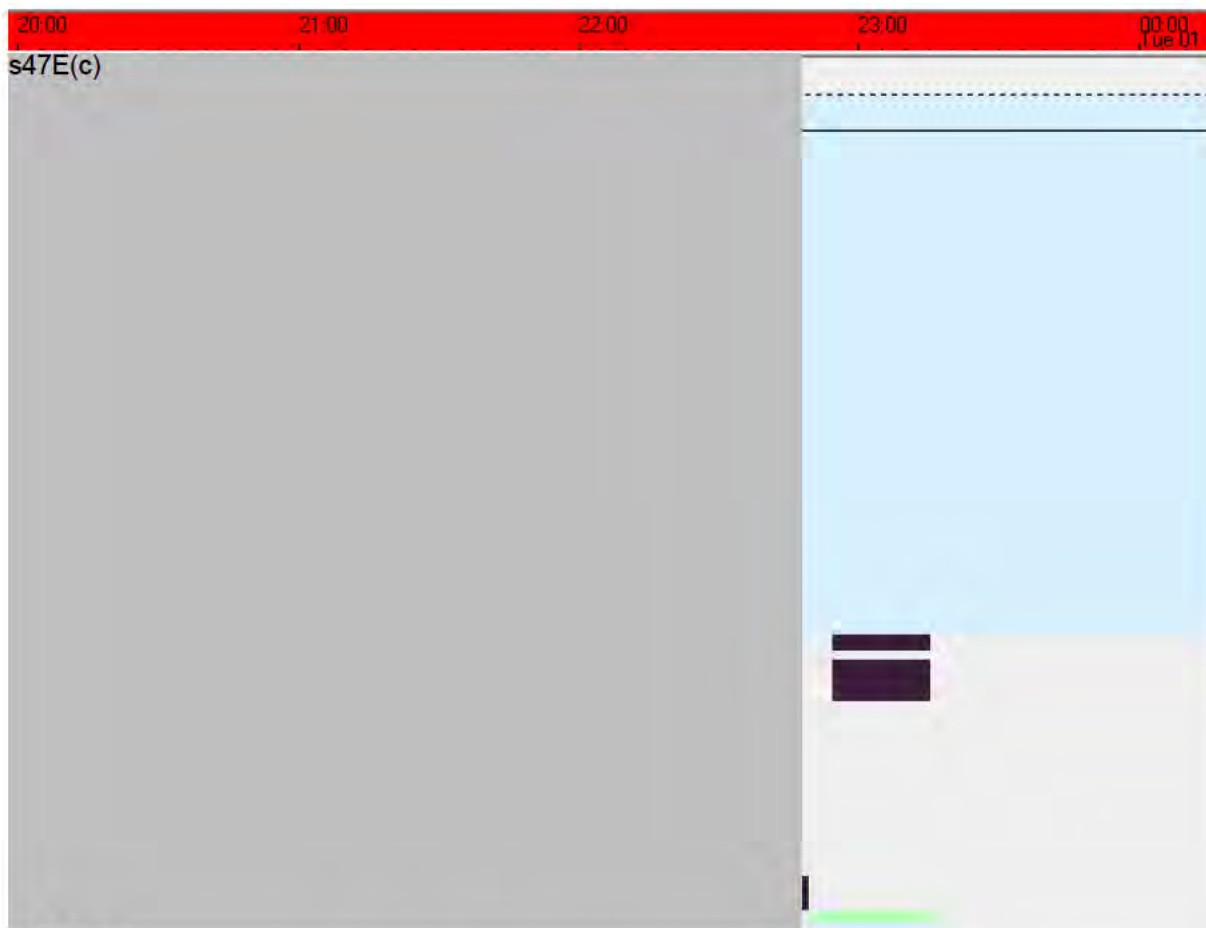
**25 Jul 17**

4 training flights, 1 staff continuation training flight and 2 flying supervisors



**26 Jul 17**

1 training flight, 3 staff continuation training flight and 2 flying supervisors



**31 Jul 17**

3 training flights planned but not flown. 1 flying supervisor planned but not required.

**Aug 2017**

20:00	21:00	22:00	23:00	00:00
s47E(c)				
				Wed 02

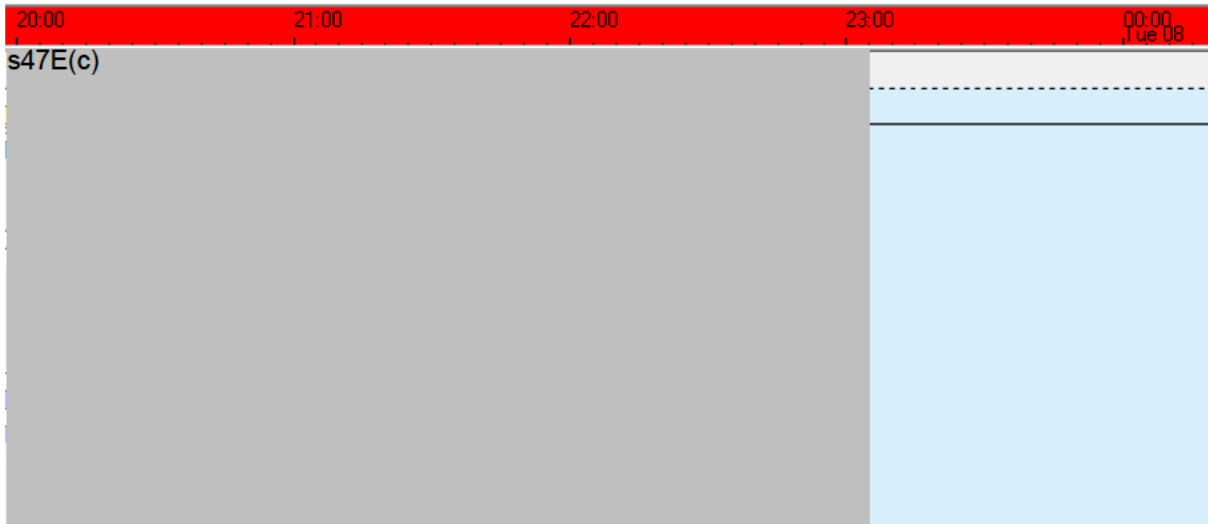
**01 Aug 17**  
3 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00
s47E(c)				
				Thu 03

**02 Aug 17**  
4 training flights, 1 staff continuation training flight and 2 flying supervisors

20:00	21:00	22:00	23:00	00:00
s47E(c)				
				Fri 04

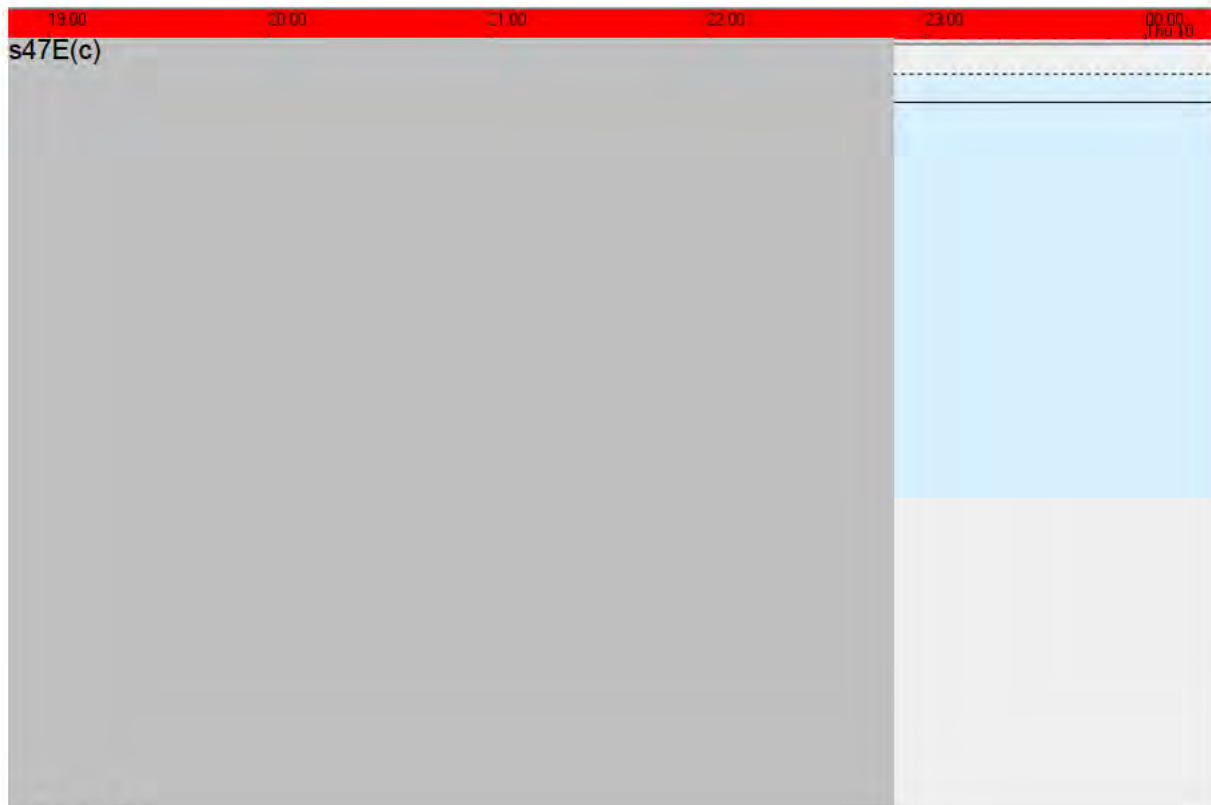
**03 Aug 17**  
1 training flight and 1 flying supervisor



**07 Aug 17**  
5 training flights, 1 staff continuation training flight and 2 flying supervisors

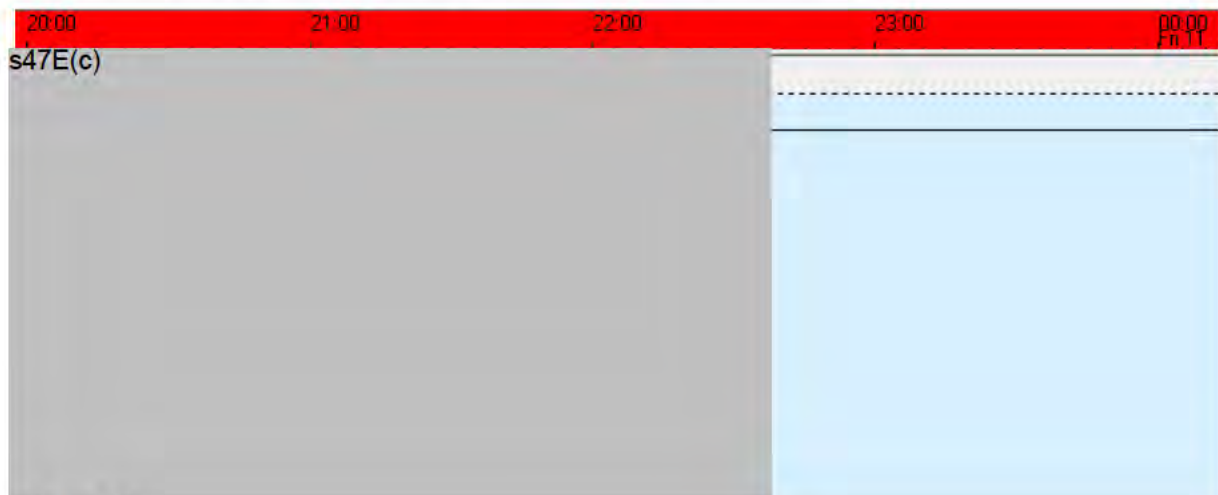


**08 Aug 17**  
Unknown number of planned but not flown. Almost certain that at least 2 (NF8 – solo trainee + Shotgun – Staff in direct support of student flying) would have flown over 2200 as that was the planned time for the DI YPEA. 2 flying supervisors planned but not required.



**09 Aug 17**

Unknown number of planned but not flown. Almost certain that least 2 (NF8 – solo trainee + Shotgun – Staff in direct support of student flying) would have flown over 2200 as that was the planned time for the DI YPEA. 2 flying supervisors planned but not required.



**10 Aug 17**

5 training flights and 2 flying supervisors

20:00	21:00	22:00	23:00	00:00 Tue 15
s47E(c)				

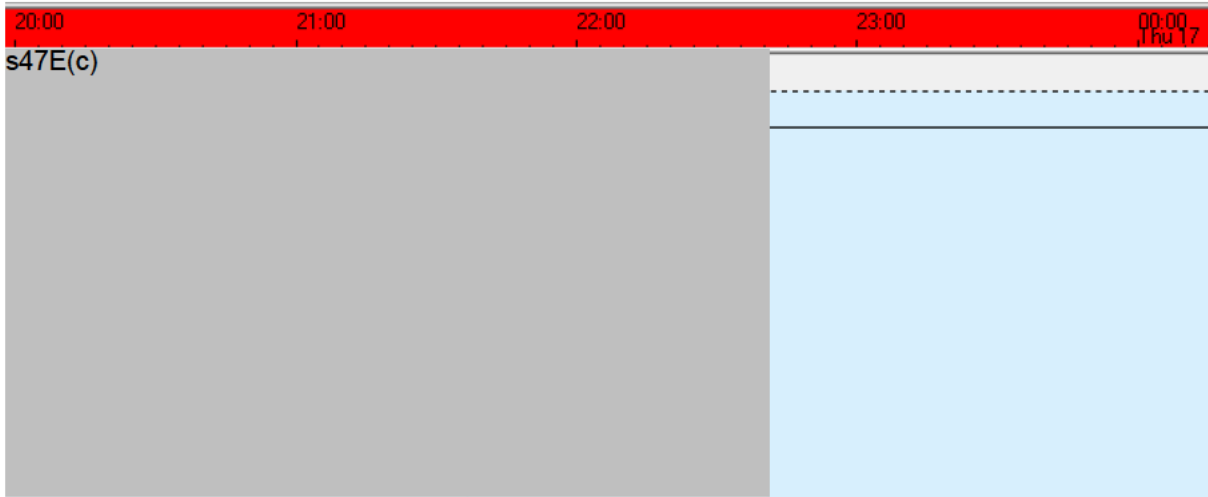
**15 Aug 17**

Unknown number of planned but not flown. At least 1 flying supervisor planned but not required

20:00	21:00	22:00	23:00	00:00 Wed 16
s47E(c)				

**15 Aug 17**

2 training flights and 1 staff continuation training flight planned but not flown. 2 flying supervisors planned but not required.



**16 Aug 17**

1 training flight, 1 staff continuation training flight and 2 flying supervisors

**Sep 2017**

Nil observed



**Oct 2017**

20:00	21:00	22:00	23:00	00:00
s47E(c)				Fr 13
[Redacted]				[Redacted]
				[Redacted]

**12 Oct 17**

3 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00
s47E(c)				Tue 17
[Redacted]				[Redacted]
				[Redacted]

**16 Oct 17**

5 training flights planned but not flown. 2 flying supervisors planned but not required.

20:00	21:00	22:00	23:00	00:00 Wed 18
s47E(c)				

**17 Oct 17**

5 training flights and 1 staff continuation training flight planned but not flown (including NF 8s from first wave). 1 flying supervisor planned but not required. Almost certain another flying supervisor was required for DI YPEA (due to solo operations) but not listed or required.

20:00	21:00	22:00	23:00	00:00 Thu 19
s47E(c)				

**18 Oct 17**

3 training flights, 2 staff continuation training flights and 2 flying supervisors  
1 training flight planned but not flown (NF8)

20:00 21:00 22:00 23:00 00:00  
Tue 24

s47E(c)

**23 Oct 17**

3 training flights, 1 staff continuation training flight and 2 flying supervisors

20:00 21:00 22:00 23:00 00:00  
Wed 25

s47E(c)

**24 Oct 17**

2 training flights and 2 flying supervisors

20:00 21:00 22:00 23:00 00:00  
Thu 26

s47E(c)

**25 Oct 17**

5 training flights, 1 staff continuation training and 2 flying supervisors

20:00	21:00	22:00	23:00	00:00 Fri 27
s47E(c)				

**26 Oct 17**

2 training flights, 1 staff continuation training flight and 2 flying supervisors

**Nov 2017**

20:00	21:00	22:00	23:00	00:00 Tue 07
s47E(c)				

**06 Nov 17**

3 training flights planned but not flown. 2 flying supervisors planned but not required.

**Dec 2017**

Nil Observed

**REFERENCE E – 230628 - 2FTS Daily Flying Program Extracts 2023**

The below extracts display the days, and times sorties were flown between 2200-0600 hours local in 2023 up until 27 Jun 23.

The comments below each screenshot detail the day and number of sorties programmed on that day between 2200-0600. It also includes the number of flying supervisors who operated between 2200-0600 and those events which were planned that did not go ahead.

**Training Flights and Personnel Working or Planned to Work between 2200-0600 hours in 2023**

Month, 2023	Training Flights	Simulator Training Flights	Flying Supervisor	Training Flights – Planned but not flown	Simulator Training Flights – Planned but not flown	Flying Supervisors – Planned but not required
Jan	17	4 <sup>^</sup>	3	2	-	1
Feb	10	8	6	3	-	2
Mar	14 <sup>^</sup>	4	4	19	1	4
Apr	2	-	1	-	-	-
May	-	-	-	-	-	-
Jun	-	-	-	-	-	-
<b>Total</b>	<b>33</b>	<b>16</b>	<b>14</b>	<b>24</b>	<b>1</b>	<b>7</b>

<sup>^</sup> = this denotes a staff continuation training event that has been added to this cell in order to reduce the number of columns required for this table. See raw data below detailed breakdown.

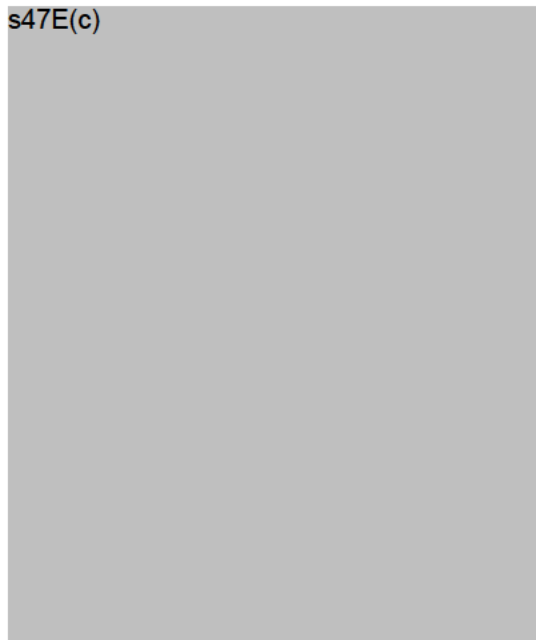
**Assumptions**

- Flying supervisors are listed as DUTY SUPERVISOR and are Qualified Flying Instructors (pilots) who are posted to the unit as staff. For the DUTY SUPERVISOR task, the pilot is positioned in the operations room at the squadron and has access to a radio so they can assist with any emergency handling or operational consideration as well as manage the flying program. They have authority and oversight of all flying operations for the squadron on behalf of the squadron’s Chief Flying Instructor.
- Assessments on how many RAAF training flights were operating between 2200-0600 hours, 30 minutes is added to the end of a sortie to account for flight critical tasks such as taxi, shutdown, walk around, returning aircraft and life support to maintenance and post flight reporting.

**REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits Annex A, para 2**

2. **Planned Duty Period.** For planning purposes, a duty period will span from 60 minutes before first lines time to 30 minutes after the last lines time.

## Legend



### **On Schedule (no indicator)**

This is the default status for new Strips. This status indicates that the strip is due to fly 'On Schedule'.

### **Added (green diamond)**

This status indicates that the Strip has recently been added to the Programming Board.

### **Changed (diagonal pink line)**

This status highlights that a significant change has been made to the Strip. Common areas of change are personnel, asset, task, currency details and timings.

### **Moved Forward (right blue chevron)**

This status indicates that the Strip has been 'moved forward' to an earlier time than was previously scheduled.

### **Delayed (left blue chevron)**

This status indicates that the Strip has been 'delayed' to a later time than was previously scheduled.

### **Cancelled (diagonal red cross)**

This status indicates that the Strip has been cancelled.

### **On Hold (two blue chevrons)**

This status indicates that the Strip is 'on hold' until it is placed into the schedule.

### **In Planning (inverted grey V)**

This status indicates that the Strip is still in the 'planning' phase and has yet to be finalised

**2023 Observations**

**Jan 2023**

20:00	21:00	22:00	23:00	00:00 Thu, 19
s47E(c)				
s47E(c)				

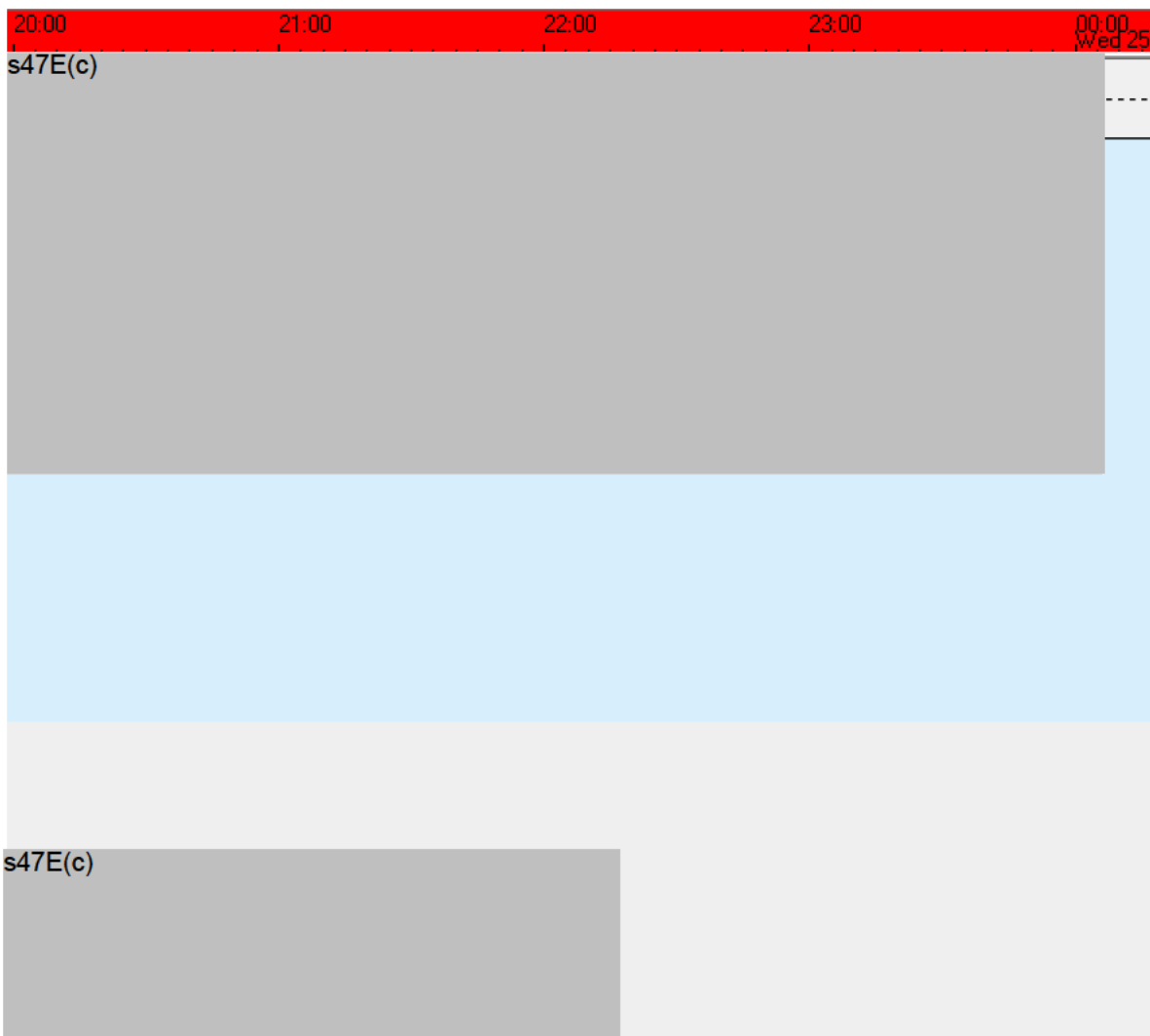
**18 Jan 23**

1 training flight and 1 simulator staff continuation training flight



20:00	21:00	22:00	23:00	00:00 Tue 24
s47E(c)				
s47E(c)				

**23 Jan 23**  
5 training flights, 1 simulator training flight and 1 flying supervisor

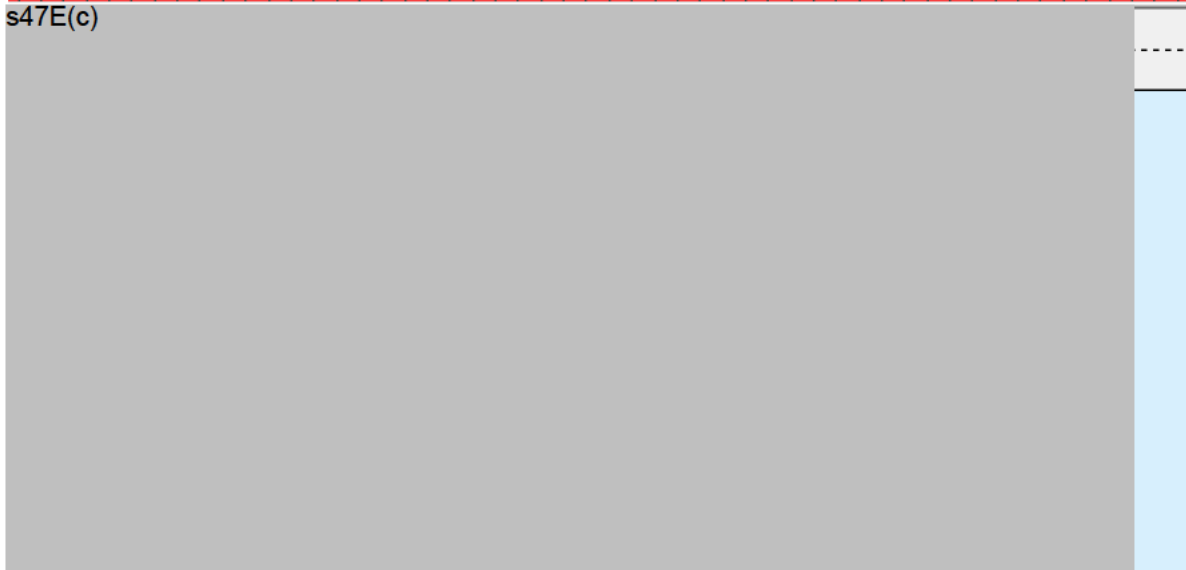


**24 Jan 23**

2 training flights and 1 simulator training flight

20:00	21:00	22:00	23:00	00:00
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s47E(c)



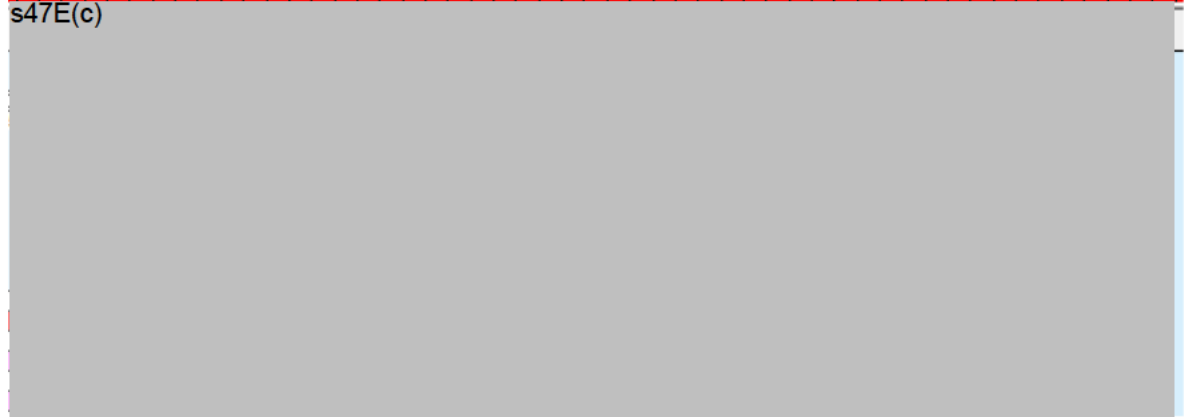
s47E(c)



**25 Jan 23**  
3 training flights, 1 simulator training flight and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00
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s47E(c)



**30 Jan 23**  
6 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Wed 01
s47E(c)				

**31 Jan 23**

2 training flights planned but not flown and 1 flying supervisor programmed but not required

**Feb 2023**

20:00	21:00	22:00	23:00	00:00
s47E(c)				Thu 02

**01 Feb 23**

1 training flight planned but not flown and 1 flying supervisor programmed but not required

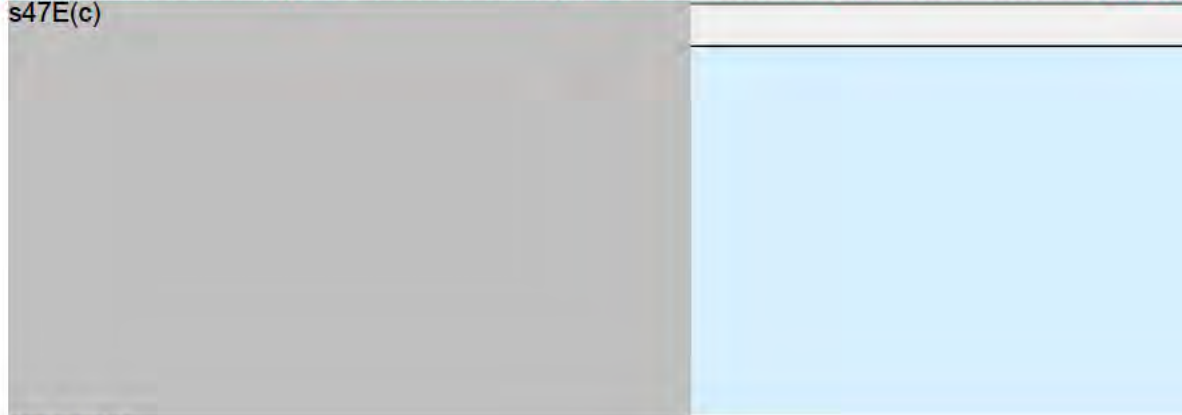
20:00	21:00	22:00	23:00	00:00
s47E(c)				Fri 03

**06 Feb 23**

2 training flights planned but not flown and 1 flying supervisor planned but not required

20:00	21:00	22:00	23:00	00:00 Wed 08
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s47E(c)



**07 Feb 23**  
1 training flight

20:00	21:00	22:00	23:00	00:00 Thu 09
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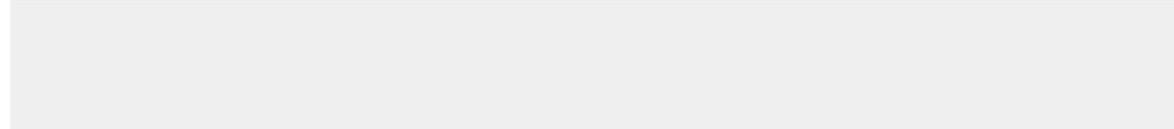
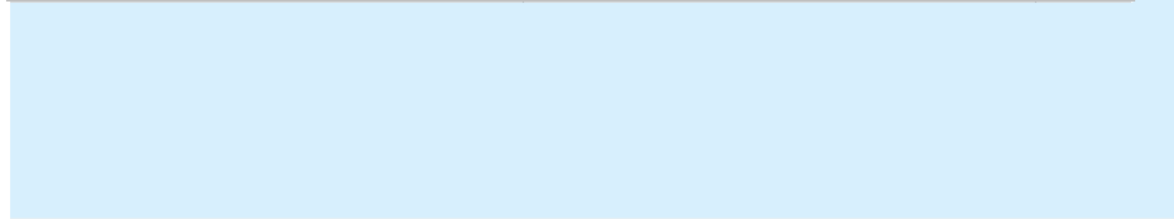
s47E(c)



**08 Feb 23**  
1 simulator training flight and 1 flying supervisor

20:00 21:00 22:00 23:00 00:00  
Fri 10

s47E(c)



s47E(c)



**09 Feb 23**

2 training flights, 1 simulator training flight and 1 flying supervisor

20:00 21:00 22:00 23:00 00:00  
Tue 14

s47E(c)

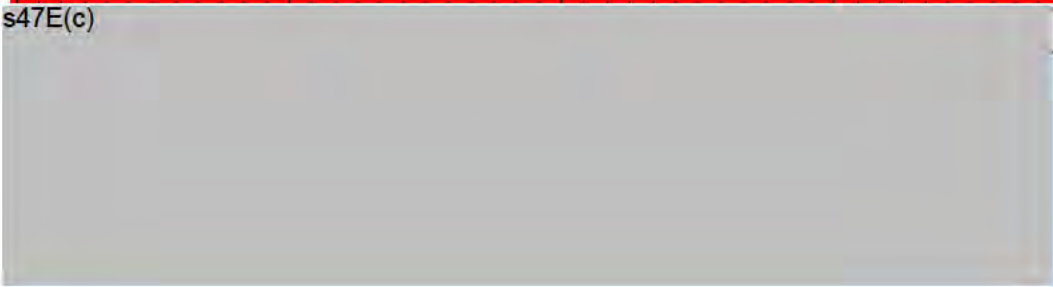


**13 Feb 23**

2 training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Wed 15
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s47E(c)



s47E(c)



**14 Feb 23**  
2 training flights, 1 simulator training flight and 1 flying supervisor



20:00	21:00	22:00	23:00	00:00
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s47E(c)

[Redacted]

[Redacted]

[Redacted]

s47E(c)

[Redacted]

**15 Feb 23**

1 training flight, 1 simulator training flight and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00
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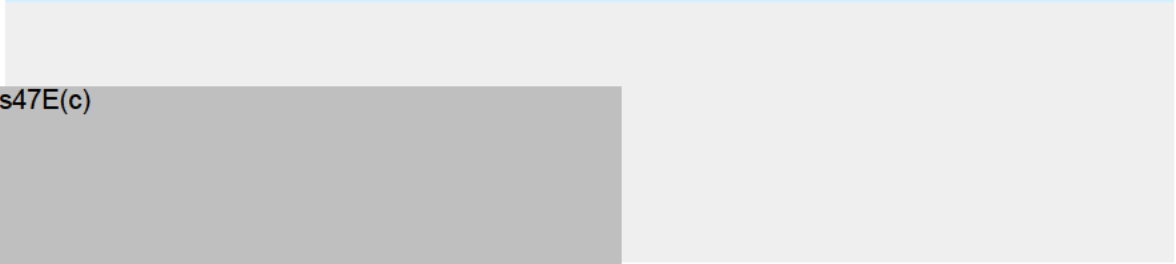
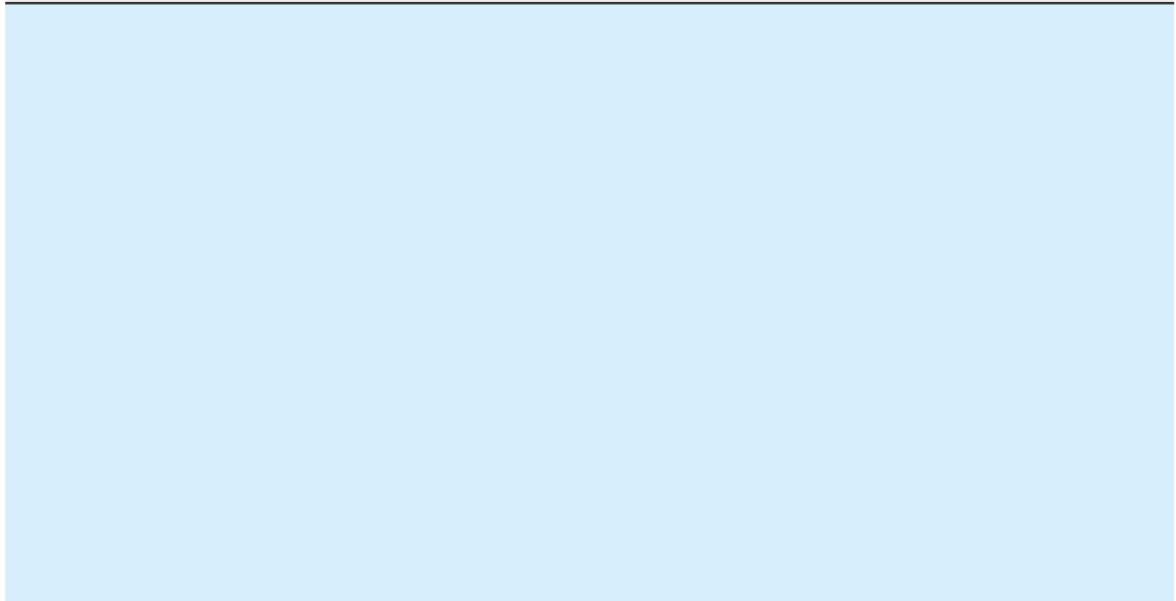
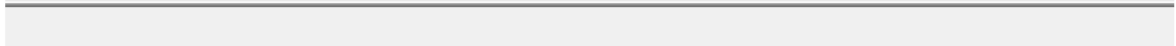
s47E(c)

[Redacted]

**16 Feb 23**

2 training flights and 1 flying supervisor

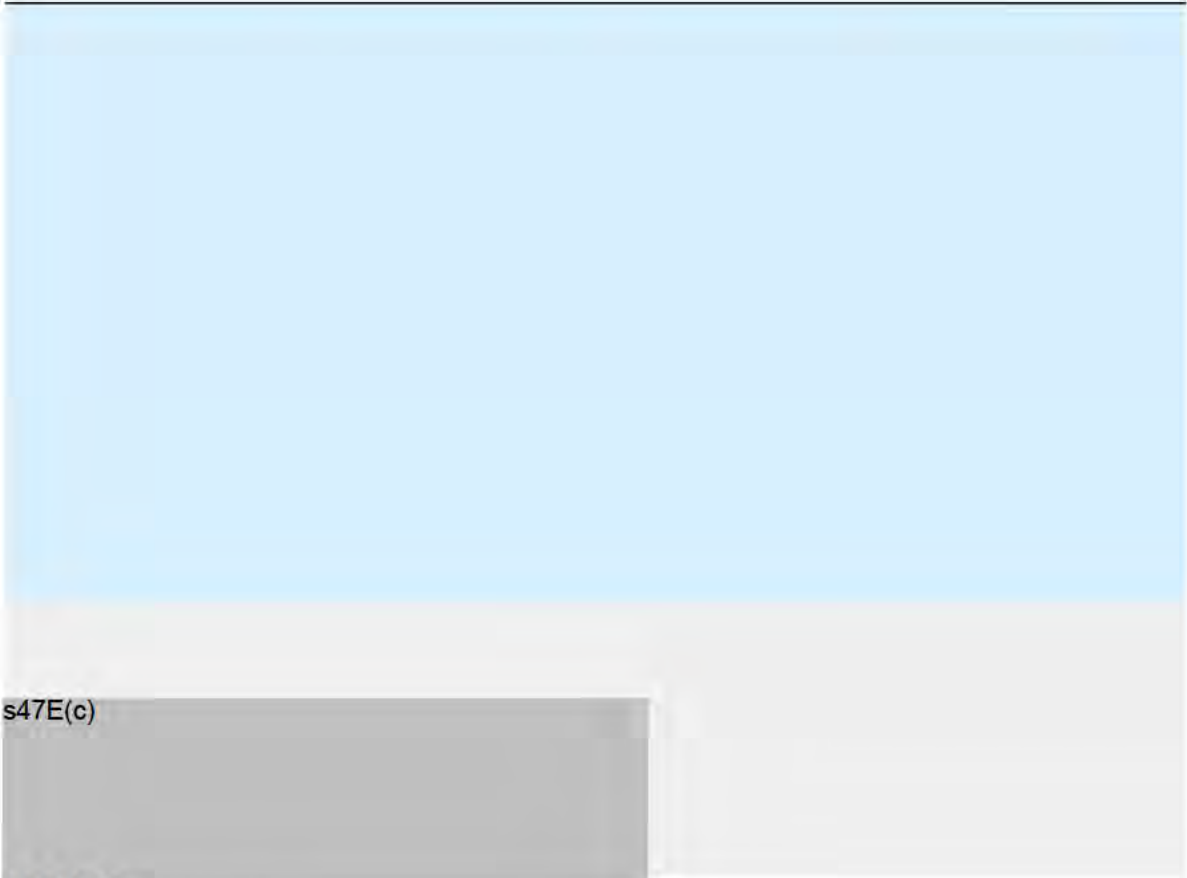
20:00 21:00 22:00 23:00 00:00  
Tue 28



s47E(c)

**27 Feb 23**  
2 simulator training flights

20:00	21:00	22:00	23:00	00:00 Wed 01
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s47E(c)

**28 Feb 23**  
2 simulator training flights

**Mar 2023**

20:00	21:00	22:00	23:00	00:00 Tue 21
s47E(c)				

**20 Mar 23**

5 training flights and 1 flying supervisor  
2 training flights planned but not flown

20:00	21:00	22:00	23:00	00:00 Wed 22
s47E(c)				

**21 Mar 23**

2 simulator training flights and 1 flying supervisor

20:00	21:00	22:00	23:00	00:00 Thu 23
s47E(c)				

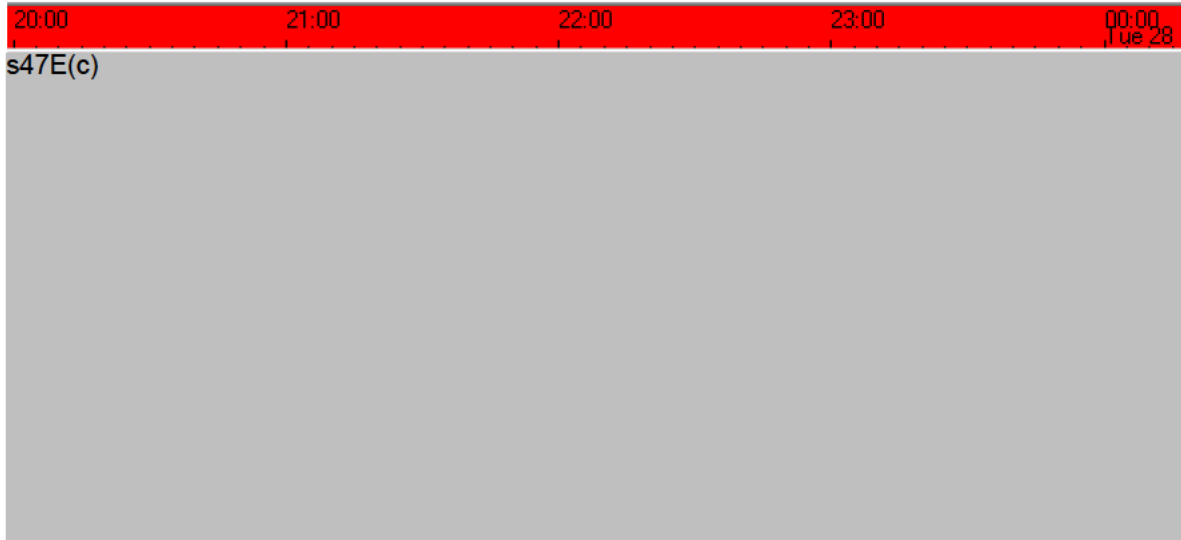
**22 Mar 23**

2 training flights planned but not flown and 1 flying supervisor planned but not required

20:00	21:00	22:00	23:00	00:00 Fri 24
s47E(c)				

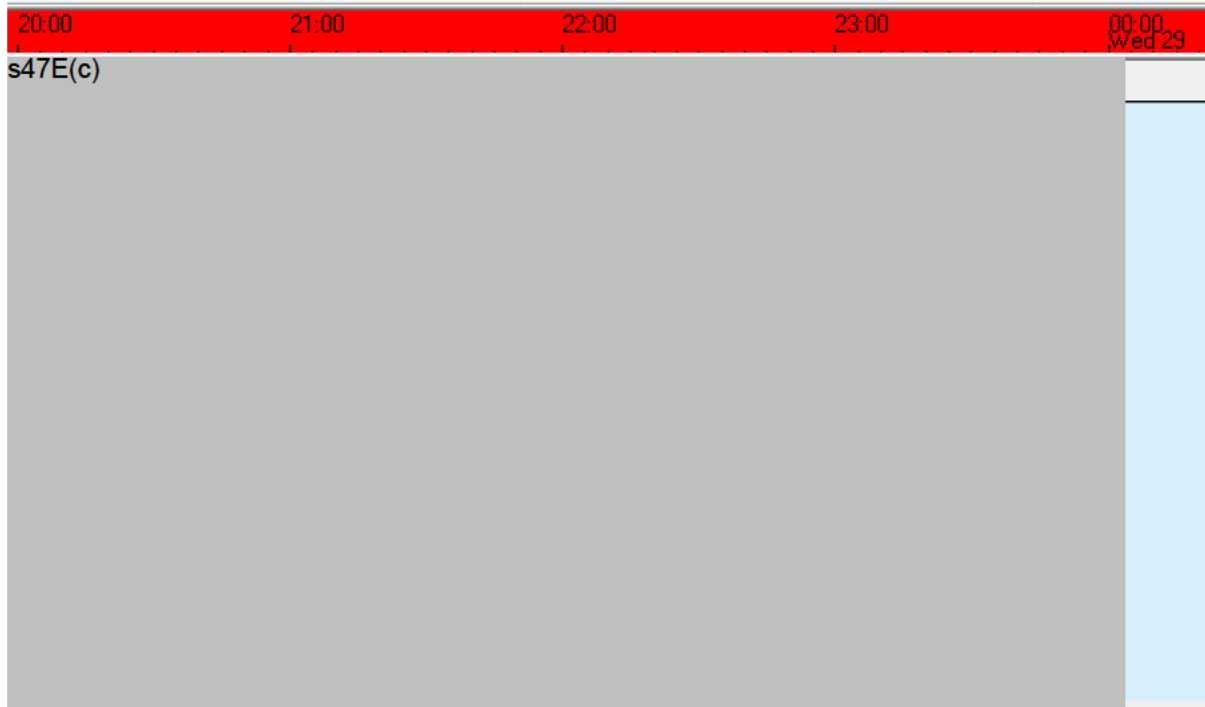
**23 Mar 23**

4 training flights planned but not flown and 1 flying supervisor planned but not required



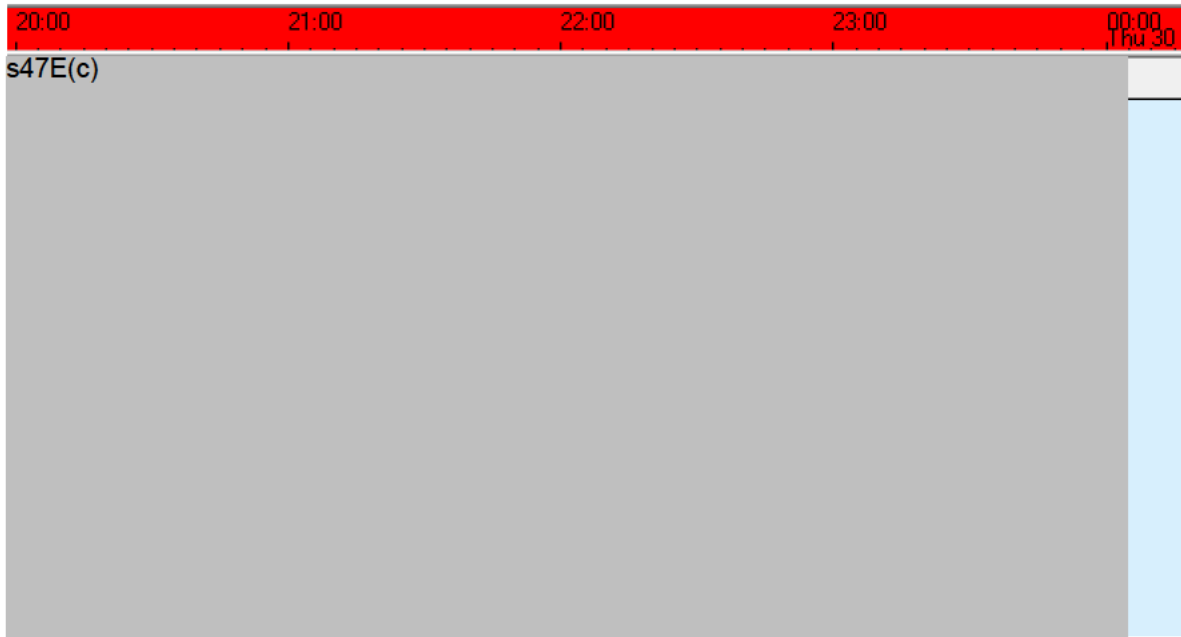
**27 Mar 23**

5 training flights and 1 flying supervisor  
3 training flights planned but not flown



**28 Mar 23**

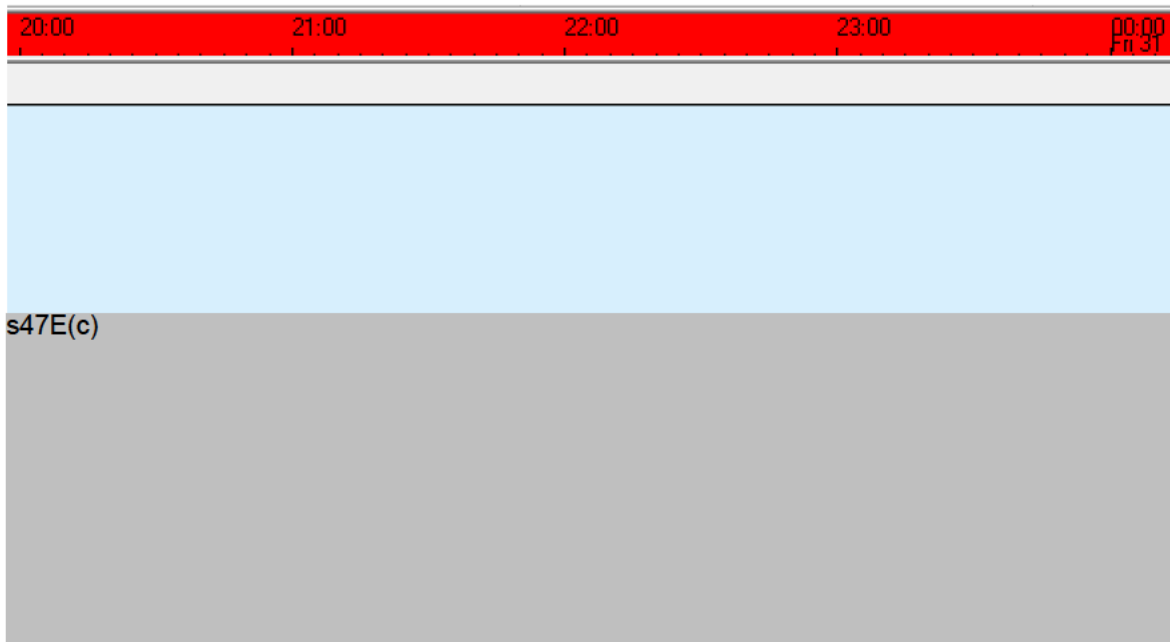
3 training flights, 1 staff continuation training flight and 1 flying supervisor  
1 simulator training flight planned but not flown



**29 Mar 23**

2 simulator training flights

1 training flight planned but not flown and 1 flying supervisor planned but not required



**30 Mar 23**

7 training flights planned but not flown and 1 flying supervisor planned but not required

**Apr 2023**

20:00	21:00	22:00	23:00	00:00 Tue 04
s47E(c)				

**03 Apr 23**

2 training flights and 1 flying supervisor

**May 2023**

Nil observed

**Jun 2023**

Nil observed



## **OBJECTIVE ID**

### **2023 Workplace policy**

**REFERENCE F-2** - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021

**REFERENCE F-3** - DFSB Aviation Fatigue Management Guidebook

**REFERENCE F-4** - DFSB fatigue risk management chart – poster

**REFERENCE F-5** - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management

**REFERENCE F-6** - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System

**REFERENCE F-7** - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits

**REFERENCE F-8** - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)

**REFERENCE F-9** - 220516 - AE628 - CRP - PC21 Night Flying

**REFERENCE F-10** - 220705 - AC SI(OPS) 01-39 - Aviation Medical Requirements

**REFERENCE F-11** - Email - Air Command - RE Cancellation of OPS 01-13 and OPS 06-01

**REFERENCE F-12** - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System

### **Background / Philosophy**

The hierarchy of Orders, Instructions and Procedures (OIP) for 2FTS for aviation and workplace safety, in descending order, are as follows:

1. WHS Act
2. Defence Aviation Safety Regulations (DASR)
3. Defence Manuals or Standing Instructions
4. Air Command (AC) Standing Instructions
5. Air Force Training Group (AFTG) Standing Instructions
6. Air Academy (AirA) Standing Instructions (formally Air Training Wing)
7. 2FTS Standing Instructions
8. Guidebooks
9. Deliberate Risk Management and Risk Decision Briefs

Generally, they are more prescriptive the further down the hierarchy. Where a policy does not exist or has been cancelled, the worker should refer to the higher order document.

Crew Duty Limits and Fatigue Management – As of 28 Jun 23

1. WHS Act for 2023 has not been explored during this data gathering exercise
2. Defence Aviation Safety Regulations have not been explored during this data gathering exercises. Contacts within the Defence Aviation Safety Authority (DASA) could assist further.

3. **REFERENCE F-2** - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021

- a. Part 1 Ch 3 Safety Accountability and Responsibilities
  - i. Applicable extracts below

**Senior Commanders Subordinate to the AM**

3.23 Senior Commanders (eg OC WG, Regt CO and Senior ranks with ASMS responsibilities as delegated by the AM) are **accountable** to the AM for contributing to ASMS implementation and execution within their area of control. Senior Commander aviation safety **responsibilities** are as follows:

- a. Management and maintenance of aviation safety standards within their area of control against this manual.
- b. Provision of advice on aviation safety policy development and improvement to the relevant AM.

**Unit Commanders**

3.24 Unit Commanders of flying units and other sub-organisations directly responsible for aviation systems are **accountable** to the AM for contributing to ASMS implementation and execution within their area of control. Unit Commander aviation safety **responsibilities** are as follows:

- a. Management and maintenance of aviation safety standards at Unit level against this manual.

4. **REFERENCE F-5** - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management

- a. Applicable extract below

**P1 C1 - MANAGEMENT COMMITMENT**

9. Commanders at all levels must take ownership and demonstrate a commitment to their portion of the Defence ASMS through active and visible participation in safety management. FEG CDR's and unit COs are to issue a command statement that outlines the importance and purpose of the ASMS.<sup>6</sup>

**P1 C2 - GENERATIVE SAFETY CULTURE**

10. Commanders, managers and supervisors must support a just culture. The DFSB supplied Safety Behaviour Management Tool is to be utilised by commanders to assist in determination of acceptable and unacceptable behaviour.

11. Commanders at all levels are required to support the ongoing maturity of safety culture.

- b. AC SI (OPS) 6-1 Air Command Crew Duty Limits – Cancelled in Aug 22
  - i. This SI was cancelled – refer **REFERENCE F-11** - Email - Air Command - RE Cancellation of OPS 01-13 and OPS 06-01

5. **REFERENCE F-12 - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System**
  - a. Applicable extract from below

**Safety accountability and responsibilities (DASR SMS 1.2)**

10. Safety of personnel is a fundamental responsibility of command. The responsibility for aviation safety management in AFTG, LAW the policies and procedures in the DASM, AC SI(OPS) 6-4 and this Instruction, in order of precedence and as applicable to the level, rests with the following officials:

- a. CDR AFTG, as the commander for the FEG, is accountable for aviation safety within AFTG, including to establish and resource the management system, and to whom the:
  - (1) AFTG Safety Manager (SM) is responsible for maintaining the AFTG ASMS framework
  - (2) AFTG Group Aviation Safety Officer (GASO) is responsible for implementing, monitoring and performance reporting of the AFTG ASMS.
- b. OC AirA and COs of aviation units,<sup>4</sup> are responsible for safety management within the scope of their command and are to establish and maintain an ASMS within and structured and resourced appropriately for, their respective organisation.

11. Notwithstanding a commander's responsibility for safety, all personnel at all levels in AFTG aviation are required to be active participants in the ASMS. Active participation includes:

- a. conforming to policies and practising 'safety always'<sup>5</sup> behaviour
- b. sharing errors and omissions through debriefing, and Occurrence Reporting when required, and sharing concerns and ideas with safety personnel and command and management, to enable hazard identification, risk management and continuous improvement to occur
- c. exercising individual responsibility and accountability for your own actions and for continuous improvement.

- b. No AFTG SI on Crew Duty Limits could be found in archive

**6. REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits**

- a. Para 10 refers to the old DASM (AAP 6734.001) Sect3 Ch 7 Annex D Fatigue Management which no longer exists.
- b. The current DASM does not have fatigue management as a section in the manual. DFSB has published the Aviation Fatigue Management Guidebook version 1 which is detailed in point 9 below.
- c. AirA manages a number of SQNs and platforms and separates their individual requirements across the following Annexes:

- a. **Annex A: crew duty limits - single engine training aircraft**
- b. **Annex B: crew duty limits – Air Force Balloon**
- c. **Annex C: crew duty limits - B300**
- d. **Annex D: crew duty limits – B300 simulator**
- e. **Annex E: crew duty limits – 100 SQN operations**

Single engine training aircraft and Air Force Balloon do not make allowances for duty period adjustment based on planned commencement time, however, B300 and 100SQN do make an allowance.

- g. **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and [Table 6: Duty Period Adjustment - Planned Commencement Time - B300.](#)

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500–1359	No reduction
1400–1829	–2 hours
1830–0459	–3 hours

**Table 6: Duty Period Adjustment - Planned Commencement Time - B300**

- 6. **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and [Table 11: Duty Period Adjustment - Planned Commencement Time – 100SQN.](#)

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500–1359	No reduction
1400–1829	–2 hours
1830–0459	–3 hours

**Table 11: Duty Period Adjustment - Planned Commencement Time – 100SQN**

- d. AirA does not have any deliberate risk management documents pertaining to working hours under the WHS Risk Management area.

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- 7. AirA does not have any deliberate risk management documents pertaining to working hours under the Aviation Safety Risk Management area

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8. **REFERENCE F-8** - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)
  - a. 2FTS SI(OPS) 01-16 – Risk Management
  - b. 2FTS does not have any deliberate risk management documents pertaining to working hours under the WHS Risk Management area.

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- c. 2FTS does not have any deliberate risk management documents pertaining to working hours under the Aviation Safety Risk Management area.



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- d. No reference to a 2FTS SI on Crew Duty could be identified through historical archives. It is probable that one had never existed and all crew duty instructions were found in higher level documents (eg AirA)

### 9. REFERENCE F-3 - DFSB Aviation Fatigue Management Guidebook

The Defence Aviation Fatigue Management Guidebook has been designed to provide guidance on meeting an accountable person's obligations in relation to fatigue management within the Defence aviation context. More broadly, this guidebook is intended to familiarise Defence aviation personnel with contemporary concepts of fatigue management and to provide practical guidance for implementation in day-to-day operations. While parts of the guidebook focus on considerations specific to select Defence aviation occupations, the themes and concepts remain applicable to all operating contexts. For Defence organisations, it serves to complement Defence WHS requirements and should be used in conjunction with the Defence Safety Manual – Fatigue Management Policy and Guidance.

### REFERENCE F-4 - DFSB fatigue risk management chart – poster

WORK SCHEDULING & PLANNING – SHIFT WORK	Lower Risk	Moderate Risk	Higher Risk	POSSIBLE OPTIONS
<ol style="list-style-type: none"> <li>Length of shift</li> <li>Time of shift</li> <li>Speed and direction of shift</li> <li>Split shifts/variable shifts</li> </ol>	<ol style="list-style-type: none"> <li>Day shifts</li> <li>Forward rotation (sun/midnight)</li> </ol>	<ol style="list-style-type: none"> <li>Afternoon shifts</li> <li>Backward rotation (midnight/sun)</li> </ol>	<ol style="list-style-type: none"> <li>10 hours</li> <li>12 hours</li> <li>14 hours</li> <li>16 hours</li> </ol>	<ul style="list-style-type: none"> <li>Hours of work in a single shift; consider travel time to and from work</li> <li>Reduce working hours or implement additional controls</li> <li>Increase resourcing</li> <li>Eliminate the use of extended hours for safety-critical jobs or activities</li> <li>Control the length of shifts</li> <li>Limit the use of duty extensions</li> <li>Monitor hours of work</li> <li>Offer alternative accommodation or transport at the end of overtime/long shift</li> </ul>
<ol style="list-style-type: none"> <li>Shift end (for those working eight hours or more between 10.00pm and 6.00am)</li> <li>Length of shift</li> <li>Sequential night shifts</li> <li>Period of non-work following a sequence of night shifts</li> <li>Breaks during work – frequency</li> <li>Breaks between work periods – recovery time</li> </ol> <p>NOTE: Night shift in this chart refers to 12 hours (1900 to 0700)</p> <p>An example of a rotating defence roster</p> <ul style="list-style-type: none"> <li>0700 to 1600</li> <li>1600 to 2359</li> <li>2359 to 0700</li> </ul>	<ol style="list-style-type: none"> <li>After 10:00pm</li> <li>8 Hours</li> <li>Adequate and regular breaks</li> <li>Adequate time for sleep, travel, meals, etc.</li> </ol>	<ol style="list-style-type: none"> <li>Before 6:30am</li> <li>10 hours</li> <li>6 or more 8 hour shifts, 4 or more 10 hour shifts, 2 or more 12+ hour shifts</li> <li>Infrequent or no breaks</li> <li>Inadequate time for sleep, travel, meals, etc.</li> </ol>	<ol style="list-style-type: none"> <li>12 Hours</li> <li>14 Hours</li> <li>16 Hours</li> </ol>	<ul style="list-style-type: none"> <li>Limit the use of nightshifts for particular jobs or activities</li> <li>Schedule complex tasks for daytime</li> <li>Schedule work for hours when the risks may be lower – for example, complex and safety-critical tasks (ie don't schedule tasks between 2am and 6am and, to a lesser degree, between 2pm and 4pm)</li> <li>Avoid scheduling higher risk tasks on the first night of a night shift cycle. If unavoidable, when planning the task consider additional controls such as job rotation or additional rest breaks</li> <li>Minimise routine administrative tasks to ensure personnel can focus on core duties during their shift</li> </ul>

### Deliberate Risk Management and Risk Decision Briefs

- No deliberate risk management on the subject of working hours could be found from Air Academy or 2FTS – this includes in historical and archived folders under air training wing. It is probable that no deliberate risk assessment had ever been achieved.

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## 230626 - S155 COMCARE WH&S INFORMATION AND DOCUMENTATION

### References:

- A. REFERENCE A - 230623 - Email - s47E(c) - S155 Comcare WH&S information and documentation
- B. REFERENCE B - AAP 6734.001 Defence Aviation Safety Manual (2017).
- C. REFERENCE C - 2017 Workplace Policy and Risk Management
- D. REFERENCE D - 230626 - 2017 2FTS Daily Flying Program Extracts
- E. REFERENCE E - 230628 - 2023 2FTS Daily Flying Program Extracts
- F. REFERENCE F – 2023 Workplace Policy and Risk Management
- G. REFERENCE G - 111189 - Flying Supervisor Course - LMP Vers 2.3 Approved 20 Feb 23
- H. REFERENCE H - DFSB Aviation Safety Officer Courses [Pages - Welcome \(defence.gov.au\)](https://www.defence.gov.au/pages/welcome)

**TASK:** Provide information and / or documents regarding the alleged operation of the Department of Defence (Defence) Royal Australian Air force (RAAF) aircraft outside of the safe operating hours recommended by the RAAF safety manual (the safety manual) (however described), at RAAF Pearce in Bullsbrook (the workplace) during 2017.

### SECTION A: NOTICE MC00030706-NT01

#### 1. Provide written responses to the following questions:

- a) What were the recommendations of the safety manual regarding RAAF training flight hours at the workplace in 2017.

#### REFERENCE B - AAP 6734.001 Defence Aviation Safety Manual (2017)

- This reference has been used as it was the current Defence Aviation Safety Manual for the duration of 2017. AL4 (amendment) was published in 2015, however, when AL7 was published in Jun 17, AL4 was the published amendment for Section 3, Chapter 07, Annex D.
- The recommendations of the safety manual regarding RAAF training flight hours at the workplace are detailed below:

AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3 Chapter 07 Annex D, para 22a-e

22. Reliance on prescriptive hours of duty-rest periods does not guarantee that one is free from fatigue-related risk. After the application of limits, there may be further need for executives to manage fatigue risk, particularly where new schedules or operations are planned, or where operations move outside the published limits. Commanders and managers should consider, at a minimum, the following factors when managing the risks associated with fatigue:

- a. Scheduling and hours of work (e.g. consecutive night shifts, long hours in a single duty period or across a duty cycle, prolonged and/or regular periods of separation, short breaks within duty periods, inadequate recovery periods between duty periods and duty blocks, duty start/finish between 2200hrs and 0600hrs and irregular shift scheduling).
- b. Commuting time to and from work.
- c. Individual and non-work factors (e.g. lifestyle, home environment and health).
- d. Task related factors (e.g. workload, repetitive or monotonous work, sustained and/or complex physical or mental effort, length/complexity of flying mission).
- e. Work environment factors (e.g. adverse work conditions such as heat, noise, stress, tempo and organisational climate).

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AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3, Chapter 07, Annex D, para 24-25a-o

### Scheduling and Rostering

**24. Disruptive Schedules.** The impact of consecutive night duties, early starts and duty transitions provides a strong argument for additional fatigue management measures. For example, there is evidence to suggest duty periods that either begin or finish during the primary window of circadian low (between 0200 and 0600) have a higher potential of fatigue and increased requirements for recovery. Likewise, incorporating an intervening night's sleep between day/night and night/day duty transitions is recommended.

**25. Shift Design.** There is no 'optimal' shift schedule or design. There is considerable disagreement in the scientific literature, based mainly on civilian sector research, about the timing and duration of shifts, speed and direction of shift rotation, and flexibility of shift systems. Nevertheless, the list below provides some useful guidelines for developing shift schedules that are 'human-centred':

- a. Avoid any schedule that is not tied to the 24 hour circadian cycle.
  - b. Allow a major rest/sleep period within every 24 hours
  - c. Schedule the main rest period for the same time each 24 hour period.
  - d. Attempt either to allow at least a week on each shift before a rotation, or limit night shifts to only one or two consecutive nights (the latter is especially important for individuals who appear 'night shift intolerant'). Longer rotation periods are best if optimum performance is the primary priority because the body clock is allowed to adapt to the new schedule. The rationale for a one or two night rotation period is that the body clock has only just begun its adaptation and should readjust to the day shift relatively quickly and with few adverse side-effects. In addition, short night shift rotations generally provide for a more balanced social life and contribute to perceptions of equity among the pool of shift workers.
  - e. A span of successive night shifts should be limited to six for shifts of up to eight hours long, four for shifts of eight to ten hours long, and two for shifts of ten hours or longer. Wherever possible these limits should not be extended.
  - f. During periods of critical work demands, attempt to provide a 10 hour rest/non-work period each 24 hour period (this generally allows for a six to eight hour period for sleeping, depending on commute times). An eight hour rest period normally will only allow up to six hours of sleep which is below the recommended amount.
  - g. Avoid daily or continuously rotating schedules (those who advocate rapidly rotating shifts tend to do so mainly for social considerations).
  - h. Forward or clockwise shift rotation (morning to afternoon to night) is favoured as it allows longer rest intervals and parallels the body's natural tendency to extend past a 24 hour cycle. (Refer Footnote 1)
- i. When possible, do not commence morning shift before 0700 hours to avoid beginning work during the circadian trough and to maximise restorative sleep.
  - j. A span of successive morning or day shifts that start before 0700 should be limited to four, immediately following which there should be a minimum of two successive rest days. Wherever possible these limits should not be extended.
  - k. Shift length should be determined by the physical and mental characteristics of likely duties. Hours should be reduced for highly complex and demanding tasks (such as developing operational orders for complex and unanticipated events).
  - l. When possible, program short nap periods into night shifts. There is need for education about napping if this strategy is to be effective. Similarly, there may need to be a change in organisational culture if the practice of napping in the workplace is to be accepted.
  - m. Set shift rosters ahead of time and avoid sudden changes to allow workers to plan leisure time.
  - n. When possible, offer alternatives to members who may have difficulties adjusting to working hours.
  - o. When possible, consult with members and design shift rosters that will enable workers to meet both work and personal commitments.

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- The individual and organisational responsibilities are detailed below:

AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3, Chapter 07, Annex D, para 7-8

- |   |
|---|
| <p>7. Individual responsibilities with respect to the management of fatigue include:</p> <ul style="list-style-type: none"><li>a. arriving at work in a fit and rested state so that there is a reasonable expectation of being adequately alert throughout the duty period.</li><li>b. communicating fatigue-related safety and performance concerns with work peers and supervisors.</li><li>c. reporting all fatigue-related safety incidents.</li><li>d. being aware of fatigue and how to counter it in the workplace, and</li><li>e. identifying and managing fatigue-related hazards when encountered during a duty period.</li></ul> <p>8. Organisational (commanders and managers) responsibilities with respect to the management of fatigue include:</p> <ul style="list-style-type: none"><li>a. the assessment, monitoring, and reactive management of fatigue-related hazards.</li><li>b. developing policies, procedures and practices that manage fatigue-related risks.</li><li>c. ensuring safe work practices, such as sensible work schedules;</li><li>d. encouraging and incorporating the participation of personnel in the development of workplace policies, procedures and practices; and</li><li>e. providing tailored information and training in relation to the management of fatigue.</li></ul> |
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b) Were RAAF training flights being operated between 22.00hrs and 06.00hrs at the workplace in 2017 and why?

**REFERENCE D: 230626 - 2017 2FTS Daily Flying Program Extracts**

- Reference D contains screenshots extracted from ULTRA Flight Pro which is the programming tool and record management software used by Defence to manage and record the daily flying program.
- Yes – RAAF training flights were operated between 22.00hrs and 06.00hrs at 2FTS in 2017. These included:
  - Training flights for trainees as part of a ‘curriculum event’ on advanced pilot course
  - Staff continuation training flights to support trainee curriculum events
  - Staff continuation training flights to achieve instructor flying currency requirements

230626 – 2017 2FTS Daily Flying Program Extracts

**Training Flights and Personnel Working or Planned to Work between 2200-0600 hours in 2017**

Month, 2017	Training Flights	Staff Continuation Training Flights	Flying Supervisor	Training Flights – Planned but not flown	Staff Continuation Training Flights – Planned but not flown	Flying Supervisors – Planned but not required
Jan	6	-	2	6	-	1
Feb	41	8	16	1	-	-
Mar	-	-	-	-	-	-
Apr	23	3	7	-	-	-
May	34	2	7	7	-	-
Jun	-	-	-	-	-	-
Jul	15	4	7	15	-	1
Aug	19	3	8	4*	3*	7
Sep	-	-	-	-	-	-
Oct	18	5	9	11	1	1*
Nov	-	-	-	3	0	2
Dec	-	-	-	-	-	-
<b>Total</b>	<b>156</b>	<b>25</b>	<b>56</b>	<b>47*</b>	<b>4*</b>	<b>12*</b>

\* = this is the minimum number for this cell. It is almost certain that the number would be higher. See raw data below for an explanation.

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- c) What risk assessments were conducted in relation to RAAF training flights, flying between 22.00hrs and 06.00hrs at the workplace in 2017.

Note: the written explanation must include:

- i) What existing guidance, standards and/or assessments made by suitably competent person(s) Defence relied on to implement the associated control measures.

**REFERENCE C: 2017 Workplace Policy and Risk Management**

- REFERENCE C-1 is a collation of all hierarchical documents related to risk management of RAAF training flights and the operation of flights between 22.00 and 0600hrs in the workplace in 2017
- 2FTS did hold a risk register which is located in *REFERENCE C-2 – 2FTS MRP and RMP Risk Register*. There were a number of risk assessments conducted by 2FTS (*REFERENCE C-3* through to *REFERENCE C-6*) that are reasonable to associate RAAF training flights, flying between 22.00 and 06.00hrs at the work place in 2017. None of the identified documents contained any risk management or controls for flying between 22.00 and 06.00hrs at the workplace in 2017.
- ATW risk register and associated risk management files could not be found in the area that they should have been located on Objective as the 'Safety' folder was missing. From the image below, it can be seen that the 2FTS structure has a 'Safety' folder, and the ATW structure is missing the 'Safety' folder.
  - Further investigation would likely uncover the risk management folder and any associated controls, however, there was not enough time to gather the data. The current Wing Aviation Safety Officer at Air Academy is the best person to locate the desired files.
- As no control measures could be identified through the hierarchy of OIP (identified in REFERENCE C-1), it is reasonably practical to imply that control measures for flying between 22.00 and 06.00hrs were absent. As such, it cannot be determined what guidance, standards and/or assessments were made by suitability competent person(s) Defence relied on to implement the absent control measures.
  - If there were control measures in place, it is reasonable to assume that the following guidance would have been used.
- REFERENCE B - AAP 6734.001 Defence Aviation Safety Manual (2017)
- REFERENCE C-7 - Joint Directive 24\_2016 - The Defence Aviation Safety Framework – FOUO
- REFERENCE C-8 - AAP 8000.010 Defence Operational Airworthiness Manual
- REFERENCE C-9 - DI (AF) OPS 01-04 Flying Hours Management Cancelled 2017
- REFERENCE C-10 - 161031 - Instruction - ATW SI (OPS) 06-01 - Aviation Safety Management System
- REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits (31 OCT 16)
- REFERENCE C-12 - 2FTS SI (OPS) Combined - Published 18 Nov 15
- REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties
- REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management 7.0 (#24) (May 17)
- REFERENCE C-15 - 160704 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System (vU9552515)

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2017 Workplace Policy and Risk Management – 2017 Objective Record Management folder structure ATW

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d) What was the policy and or procedure regarding the hours of flight operation at the workplace in 2017.

REFERENCE B: AAP 6734.001 Defence Aviation Safety Manual (2017)

REFERENCE C: 2017 Workplace Policy and Risk Management

REFERENCE C-1 - 230628 - 2017 Workplace Policy and Risk Management

REFERENCE C-8 - AAP 8000.010 Defence Operational Airworthiness Manual

REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits (31 OCT 16)

REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties

REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management 7.0 (#24) (May 17)

- REFERENCE B extracts and are listed above in question 1. The main points can be found in the references.

AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3 Chapter 07 Annex D, para 22a-e

AAP 6734.001 Defence Aviation Safety Manual AL4 – Section 3, Chapter 07, Annex D, para 24-25a-o

- Reference C-1-230628 – 2017 Workplace Policy and Risk Management identifies the following:
  - REFERENCE C-8 - AAP 8000.010 – Defence Operational Airworthiness Manual contained the regulations and required that OIP be issued must ensure 'crew duty limits are specified'. It then refers to REFERENCE B (detailed above) which prescribes the policy and provides contemporary Defence aviation safety policy and risk management tools.
  - REFERENCE C-11 – ATW SI (OPS) 06-06 – Crew Duty Limits only prescribe maximum and minimum limits for PC-9 operations (extract below). It does not describe duty period adjustments based on working start or finish times for the PC-9 aircraft, but does for the B-300 in the same SI - B-300 is another aircraft managed by ATW.
  - REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management 7.0 (#24) (May 17) only prescribes normal crew days and normal duty periods (extract below). It refers to REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties which only provides the daily routine during daylight hours and does not mention night routines (extract below).

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REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits - Annex A (all)

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ANNEX A TO  
ATW SI(OPS) 06-06

**ANNEX A: CREW DUTY LIMITS - SINGLE ENGINE TRAINING AIRCRAFT**

**Table 1: Crew Duty limits: Duty Period - single engine training aircraft**

Maximum Number of Consecutive Flying Days	Maximum Duty Period (h)	Minimum Rest Period (h)
12 d	11 h	10 h

**Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft**

Sortie Type	Limit							
	Daily		In 48 Hours		In 7 Days		30 Days	12 Months
	FH	Sorties	FH	Sorties	FH	Sorties	FH	Sorties
QFI/SCT/Other	6 h	4	10 h	7	21 h	18	65 h	550
UGRAD Student	4 h	3	7 h	5	14 h	10	40 h	NA

1. **Limits.** Single engine training aircraft flying operations are to be conducted IAW the limits in Table 1: Crew Duty limits: Duty Period - single engine training aircraft and Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft.
2. **Limit Extension:**
  - a. **CO - Duty Period limit:** may approve an extension of up to 60 minutes.
  - b. **OC ATW:**
    - (1) **Duty Period limit:** may approve an extension of up to an additional 60 minutes (ie. for a total increase of 120 minutes to the promulgated limit)
    - (2) **Flying Hour and sortie limits—non-QFI tasking:** may approve an extension for appropriate tasking (eg. Pearce to East Sale transit and Roulette deployment)
3. **Rest Period following extended Duty Period.** When an actual duty period exceeds the promulgated limit, any required rest period is to be increased by one hour for every hour or part thereof of the duty period exceedance.
4. **Following 12 consecutive flying days:** a 24 hour rest period is required before the next duty period.

REFERENCE C-11 - 161031 - Instruction - ATW SI (OPS) 06-06 - Crew Duty Limits - Annex B, para g

- g **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and Table 6: Duty Period Adjustment - Planned Commencement Time - B300.

**Table 6: Duty Period Adjustment - Planned Commencement Time - B300**

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500-1359	No reduction
1400-1829	-2 hours
1830-0459	-3 hours

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REFERENCE C-14 - 2FTS SI (OPS) 06-06 - Crew Duty Limits and Fatigue Management, Para7-10

7. **Nominal crew duty day** The crew duty day commences from the time of arrival at work. In order to maximise the workday this should be either, just prior to morning brief, as stipulated in FlightPro, or one hour before taxi, whichever is most appropriate. Cessation of work is normally as per 2FTS SI(ADMIN) 5-1 or 30 minutes after aircraft shutdown taking into account the following limitations:

- a. The maximum normal crew duty day is 10 hours.
  - b. FLTCDRs may approve up to 11 hours.
8. **Rest periods.** The limitations for rest periods are:
- a. A minimum of 12 hours between crew duty days.
  - b. FLTCDRs may approve a minimum of 10 hours

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2FTS SI(OPS) 06-06

9. **Nominal duty periods.** Limitations of duty periods are as follows:

- a. The maximum continuous duty period is 10 days followed by a minimum of a 24-hr break.
- b. FLTCDRs may approve 12 days continuous duty but this must be followed by a 48-hr break.

10. **Monitoring.** Staff and Student pilots are to monitor their own flying rates. Students are to advise their instructor if they are likely to exceed any duty limit contained in ATW SI(OPS) 06-06. Notwithstanding the need for self-supervision, staff are to be aware of the flying rate and duty periods of their respective student(s).

REFERENCE C-13 - 2FTS SI (ADMIN) 05-01 - Functional Responsibilities and Duties, para 5+6

**Work Routine**

5 **Daily routine - staff.** The normal working day routine for 2FTS staff is to commence at 0750 H and ends at 1700 H (1500 H on a Friday). FLTCDRs may vary these times and Ultra will notify individuals of different start and cease work times if required. Members are encouraged to maintain a healthy work life balance, and when not required for tasking may vary these hours in consultation with their supervisor

6 **Daily routine - students.** Students are to comply with the following routine on working days:

- a. Breakfast - As per meal times, OMA (living in students)
- b. Assembly - refer para 7 below
- c. Morning briefing - 0750 H
- d. Lunch - as required by the flying program
- e. Stand-down - 1650 H (1500 H Friday)
- f. Dinner - As per meal time, OMA (living in students)

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e) Is the operation of RAAF training flight aircraft outside of times recommended by the safety manual ongoing at the workplace?

- REFERENCE E: 230628 - 2023 2FTS Daily Flying Program Extracts
- REFERENCE F-2 - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021
- REFERENCE F-3 - DFSB Aviation Fatigue Management Guidebook
- REFERENCE F-4 - DFSB fatigue risk management chart – poster
- REFERENCE F-5 - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management
- REFERENCE F-6 - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System
- REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits
- REFERENCE F-8 - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)
- REFERENCE F-9 - 220516 - AE628 - CRP - PC21 Night Flying

- The current 2023 recommendations by the safety manual (Reference F-2 DASM) do not contain fatigue management details as it did in previous versions (REFERENCE B). The Defence Flight Safety Bureau (DFSB) has published Fatigue Management Guidance in REFERENCE F-3 and F4.
- REFERENCE F-4 - DFSB fatigue risk management chart identifies the following guidance for risk management and controls:
  - Avoid start or finish times between 2200 and 0700
  - Considerations for those shifts working between 10.00pm and 6.00am

REFERENCE F-4 – DFSB Fatigue Risk Management Chart

WORK SCHEDULING & PLANNING – SHIFT WORK	Lower Risk	Moderate Risk	Possible Options
1. Length of shift 2. Time of shift 3. Speed and direction of shift 4. Split shift / variable shifts			Hours of work in a single shift; consider travel time to and from work Reduce working hours or implement additional control Increase resourcing Eliminate the use of extended hours for safety critical jobs or activities Control the length of shifts Limit the use of duty extensions Monitor hours of work Offer alternative accommodation or transport at the end of overtime/long shift
1. Shift end (for those working eight hours or more between 10.00pm and 6.00am) 2. Length of shift 3. Sequential night shifts 4. Period of non-work following a sequence of night shifts 5. Breaks during work – frequency 6. Breaks between work periods – recovery time  NOTE: Night shift in this chart refers to 12 hours (1900 to 0700)  An example of a rotating defence roster: + 0700 to 1600 + 1600 to 2359 + 2359 to 0700			Night shifts, including the number of consecutive night shifts Limit the use of nightshifts for particular jobs or activities Schedule complex tasks for daytime Schedule work for hours when the risks may be lower – for example, complex and safety critical tasks (ie don't schedule tasks between 2am and 6am and to a lesser degree, between 2pm and 4pm) Avoid scheduling higher risk tasks on the first night of a night shift cycle. If unavoidable, when planning the task consider additional controls such as job rotation or additional rest breaks Minimise routine administrative tasks to ensure personnel focus on core duties during their shift

- The DASM does not prohibit operations outside the recommended times. It does however, through the DFSB guidebooks, recommend that deliberate risk management take place for planned operations between 2200 and 0600hrs in order to ensure the risk is being managed.

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- Reference E contains screenshots extracted from ULTRA Flight Pro which is the programming tool and record management software used by Defence to manage and record the daily flying program.
- RAAF training flights are being operated between 22.00hrs and 06.00hrs at 2FTS in 2023 to 28 Jun 23. These included:
  - Training flights for trainees as part of a 'curriculum event' on advanced pilot course
  - Simulator training flights for trainees as part of a 'curriculum event'
  - Staff continuation training flights to achieve instructor flying currency requirements

REFERENCE E - 230628 – 2023 2FTS Daily Flying Program Extracts

Training Flights and Personnel Working or Planned to Work between 2200-0600 hours in 2023						
Month, 2023	Training Flights	Simulator Training Flights	Flying Supervisor	Training Flights – Planned but not flown	Simulator Training Flights – Planned but not flown	Flying Supervisors – Planned but not required
Jan	17	4 <sup>^</sup>	3	2	-	1
Feb	10	8	6	3	-	2
Mar	14 <sup>^</sup>	4	4	19	1	4
Apr	2	-	1	-	-	-
May	-	-	-	-	-	-
Jun	-	-	-	-	-	-
<b>Total</b>	<b>33</b>	<b>16</b>	<b>14</b>	<b>24</b>	<b>1</b>	<b>7</b>

<sup>^</sup> = this denotes a staff continuation training event that has been added to this cell in order to reduce the number of columns required for this table. See raw data below detailed breakdown.

**Note: If the operation of aircraft outside of times recommended by the safety manual is ongoing, the written explanation must include:**

- What assessments were conducted to identify potential hazards and risks associated with RAAF training flights occurring outside of times recommended by the safety manual;**
  - No risk assessments or control measures could be identified across the hierarchy of OIP (identified in REFERENCE F-1) for training flights between 22.00hrs and 0600hrs. It is reasonably practical to imply that control measures for flying between 22.00 and 06.00hrs are absent.
    - If there were control measures in place, it is reasonable to assume that the following guidance would be used:
      - REFERENCE F-2 - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021
      - REFERENCE F-3 - DFSB Aviation Fatigue Management Guidebook
      - REFERENCE F-4 - DFSB fatigue risk management chart – poster
      - REFERENCE F-5 - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management
      - REFERENCE F-6 - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System
      - REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits
      - REFERENCE F-8 - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)
      - REFERENCE F-9 - 220516 - AE628 - CRP - PC21 Night Flying

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- ii) What controls have been implemented to prevent and/or mitigate each of the identified risks;
- No control measures could be identified across the hierarchy of OIP (identified in REFERENCE F-1) for training flights between 22.00hrs and 0600hrs. It is reasonably practical to imply that control measures for flying between 22.00 and 06.00hrs are absent.
    - If there were controls, the risk management would likely be listed in REFERENCE F-9 and incorporated into REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits for aircrew to apply
    - REFERENCE F-7 - 230627 - AirA SI (OPS) 06-06 - Crew Duty Limits only prescribe maximum and minimum duty limits for PC-21 operations (extract below). It does not describe duty period adjustments based on working start or finish times for the PC-21 (single engine training aircraft), but does for the B-300 and 100SQN in the same SI - 100SQN is another flying SQN managed by AirA.

REFERENCE F-7 - 230627 - AirA SI (OPS) 06-06 - Crew Duty Limits - Annex A, para 1 - 4

**ANNEX A TO**  
**AirA SI (OPS) 6-6**

**ANNEX A: CREW DUTY LIMITS - SINGLE ENGINE TRAINING AIRCRAFT**

Maximum Number of Consecutive Flying Days	Maximum Duty Period (h)	Minimum Rest Period (h)
12 d	11 h	10 h

Table 1: Crew Duty limits: Duty Period - single engine training aircraft

Sortie Type	Limit							
	Daily		In 48 Hours		In 7 Days		30 Days	12 Months
	FH	Sorties	FH	Sorties	FH	Sorties	FH	Sorties
QFI/SCT	6 h	4	10 h	7	21 h	13	65 h	550
Other								
U/GRAD								
Trainee	4 h	3	7 h	5	14 h	10	40 h	NA

Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft

1. **Limits:** Single engine training aircraft flying operations are to be conducted IAW the limits in Table 1: Crew Duty limits: Duty Period - single engine training aircraft and Table 2: Crew Duty limits: Flying Hours and sorties - single engine training aircraft. PC-21 FTD time counts towards a pilot's flying hours and sortie limits.

2. **Planned Duty Period:** For planning purposes, a duty period will span from 60 minutes before first lines time to 30 minutes after the last lines time.

**Limit Extension:**

3. **CO - Duty Period limit:** may approve an extension of up to 60 minutes

4. **OC AirA:**

a. **Duty Period limit:** may approve an extension of up to an additional 60 minutes (ie. for a total increase of 120 minutes to the promulgated limit)

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REFERENCE F-7 – 230627 – AirA SI (OPS) 06-06 – Crew Duty Limits - Annex C, para 11 g

g **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and Table 6: Duty Period Adjustment - Planned Commencement Time - B300.

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500-1359	No reduction
1400-1829	-2 hours
1830-0459	-3 hours

Table 6: Duty Period Adjustment - Planned Commencement Time - B300

REFERENCE F-7 – 230627 – AirA SI (OPS) 06-06 – Crew Duty Limits - Annex E, para 6

6 **Duty Period adjustment - planned commencement time.** The allowable duty period should be reduced according to the duty period planned commencement time and Table 11: Duty Period Adjustment - Planned Commencement Time – 100SQN.

Duty Period Planned Commencement Time	Crew Duty Limit Reduction
0500-1359	No reduction
1400-1829	-2 hours
1830-0459	-3 hours

Table 11: Duty Period Adjustment - Planned Commencement Time – 100SQN

iii) **What existing guidance, standards and/or assessments made by suitably competent person(s) (competent person(s)) Defence relied on to implement the associated control measures, (including the qualifications, training, and experience of the competent person(s)); and,**

- As no control measures could be identified through the hierarchy of OIP (identified in REFERENCE F-1), it is reasonably practical to imply that control measures for flying between 22.00 and 06.00hrs are absent. As such, it cannot be determined what guidance, standards and/or assessments were made by suitably competent person(s) Defence relied on to implement the absent control measures.

– If there were control measures in place, it is reasonable to assume that the following guidance would be used:

- REFERENCE F-2 - Defence Aviation Safety Manual - DASM - Edition 3 WEF 2021
- REFERENCE F-3 - DFSB Aviation Fatigue Management Guidebook
- REFERENCE F-4 - DFSB fatigue risk management chart – poster
- REFERENCE F-5 - 200908 - AC SI(OPS) 06-04 - Air Command Aviation Safety Management
- REFERENCE F-6 - 220926 - Instruction - AFTG SI(OPS) 06-01 - Aviation Safety Management System
- REFERENCE F-7 - 230627 - AirA SI (OPS) 6-6 Crew Duty Limits
- REFERENCE F-8 - 230627 - 2FTS SIs Compilation (specifically (OPS) 01-16 – Risk Management)
- REFERENCE F-9 - 220516 - AE628 - CRP - PC21 Night Flying

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- iv) **What training, information and instruction regarding the identified hazards, risks and associated control measures was provided to Defence workers tasked with managing and operating RAAF training flights outside of times recommended by the safety manual.**

REFERENCE F-10: 220705 - AC SI(OPS) 01-39 - Aviation Medical Requirements

REFERENCE G: 111189 - Flying Supervisor Course - LMP Vers 2.3 Approved 20 Feb 23

REFERENCE H: DFSB Aviation Safety Officer Courses [Pages - Welcome \(defence.gov.au\)](#)

- 220705 - AC SI(OPS) 01-39 - Aviation Medical Requirements
  - This document provides the training and currency requirements that must be met for all aircrew.
  - The Aviation Medical training listed in the document covers physiological effects of fatigue and the management of fatigue for aircrew. The training is delivered by the Institute of Aviation Medicine (IAM) [Pages - Courses at IAM \(defence.gov.au\)](#).
- Flying Supervisor Course – Conducted by Central Flying School for all flying supervisors in the ADF. [Pages - Flying Supervisor Course \(defence.gov.au\)](#)

REFERENCE G - 111189 - Flying Supervisor Course - LMP Vers 2.3 Approved 20 Feb 23 – Section 2.1

<b>OFFICIAL</b> Flying Supervisor Course (111189)	
<b>SECTION 2 – CURRICULUM</b>	
<b>2.1 Course Overview</b>	
<b>Course Aim</b>	To graduate personnel with the knowledge and attitudes necessary to perform the role of a Flying Supervisor.
<b>Course Description</b>	The FLYING SUPERVISOR course, aims to graduate members with the knowledge and attitudes necessary to authorise flights in accordance with authoritative instructions, and with a basic knowledge of the supervisory responsibilities specifically required of a flying supervisor.

- Aviation Safety Officer Courses – Conducted by DFSB for Aviation Safety Officers that are trained to conduct and advise on Aviation Risk Management policy and procedures. Information can be found on the DFSB intranet page [Pages - Welcome \(defence.gov.au\)](#)

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**SECTION B:**

Provide unredacted copies of each document Defence relied on to support the written responses provided for items 3a,3b,3c,3c(i), 3d, 3e and 3e(i) to 3e(iv) (inclusive).

( Note in relation to 3a – for ease of processing please only provide sections in the manual relevant and specific to recommended flight times for aircraft ).

- All references that have been listed in this document or have been used to ascertain information about past or present policy or guidance have been attached in the same area as this document at the time of submission.

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