Australian Government
Civil Aviation Safety Authority

Civil Aviation Advisory Publication

May 2012

CAAPs provide guidance, interpretation and explanation on complying with the Civil Aviation Regulations (CAR) or Civil Aviation Orders (CAO).

This CAAP provides advisory information to the aviation industry in support of a particular CAR or CAO. Ordinarily, the CAAP will provide additional 'how to' information not found in the source CAR, or elsewhere.

A CAAP is not intended to clarify the intent of a CAR, which must be clear from a reading of the regulation itself, nor may the CAAP contain mandatory requirements not contained in legislation.

Note: *Read this advisory publication in conjunction with the appropriate regulations/orders.*

Flight crew licensing flight reviews balloons

The relevant regulations and other references

- Civil Aviation Regulations 1988 (CAR) 5.143
- Civil Aviation Orders (CAO) 95.53 and 40.7
- Civil Aviation Safety Authority (CASA) *Flight Crew Licensing Procedures Manual* available at http://www.casa.gov.au/

This CAAP will be of interest to

This Civil Aviation Advisory Publication (CAAP) applies to all commercial balloon pilots.

Why this publication was written

Flight reviews have been a requirement to exercise the privileges of all licences since 1980. In the context of this CAAP a flight review includes a biennial flight review as required by CAR 5.143 or an annual proficiency check as required by CAO 95.53.

CAO 95.53 has introduced a requirement for line pilots in a Balloon charter AOC to complete a flight review within the 12 months preceding a passenger carrying flight.

This CAAP provides guidance to licensed pilots, flight instructors and chief pilots authorised to conduct flight reviews, Approved Testing Officers (ATO) and CASA Flight Operations Inspectors (FOI) about how balloon flight reviews should be conducted. All these personnel are referred to as 'assessors' in this CAAP.

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Status of this CAAP

This topic was previously addressed in CAAP 5.81. This is the first issue of a balloon specific flight review CAAP and updates the content of the previously issued CAAP 5.81.

For further information

For application and policy advice contact CASA's Flying Standards Branch (Telephone 131 757).

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1. Acronyms

AOC Air Operator's Certificate

ATO Approved Testing Officer

CAAP Civil Aviation Advisory Publication

CAO Civil Aviation Order

CARs Civil Aviation Regulation 1988

CASA Civil Aviation Safety Authority

CPL Commercial Pilot Licence

FOI Flight Operations Inspector

MET Meteorological report

NOTAM Notice to Airmen

PICUS Pilot-in-command under supervision

TEM Threat and error management

VFR Visual flight rules

2. Definitions

Annual – Once a year

Bi-annual – Twice a year.

Biennial – Once every two years.

Checklist – A checklist derived from information set out in the Flight Manual/Pilot Operating Handbook (POH), placards or other documents provided with the balloon, necessary to ensure the safe operation of the balloon.

Controlled corrective action – Timely and coordinated use of controls without abrupt manoeuvring is made to achieve specified performance.

Errors – Action, or inaction, that results in deviation from appropriate intentions.

Human factors – Optimising the relationship within systems between people, activities and equipment.

Safe(ly) – A manoeuvre or flight is completed without injury to persons, damage to balloon or breach of aviation safety regulations, while meeting the standards specified by CASA.

Stakeholders – Any person involved with, or affected by, the flying operation to be performed.

Standard operating procedures – Any procedure included in the operations manual of an Air Operator's Certificate (AOC) or Operating Certificate (OC) holder.

Threats – Events or hazards whose occurrence is outside the control of the pilot(s) and which may threaten the safety of the flight.

Undesired aircraft state – Undesired aircraft states are flight-crew induced aircraft position or speed deviations, misapplication of flight controls, or incorrect systems configuration, associated with a reduction in safety margin.

3. Why this CAAP is issued

3.1 This CAAP is issued to provide guidance to all persons who undergo or conduct flight reviews. The aim is to explain the intent of a flight review and to provide guidance to pilots undertaking a flight review and chief pilots, instructors, ATOs and CASA FOIs who may conduct a review.

3.2 Another purpose of this CAAP is to achieve consistency and standardisation with flight reviews to ensure a good safety outcome without incurring unreasonable expense.

4. Intent of a flight review

4.1 The flight review should be seen in the context of a broader aviation safety philosophy. The flight review, although important (and required by legislation), is only one of the processes that contribute to continuing pilot proficiency and consequently the safety of flight. A flight review every one or two years does not, of itself, ensure safety.

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Safety is achieved when each pilot takes responsibility for a continuing process of hazard identification and risk management for their own aviation activities. In addition to the flight review, this continuing process could include:

- maintaining existing knowledge;
- increasing knowledge;
- regularly practicing piloting skills;
- setting personal limits;
- applying robust human factors practices; and
- actively applying threat and error management (TEM) concepts and principles.

4.2 In this continuing process of hazard identification and risk management, the two key aspects of a flight review are:

- to provide an opportunity for pilots to refresh their flying skills and knowledge; and
- to provide an independent assessment of a pilot's skills and knowledge.

4.3 These two aspects are fundamental to the goal of keeping aviation safety risks for the pilot at, or below, an acceptable level. Both aspects (refreshing skill and knowledge, and the independent assessment) are equally important and the process should be a collaborative endeavour between the pilot undergoing the review and the assessor conducting it.

4.4 To be a successful collaboration, the person undergoing the review, and the assessor have a shared responsibility. This responsibility requires an honest statement of the ballooning activities that have been undertaken over the past two years, and more importantly an indication of what type of flying the pilot anticipates performing during the next two years.

The assessor should then:

- plan an appropriate flight review for the pilot’s prevailing circumstances;
- be willing to commit time and effort to identify deficiencies in skills and knowledge; and
- then to provide remedial instruction and advice as required.

4.5 Ideally the assessor should aim to make the event something that pilots look forward to, rather than dread. This can be achieved by establishing good communications, clearly identifying the requirements of the flight review and committing to ensuring that the pilot will benefit from the exercise. Assessors should endeavour to provide positive feedback and, where deficiencies are identified, rectify the problems without making the pilot feel inadequate.

5. So, what is a flight review?

5.1 In this CAAP the process of undertaking an assessment of a pilot’s skills and knowledge is referred to as a flight review. The flight review could be a biennial flight review as required by CAR 5.143 or an annual proficiency check as required by CAO 95.53.

5.2 Appendix A of this CAAP summarises the range of skills, knowledge and behaviours to be assessed.

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6. Who may conduct a flight review?

6.1 A flight review in a balloon may be conducted by:

- a chief pilot of a balloon AOC holder may conduct annual reviews of line pilots employed in the AOC and chief pilots in other balloon AOCs;
- an authorised balloon flight instructor who holds the appropriate balloon endorsement may conduct an annual review as required by CAO 95.53 or a 2-yearly review as required by CAR 5.143;
- a CASA FOI who holds the appropriate balloon endorsement; or
- a person authorised by CASA.

6.2 The CAR definition of an authorised flight instructor states that the flight instructor must either hold an AOC or be employed by, or instruct under, an arrangement with an AOC holder that authorises balloon flying training.

7. Substitutes for a flight review

7.1 Any licensed commercial balloon pilot may substitute a flight review, if, within a period of 12 months before the proposed flight, they have:

- passed a flight test for the purpose of the issue of a balloon licence, or issue or renewal of a balloon pilot rating;
- satisfactorily completed a balloon proficiency check and the conducting organisation has made an entry to that effect in the pilot's log-book; or
- satisfactorily completed balloon conversion training conducted by the holder of a balloon instructor rating.

7.2 This means that if, for example, a pilot undertook a proficiency check or completed training for the issue of a balloon endorsement within a 12 month period since the last review, they would not be required to do another review until one year after that date for the category of balloon in which the assessment flight was conducted.

7.3 However, common sense should also prevail. If a person is within the 12 month period following a flight review, but intends to undertake a flight in an balloon they have not operated for some time or, for example, operate at a location they have not previously operated that has unique environmental aspects, it would be prudent to complete a flight with a flight instructor to ensure competence, confidence and safety.

8. How should a flight review be conducted?

8.1 It is now pertinent to restate the purpose of a flight review: to ensure that the pilot is safe to operate a balloon. In this CAAP 'safe' means that a manoeuvre or flight is completed without injury to persons, damage to balloon or breach of aviation safety regulations, while meeting the standards specified by CASA. If we analyse this definition, the term 'without injury or damage' requires no explanation. However, 'breach of aviation safety regulations' and 'meeting standards specified by CASA does need clarification.

8.2 Pilots rarely breach safety regulations intentionally, but sometimes, through lack of knowledge or inattention, this may occur. The same concept applies to meeting the CASA flight standards (or skills and knowledge). These standards are those specified in the relevant syllabus or CAO. Few pilots intentionally fail to meet the skills and knowledge standards, but lack of practice or currency can lead to this outcome.

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8.3 In the time available to conduct a flight review, it would be unrealistic to attempt to assess all of a pilot's skills and knowledge. However, it is possible and important to evaluate and guide a pilot through those safety-critical items of skills and knowledge or elevated risk that, if deficient, could result in 'damage to balloon and/or injury to persons'. Sequences that, if not conducted properly, could lead to damage or injury (unsafe flight) are:

- missed or aborted approaches and landings;
- competent operation of all balloon systems;
- management of emergencies; and
- application of threat and error management and human factors practice.

8.4 Misapplication of certain aspects of aeronautical knowledge could result in dire consequences. It is important to ensure that a pilot is able to:

- interpret and apply meteorological and Notice to Airmen (NOTAM) information;
- calculate weight and balloon performance;
- demonstrate a sound understanding of weight and performance limitations on an balloon and any degrading effects on normal operations;
- apply robust checklist procedures;
- understand and operate all balloon systems;
- understand and comply with air traffic requirements and procedures;
- understand airspace structure, procedures and any changes;
- recall critical emergency procedures; and
- interpret and certify a maintenance release and perform a daily inspection.

8.5 The two lists above are not comprehensive, and assessors should design a flight review that is appropriate for the pilot under review. The assessor should establish clear and open communication and endeavour to draw from the pilot any information, including relevant details from the pilot's log-book, which will help him or her to design an appropriate flight review.

8.6 To properly inform the task of designing the flight review, the pilot under review should accurately detail what flying they have completed over the past 12 months, and what flying they anticipate they will undertake in the future. They should also explain any areas of skills or knowledge where they feel deficient. A pilot usually knows if he/she is uncomfortable or not confident with some flight sequences or aeronautical knowledge—in this case, they should tell the assessor and clarify areas of doubt by asking questions.

8.7 Once the assessor has determined what the flight review will involve, it should be clearly explained to the pilot. It would also be appropriate to advise the pilot to review the balloon flight manual and other applicable publications. The assessor should then plan the exercise to ensure the most benefit to the pilot under review.

8.8 Flight planning should be a collaborative effort and generate discussion. The assessor can lead the pilot to identify possible threats and propose solutions to ensure a safe outcome to the flight. Different scenarios can be utilised to demonstrate alternate and contingency planning requirements.

8.9 The pre-flight discussion should investigate and enhance the pilot's knowledge over a broad range of subjects, and be used to identify any weaknesses that could affect the safety of flight. As a basic consideration, the assessor should concentrate on information that, if not known, could result in unsafe flight. For example, to be unaware of changes to airspace structure or procedures could lead to a dangerous violation of controlled airspace and subsequent collision. Assessors should be prepared to explain these changes and confirm that the pilot's knowledge is up-to-date.

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8.10 During pre-flight planning, weight, loading, and balloon performance should be calculated. This will provide an opportunity to see if the pilot can apply this information in a practical sense. Balloon system knowledge and familiarity with emergency procedures should also be explored. It is possible that pilots who do not fly regularly may pay little attention to these aspects.

8.11 Responsibility for determining any deficiencies in aeronautical knowledge, then refreshing the pilot's knowledge and confirming their understanding rests with the assessor.

8.12 The assessor may choose to use a written questionnaire to assist in assessing a pilot's underpinning knowledge.

8.13 The flight component of the review could vary significantly from pilot to pilot. If the pilot flies regularly, maintains currency and is competent, the review may just be a check with minimal instruction required. On the other hand, if a pilot flies infrequently, more flight instruction may be required to restore lost skills and bring the pilot up to a safe standard. However, it is very important to ensure that those flying sequences which, if mishandled, could cause an accident, are examined and addressed where required. When assessors identify a deficiency in any of these phases of flight, they should take the time to ensure the pilot's flying and operating techniques are of an acceptable standard.

8.14 It should be clear in the mind of the assessor that simulated emergencies must not be carried out on passenger carrying flights if the simulated emergency could present any risk to passengers in the event of a mishandling during the simulation. If the assessor feels that a pilot requires proficiency testing in emergency situations, a separate flight should be planned, in which no passengers would be carried.

8.15 Another important area that demands attention is threat and error management (TEM) and human factors (see Appendix A of this CAAP). TEM is discussed in more detail later and human factors are the 'mind skills' that are applied to TEM. These skills include:

- maintaining effective lookout;
- maintaining situation awareness;
- assessing situations and making decisions;
- setting priorities and managing tasks; and
- communications and interpersonal relationships.

8.16 Assessors should discuss these subjects with pilots before flight and assess their airborne performance in the application of these skills. Most balloon accidents can be traced to deficiencies in human factors skills, rather than poor handling or technical failures. Pilots should be aware of the implications of deficiencies in these important skills. Assessors conducting a flight review should be able to objectively assess these single-pilot human factors by observing the pilot's behaviour and the outcome of his or her flight activities and decisions.

8.17 When designing a flight review to suit the particular needs of an individual pilot, assessors should address those items considered 'obligatory' as they could, if mishandled, lead to unsafe flight, and include any other aspects that may be appropriate to the individual pilot. The flight review form at Appendix B has attempted to identify these items and a space is left for the assessor to enter any other appropriate items. However, it should be remembered that a flight review should be a collaborative endeavour between the reviewing pilot and the person undergoing the review, with the aim of providing maximum benefit, including training where appropriate, to the pilot being assessed.

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8.18 In summary, it is important to note that a flight review is not a flight test. Consequently, the assessor is both permitted and expected to provide instruction, when required. Nevertheless, assessment of competency is the outcome required by a flight review. Accordingly, after conducting remedial training in whichever sequences are necessary, the pilot must be able to demonstrate competency in that sequence in observed conditions. In other words, a flight review should be neither solely: training, nor only assessment, but an appropriate blend of the two. The final outcome is the pilot being assessed as competent to exercise the privileges of his or her licence.

9. How long should a flight review take?

9.1 A flight review for a CP(B)L, should take approximately three (3) hours. This would entail an hour of discussion and questions and two (2) hours of set up and flight time. Realistically, a pilot should set aside at least half a day to meet this requirement. If time is a factor, there is nothing to prevent a flight review from being conducted over a number of days.

9.2 Notwithstanding all of the above, any pilot should approach the exercise as an opportunity to improve their skills and knowledge, reacquaint themselves with the aviation safety culture and enjoy the experience. Dedicating one day every two (2) years in the case of a biennial flight review as required by CAR 5.143 (Commercial (balloon) pilot: regular flight reviews required), or annually for a proficiency check as required by CAO 95.53, (Exemption from provisions of *the Civil Aviation Regulations 1988* - manned balloons and hot air airships - aerial work and charter operations, flight training, conversion training, flight testing and flight reviews) to this event should not be seen as a great price to pay to maintain the privileges of the licence.

10. How should I choose a person to conduct a flight review?

10.1 A flight review will normally be conducted by the chief pilot of an AOC. However, if the chief pilot is unavailable, or if the chief pilot themselves are required to complete a flight review, then when choosing a person to conduct a flight review, pilots should select someone from whom they feel they will gain the most benefit. It is important to ensure the assessor is a good communicator and is able and willing to provide good flight instruction. Previous experience with an assessor is probably one of the more reliable guides, but word of mouth is also a method to select a suitable assessor

10.2 In many cases, because of remoteness or unique circumstances, the availability of persons qualified to conduct a flight review may be limited. However, pilots should not take flight reviews lightly; it is an opportunity to maintain an acceptable level of safety for the pilot under review and their passengers; and to learn.

11. What balloon should I use?

11.1 The CARs clearly state that a flight review must unless otherwise approved by the assessor be conducted in the balloon type in which the pilot had flown as pilot in command the most flight time during the last ten flights undertaken. In most circumstances this would probably represent the flying activities that the pilot generally conducts.

11.2 However unique situations may occur where, for example, a pilot may have completed one (1) flight of 5.5 hours in one balloon type and 5.0 hours on nine other flights in another type. The person conducting the review may choose to use the latter balloon for convenience or availability. The decision about which balloon to use can be made by the assessor.

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12. Logging of flight time

12.1 The person undergoing a flight review is pilot-in-command (refer CAO 95.53) provided that the conditions in CAO 95.53 are satisfied.

13. Log book entries for flight reviews

13.1 When a pilot successfully completes a flight review, the person conducting the review must make an entry into the pilot's log book stating that he or she has successfully completed the flight review. If the pilot completes a proficiency check or balloon conversion training, he or she is deemed to have completed a flight review, and an entry should be made to that effect in the pilot's log book by the organisation or person who completed the training. The wording on the 'cut off' sheet on the form in Appendix B could be used. Notwithstanding the previous sentences, it is not mandatory to make an entry in the pilot's log book for a rating issue or renewal or conversion training, other than the appropriate 'sticky strip'.

13.2 The form in Appendix B may be used by assessors. It is important to complete the form and CASA recommends that the assessor retains the form and gives a copy to the pilot who is assessed. All the items covered in the 'pre-flight', airwork' and 'navigation/FPA' columns should be addressed and assessors can add any other information or sequences they think appropriate. Additionally, the back of the form could be used to detail any further training or other information that could benefit the pilot undertaking the flight review.

13.3 When pilots have an electronic log book, they must also compile a bound, printed version that can be signed by the person who conducted the flight review.

13.4 The flight review form at Appendix B has a cut off section that may be stuck into the pilot's log book if desired. CASA recommends that the person conducting the flight review retains the form for at least three years. Flying schools are required to maintain a record of all flight reviews conducted, for a minimum of three (3) years.

14. Unsatisfactory completion

14.1 If a pilot is unable to successfully complete a flight review, their log book must not be certified. In such a case the person conducting the flight review should provide guidance to the pilot on what action to take to achieve a safe standard.

14.2 When a pilot is still within the two (2) year period of the previous review, he or she may continue to act as pilot in command for operations where qualified when it is safe to do so. Subsequent flights should be limited to improving the pilot's skill to ensure a satisfactory outcome of a later flight review.

14.3 If the two (2) year period since the last successful flight review has expired, the pilot can no longer conduct a flight as pilot in command. Further flights must be with an authorised flight instructor.

15. Standard required of a CPL

15.1 When conducting a flight review an assessor must clearly determine the standard required of a CPL holder. Refer to the CASA Day VFR syllabus for the applicable aeronautical knowledge standards as a guide.

15.2 A commercial pilot should demonstrate that their control of the balloon or procedure is such that at all times the successful outcome is assured.

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16. Threat and error management and single-pilot human factors

16.1 The International Civil Aviation Organization (ICAO) has recommended that threat and error management becomes an integral component of all pilot training. CASA introduced TEM and single-pilot human factors into pilot training in early 2009, and flight instructors, ATOs and FOIs should develop their assessing and teaching skills to incorporate these items into flight reviews.

16.2 The Guild of Air Pilots and Navigators (GAPAN) conducted courses throughout Australia in 2008, to train flight instructors to apply TEM techniques when training pilots. Flight standards for TEM and single-pilot human factors (entitled 'Manage Flight') are available at Appendix A of this CAAP.

16.3 TEM is an operational concept applied to flight that includes the traditional role of airmanship and provides a structured and proactive approach that pilots can take to the identification and management of threats and errors that could affect the safety of flight. An inseparable link exists between TEM and crew resource management or single-pilot human factors.

16.4 The single-pilot human factors are listed in paragraph 8.9 of this CAAP; assessors are required to develop methods to explain how human factors are applied to TEM. For example, how to apply the components of situational awareness (awareness of balloon systems, external environment, time) and decision making (problem definition and diagnosis, option generation, risk assessment and option selection, outcome review) to managing threats and errors. Practical scenarios should be developed as a means of both teaching and assessing.

16.5 The flight review form at Appendix B has in the 'Pre-flight' column of the table, under 'Discussion and Application', a list of the single-pilot human factors. Persons conducting flight reviews should take the time to address these items in both the pre-flight discussion and during the flying component of the review.

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APPENDIX A to CAAP 5.143-1(0)

Generic Range of Variables

Range of Variables
• Performance standards are to be demonstrated in flight in an aircraft of the appropriate category.
• Consistency of performance is achieved when competency is demonstrated on more than one flight.
• Flight accuracy tolerances specified in the standards apply under flight conditions from smooth air up to, and including, light turbulence.
• Where flight conditions exceed light turbulence appropriate allowances as determined by the assessor may be applied to the tolerances specified.
• Infrequent temporary divergence from specified tolerances is acceptable if the pilot applies controlled corrective action.
• Units and elements may be assessed separately or in combination with other units and elements that form part of the job function.
• Assessment of an aircraft operating standard also includes assessment of the threat and error management and human factors standards applicable to the unit or element.
• Standards are to be demonstrated while complying with approved checklists, placards, aircraft flight manuals, operations manuals, standard operating procedures and applicable aviation regulations.
• Performance of emergency procedures is demonstrated in flight following simulation of the emergency by the instructor or examiner, except where simulation of the emergency cannot be conducted safely or is impractical.
• Assessment should not involve simulation of more than one emergency at a time.
• **Commercial pilots** should demonstrate that control of the aircraft maintained at all times so that the successful outcome is assured.
• The following evidence is used to make the assessment:
– The applicant's licence and medical certificate as evidence of identity and authorisation to pilot the aircraft.
– For all standards, the essential evidence for assessment of a standard is direct observation by an instructor or examiner of the applicant's performance in the specified units and elements, including aircraft operation and threat and error management.
– Oral and written questioning of underpinning knowledge standards.
– Completed flight plan, aircraft airworthiness documentation, appropriate maps and charts and aeronautical information.
– Aircraft operator's completed flight records to support records of direct observation.
– Completed achievement records for evidence of consistent achievement of all specified units and elements of competency.
– The applicant's flight training records, including details of training flights and instructors comments, to support assessment of consistent achievement.
– The applicant's log -book for evidence of flight training completed.
• For licence and rating issue:
– Completed application form, including, licence or rating sought, aeronautical experience, Chief Flying Instructor's recommendation and the result of the flight test.
– Completed flight test report indicating units and elements completed.
– Examination results and completed knowledge deficiency reports.

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Unit C6: Manage Flight – Flight Standard

Unit Description: Skills, knowledge and behaviour to plan, direct and control all aspects of a flight.

Element	Performance Criteria
C6.1 Maintain effective lookout	• Maintains lookout and traffic separation using a systematic scan technique at a rate determined by traffic density, visibility and terrain. • Maintains radio listening watch and interprets transmissions to determine traffic location and intentions of traffic. • Performs airspace cleared procedure before commencing any manoeuvres.
C6.2 Maintain situation awareness	• Monitors all aircraft systems using a systematic scan technique. • Collects information to facilitate ongoing system management. • Monitors flight environment for deviations from planned operations. • Collects flight environment information to update planned operations.
C6.3 Assess situations and make decisions	• Identifies and analyses problems. • Identifies solutions and assesses solutions and risks. • Decides on a course of action. • Communicates plan of action and allocates tasks, if appropriate. • Takes actions to achieve optimum outcomes. • Monitors progress against plan. • Re-evaluates plan to achieve optimum outcomes.
C6.4 Set priorities and manage tasks	• Organises workload and priorities to ensure completion of all tasks relevant to the safety of the flight. • Puts the safe and effective operation of the aircraft ahead of competing priorities and demands. • Plans events and tasks to occur sequentially. • Anticipates critical events and tasks to ensure safe completion of the task or flight. • Uses technology to reduce workload and improve cognitive and manipulative activities. • Avoids fixation on single actions, tasks or functions.
C6.5 Maintain effective communications and interpersonal relationships	• Establishes and maintains effective and efficient communications and interpersonal relationships with all stakeholders to ensure the safe outcome of the flight. • Defines and explains objectives to applicable/involved stakeholders. • Demonstrates a level of assertiveness that ensures the safe completion of the flight. • Encourages passengers to participate in, and contribute to, the safe outcome of the flight.
Range of Variables	
• All flight and ground operations. • Interaction with stakeholders.	
Underpinning Knowledge	
N/A	

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Unit C7: Threat and Error Management – Flight Standard

Unit Description: Skills, knowledge and behaviour to recognise and plan, direct and control threats and errors.

Element	Performance Criteria
C7.1 Recognise and manage threats	• Identifies relevant environmental or operational threats that are likely to affect the safety of the flight. • Develops and implements countermeasures to manage threats. • Monitors and assesses flight progress to ensure a safe outcome or modifies actions when a safe outcome is not assured.
C7.2 Recognise and manage errors	• Applies checklists or standard operating procedures to prevent aircraft handling, procedural or communication errors; and identifies committed errors before safety is affected or aircraft enters an undesired state. • Monitors aircraft systems, flight environment, and collects and analyses information to identify potential or actual errors. • Implements countermeasures to prevent errors or takes action in the time available to correct errors before the aircraft enters an undesired state.
C7.3 Recognise and manage undesired balloon states	• Recognises undesired aircraft states. • Prioritises tasks to ensure management of undesired aircraft states. • Manipulates aircraft controls or systems, or modifies actions or procedures, to maintain control of the aircraft and return to normal flight operations in the time available.
Range of Variables	
• All flight and ground operations.	
Underpinning Knowledge	
• Explain the principles of threat and error management by detailing a process to identify and mitigate or control threats and errors during multi-crew operations. • Give an example of how an undesired aircraft state can develop from an unmanaged threat or error. • Explain how the use of checklists and standard procedures prevents errors. • Give an example of a committed error and how action could be taken to ensure safety of flight. • Explain how prioritising and managing workload can reduce the occurrence of errors. • Explain how establishing and maintaining interpersonal relationships can ensure safety of flight. • Explain how checklists and standard operating procedures can help to recognise, prevent and/or correct errors.	

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APPENDIX B to CAAP 5.143-1(0)

Balloon Flight Review

Name	**ARN**	**Date**
Address		
Balloon type and registration	**Licence held**	**Flight time**
Flight route	**Assessor**	

Flying completed last two years:
……
……

Flying anticipated next two years:
……
……

Signature of reviewed pilot……

Pre-flight	**Airwork**	**Navigation (Recommended)**
Maintenance release use ☐ Calculate weight and balance ☐ Calculate balloon flight performance ☐ Interpret and apply meteorological report and Notice to Airmen (MET/NOTAMS) ☐ Balloon systems knowledge ☐ Explain actions in event of gas leak ☐ Explain actions in event of fire airborne ☐ **Discussion and Application** Threat and error management ☐ Lookout ☐ Situation awareness ☐ Decision making ☐ Task management ☐ Communications and interpersonal relationships ☐	Pre-flight preparation ☐ Check-list usage ☐ Balloon inflation ☐ Passenger management ☐ Take-off balloon ☐ Land balloon ☐ Balloon deflation ☐ Avoid power lines ☐ Conduct aborted landing ☐ Emergency procedures ☐ Other (enter) ……☐ ……☐ ……☐ ……☐ ……☐ ……☐ ……☐ ……☐	Flight planning for a 30 minute flight ☐ Cockpit organisation ☐ Navigation technique ☐ Map reading ☐ Airspace management and procedures ☐ Diversion procedure (unplanned landing) ☐ Fuel planning ☐ Other (enter) ……☐ ……☐ ……☐ ……☐ ……☐ ……☐ ……☐
Satisfactory √	Unsatisfactory X	Not assessed N

……stick in pilot's log book……..

Name…….ARN……...

has successfully completed a balloon flight review on ……..……(Date)

Reviewing pilot's signature……. ARN……..……

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