APPENDIX A TO CAAP 5.14-2(0) – UNITS OF COMPETENCY

Unit 1: Conduct Aeronautical Knowledge Training

Unit Description: Skills, knowledge and behaviour to plan, conduct and review aeronautical knowledge training for flight crew.

Element	Performance Criteria
1 Plan training	• Confirms trainee's readiness for proposed training, including enabling skills and knowledge. • Identifies training outcomes, including Threat and Error Management (TEM), from standards, training plan and other appropriate sources. • Plans lesson and delivery method appropriate to training outcomes. • Specifies assessment procedures to confirm that training outcomes and transfer of knowledge are achieved. • Confirms lesson content and duration is adequate to meet outcomes and is achievable without overloading or fatiguing trainee. • Schedules and integrates theory training with flight training lessons as appropriate and trainee(s) are notified. • Confirms facilities, equipment, training aids and reference materials are available and allow for training to be conducted effectively and <u>safely</u>.
2 Conduct knowledge training	• Establishes learning environment and motivation suitable to trainee characteristics and material to be presented. • States training outcomes. • Follows or modifies lesson plan to achieve training outcomes and transfer of knowledge. • Links and presents new knowledge to previous knowledge within a meaningful and logical framework. • Uses training aids to illustrate and enhance explanations. • Presents accurate technical knowledge clearly and at the standard applicable to the training unit or element. • Provides opportunities for trainee participation and practice. • Discusses applicable TEM issues and trainee's ability to apply these principles to the material presented is confirmed. • Confirms achievement of training outcomes by questioning, review and other suitable methods. • Develops trainee self-assessment skills and provides feedback on performance. • Completes training outcomes in the time available.

3	Review training	• Confirms that training outcomes and transfer of knowledge has been achieved.
		• Reviews training delivery and effectiveness using self-assessment, peers and supervisors.
		• Maintains and reviews records of assessment and progress of trainee in accordance with the approved procedures.

Range of Variables

- The instructor will deliver training to persons undertaking aeronautical knowledge or flight training for the issue of a flight crew licence, rating or endorsement.
- Lessons will present aeronautical knowledge required for the units and elements of competency applicable to the licence, rating or endorsement sought.
- The training environment includes suitable classroom or briefing facilities and training aids.
- Training is delivered in accordance with appropriate and documented lesson plans.
- Suitable learning resources may be used to assist the presentation, including audio visual aids, aircraft models, synthetic training devices, regulatory publications and aircraft and operations manuals.
- Training outcomes are reviewed as applicable to the needs of the trainee and against the standards specified for the issue of the licence, rating or endorsement.

Underpinning Knowledge

- Define learning.
- Explain the principles of learning and gives examples of their application to flight training:
    - readiness
    - exercise
    - effect
    - primacy
    - intensity
    - recency.
- Explain what is meant by perception.
- Explain how the following factors affect perception:
    - physical
    - basic need
    - goals and values
    - self concept
    - time and opportunity
    - threat.
- Explain the relative importance each of the physical senses in learning.
- Explain how the defence mechanisms listed may hinder learning:
    - rationalisation
    - flight
    - aggression
    - resignation.

- Explain how the level of stress may affect learning.
- Explain the relationship between perception and understanding (insight).
- Give an example of how a flight instructor would assist the process of perception and understanding.
- Explain what is meant by integration of flight and ground training and the importance of integration.
- State how positive and negative motivation affects learning.
- Give examples of positive and negative motivation in flight training.
- Explains the application of the levels of learning to flight training:
  - rote learning
  - understanding
  - application
  - correlation.
- Give examples of how rote learning, understanding, application of knowledge and correlation apply to flight training.
- Identify the outcomes of aeronautical knowledge instruction associated with the three domains of learning:
  - cognitive (Knowledge)
  - affective (Attitudes, beliefs and values)
  - psychomotor (physical skills).
- Discuss the various levels of outcomes within each domain.
- Explain the factors that may hinder learning with respect to aeronautical knowledge training.
- Explain how the rate of learning may vary with practice.
- Explain the role of each of the memory systems in terms of the model of information processing:
  - sensory register
  - short-term memory
  - long-term memory.
- Explain what is meant by positive and negative transfer.
- Give examples of positive and negative transfer in aeronautical knowledge training.
- Explain the role of each factor listed in the communication process:
  - source
  - symbols
  - receiver.
- Recall how these common barriers affect communication:
  - lack of common experience
  - confusion
  - abstractions.
- Explain how an instructor may monitor whether communication has been achieved.
- Identify adult learning issues applicable to aeronautical knowledge training.
- Explain each of the basic steps of the teaching process:

- – preparation
- – presentation
- – application
- – review and evaluation.
- State the purpose of behavioural (performance based) outcomes in flight training.
- Explain the following attributes of effective outcomes:
  - – achievable
  - – observable
  - – measurable.
- Explain how to develop the three essential elements of behavioural outcomes:
  - – Performance (what has to be done)
  - – performance criteria
  - – conditions.
- Explain the advantages and disadvantages of the teaching methods listed and give practical examples of situations best suited to each of these techniques in flight training:
  - – lecture
  - – theory or skill lesson
  - – group learning
  - – guided discussion
  - – briefing.
- State the reasons for limiting the duration of lessons and indicates the desirable duration of a typical lesson.
- Explain the general purpose and content of each of the components of a typical aeronautical knowledge lesson plan:
  - – aim/motivation/revision
  - – outcomes
  - – explanation of principles
  - – explanation/demonstration of technique
  - – TEM
  - – practice
  - – review.
- Explain the purpose and content of a training syllabus (or curriculum).
- Explain the difference between a training syllabus and competency based standards.
- Explain the advantages and disadvantages of guided discussion in flight training and identify flight training activities for which this technique could be suitable.
- Explain the reasons for questioning trainees.
- Explains the characteristics of an effective question.
- Give examples of good and poor questions.
- Explain the purpose and use of training aids.
- Give examples of training aids particularly suited to aeronautical knowledge training.

- Explain the role of the instructor in each of the five steps involved in providing skill practice to trainees:
  - explanation
  - demonstration
  - performance
  - supervision
  - evaluation.
- Explain the application of principles of equity and occupational health and safety to aeronautical knowledge training.
- Explain the role of the instructor in each of the following phases of review and evaluation:
  - fault analysis (diagnosis)
  - competency assessment
  - trainee self assessment
  - training effectiveness.

Unit 2: Conduct Assessment

Unit Description: Skills, knowledge and behaviour to conduct assessment of aeronautical knowledge and competency.

Element	Performance Criteria
1 Establish assessment procedure	• Identifies units and elements to be assessed. • Reviews applicable standards for assessment. • Plans assessment procedures to be valid, reliable, flexible and fair. • Integrates assessment with other training and assessment activities when applicable. • Discusses assessment procedures and standards with trainee. • Identifies necessary changes to planned assessment due to training or other factors and discusses changes with trainee and supervisor.
2 Review evidence	• Reviews evidence requirements specified in applicable standards. • Confirms available evidence as being valid, sufficient, authentic and current. • Includes evidence demonstrating consistency of performance in any assessment.
3 Assist trainee	• Develops trainee's ability to self assess performance against applicable standards. • Ensures two way communication and feedback on the assessment process. • Makes adjustments based on trainee characteristics if it does not compromise the integrity of the competency standards. • Seeks supervisor or other relevant opinions when more expertise is needed to assist assessment. • Applies timely TEM procedures during skills assessment if the trainee fails to manage an undesired aircraft state.
4 Make assessment	• Seeks assistance from relevant persons in providing additional evidence when required. • Assesses competence against the standards using the available evidence. • Assesses the application of TEM to the demonstration. • Completes assessment decision in compliance with regulatory requirements and procedural fairness. • Provides clear and comprehensive feedback to the applicant, together with recommended additional training if required.
5 Record assessment	• Records assessment promptly and accurately in accordance with regulatory requirements and training organisation procedures. • Records and notifies relevant personnel of any additional training requirements.

| 6 | Review assessment | • Reviews assessment process by self-assessment, consultation with peers and supervisors to identify opportunities for improvement. |
| | | • Documents and records the review in accordance with training organisation procedures. |

Range of Variables

• Assessment is of the aeronautical knowledge or skill of a person training for the issue of flight crew licence, rating or endorsement.

• Assessment of flying skills is made by direct observation in a suitable aircraft or approved synthetic training device.

• Assessment of knowledge is by tools developed and administered by the assessor, including oral and written tests and exercises.

• Where a written examination is conducted by CASA, the assessment process should confirm the applicant's knowledge is at a sufficient standard in all elements of aeronautical knowledge specified for the examination.

• The assessment may include concurrent assessment of interdependent elements as appropriate.

• The assessment includes TEM applicable to the units or elements being assessed.

Underpinning Knowledge

Competency standards

• Explain the structure and purpose of typical components of Australian National competency-based standards:

  – unit

  – element

  – performance criteria

  – range of variables

  – evidence guide

  – underpinning knowledge

  – key competencies.

Assessment

• Explain the process of making an objective assessment against a standard.

• Discuss the role of each of the following activities in providing evidence of competency in performing as a flight crew member:

  – direct observation

  – simulation

  – projects

  – problem solving exercises

  – oral and written questioning

  – written examinations

  – log books and training records.

• Recall and explain the following terms in respect of the evidence used to determine an individual's competency against a standard:

- – validity
- – authenticity
- – sufficiency
- – currency
- – consistency.
- • Explain the differences between the forms of assessment listed and gives examples of how each is used in flight training:
  - – formative
  - – diagnostic
  - – summative
  - – holistic.

Consistency of performance and context of assessment

- • Explain the requirements for assessing consistency of performance of flight crew standards.
- • Explain the differences in standards for consistency of performance at different licence levels.
- • Explain the application of the range of variables in making an assessment.

Unit 3: Conduct Flight Training

Unit Description: Skills, knowledge and behaviour to plan, conduct and review flight training in an aircraft or approved flight simulator.

Element	Performance Criteria
1 Plan flight training	• Reviews trainee's records, identifies the appropriate units and elements of training to be delivered and develops an appropriate lesson plan including remedial training if required. • Identifies training outcomes based on performance criteria included in the Manual of Standards, the operators training plans and consultation with supervisors. • Identifies underpinning knowledge for the units and elements and confirms that the trainee has received the appropriate training. • Plans flight training exercise to ensure an effective, efficient and safe outcome. • Identifies potential threats and errors, including those associated with simulation of abnormal or emergency procedures or aircraft mishandling by trainee and applies suitable mitigators. • Programmes availability of suitable training aircraft and briefing facilities. • Establishes airworthiness and fuel state of the training aircraft. • Determines that environmental conditions are suitable for the training exercise.
2 Conduct pre-flight briefing	• Confirms the trainee is mentally and physically prepared for flight training and can recall the underpinning knowledge required for the flight exercise. • Briefs the trainee on the training outcomes, the associated performance criteria and the actions required of the trainee during the flight. • Links previous training to current exercise. • Briefs the trainee on how the flight will be conducted to meet the training outcomes. • Confirms the trainee's ability to recall the training outcomes, underpinning knowledge, handling technique and planned flight scenario. • Discusses TEM issues applicable to the proposed flight and confirms trainee's responsibility for managing those issues (airmanship).
3 Conduct airborne training	*Demonstrates elements* • Introduces tasks in manageable portions without trainee overload. • Makes clear, concise and systematic explanations. • Coordinates demonstration with explanation of manoeuvre.

		• Makes coordinated control inputs without abrupt manoeuvring, using accepted techniques. • Demonstrates the manoeuvre to the competency standards specified in this manual for a commercial pilot. *Directs task performance* • Implements hand-over/take-over procedures for control of aircraft. • Provides direction appropriate to trainee's progress. • Provides instructions in a clear, concise and timely manner. • Provides sufficient practice for the trainee to achieve the task. • Intervenes only to the extent necessary to assist the trainee's progress or to maintain safety. *Monitors trainee performance (unassisted practice)* • Identifies trainee's deficiencies and provides feedback to assist trainee in achieving the standard. • Provides and varies additional instruction and demonstration as necessary to assist trainee. • Encourages trainee to develop self-assessment skills. • Notes training events for debriefing and assessment.
4	Manages threats and errors	• Manages responsibilities as PIC for the safe operation of the aircraft and maintains <u>situation awareness</u> while providing instruction. • Identifies and manages <u>threats</u> and <u>errors</u>. • Intervenes to recover the aircraft if trainee does not manage an <u>undesired aircraft state</u>. • Develops trainee responsibility through the application of human factors principles for TEM.
5	Conduct post-flight briefing	• Asks trainee to self assess performance against the performance criteria. • Describes significant details of trainee's performance clearly and accurately. Assesses trainee's achievement against the training outcomes for the lesson and associated performance criteria. • Identifies any deficiencies in performance and suggests remedial actions and training. • Discusses TEM issues encountered during the flight. • Briefs trainee on the details of the next training exercise. • Records achievement or otherwise of competency, any remedial training required and identifies content of the next training exercise.

6 Review training	• Evaluates training effectiveness with trainees and other appropriate <u>stakeholders</u>.
	• Evaluates final session outcomes against desired session outcomes.
	• Identifies and incorporates adjustments to delivery, presentation and content of training when appropriate.

Range of Variables

- Flight training includes training for the issue of a flight crew licence, rating or endorsement using a suitable training aircraft or approved synthetic flight trainer.
- Flight training includes the units and elements authorised by the flight training endorsement(s) held by the instructor.
- Aeronautical knowledge training, including pre and post-flight briefings, is provided to support the flight training units and elements.
- Flight training and aircraft operation is conducted in accordance with regulatory requirements and safe operational practices and includes administrative procedures associated with authorising and recording flight training and maintaining training records.
- Flight training for licences and ratings is conducted under a CASR Part 141 Operating Certificate with the relevant training specification in accordance with holder's operations manual.

Underpinning Knowledge

- Identify and explain obstacles to learning associated with flight training:
  – lack of preparation
  – physical discomfort
  – anxiety
  – fatigue
  – unreasonable expectations
  – apathy
  – impatience
  – communication difficulties
  – inadequate demonstration
  – task complexity
  – inadequate opportunity to practice
  – inadequate fault analysis
  – information overload
  – outside pressures
  – cultural differences.
- Explain the 'Demonstrate - Direct - Monitor' method of flight instruction.
- Explain the concept of scenario-based training and its advantages in flight instruction.
- Explain the application of risk management principles to emergency procedure simulations in flight.
- Explain the use of checklists for single pilot or multi-crew operations as applicable.

- Explain handing over/taking over procedures and outline circumstances in which an instructor should assume control.
- Identify and explain common student errors and suggests suitable remedial instruction.
- Explain the importance of the flight instructor as a role model.
- Explain the operational concept of TEM in relation to flight training in terms of:
  - managing threats
  - managing errors
  - managing undesired aircraft state.
- Explain suitable procedures for developing trainees TEM skills
- Explain a task prioritisation system to assist the development of trainees task management skills in terms of:
  - aircraft control
  - navigation
  - communication.
- Identifies crew resource management skills applicable to flight training and explains the role of the instructor in assisting the trainee to develop these skills.
- Identifies and explain levels of situation awareness and methods of developing and monitoring trainees situation awareness skills in terms of:
  - monitoring current environmental factors
  - evaluating their possible effects on the flight
  - anticipating the need for alternative actions.
- Outline suitable procedures for making decisions in flight and for developing trainees decision making skills.
- Explain how goal fixation affects good decision making.
- Explain the three types of stress likely to affect a trainees performance and methods of assisting trainees to cope with stress:
  - physical
  - physiological
  - psychological.
- Identify hazardous behaviour, attitudes and methods of modifying:
  - anti-authority
  - impulsivity
  - invulnerability
  - recklessness
  - resignation.