Australian Government
Civil Aviation Safety Authority

ADVISORY CIRCULAR
AC 61-09 v1.0

Competency-based training and assessment for flight crew

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Advisory circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.

Advisory circulars should always be read in conjunction with the relevant regulations.

Audience

This advisory circular (AC) applies to:

- flight training operators
- flight instructors
- flight examiners and regulation 61.040 approval holders
- RoPL assessors
- CASA flying operations inspectors
- trainee (student) pilots
- trainee (student) flight engineers.

Purpose

The purpose of this AC is to provide practical guidance about competency-based training and assessment (CBTA) and how it is applied to flight crew. It aims to assist training operator executives, instructors and assessors to understand and apply the CASA CBTA guidelines and develop and maintain the highest standards of flight training and assessment.

For further information

For further information on this AC, contact CASA's Flight Standards Branch (phone 131 757).

Status

This version of the AC is approved by the Manager, Flight Standards Branch.

Version	Date	Details
v1.0	April 2022	First release of this AC. Supersedes CAAP 5.59A-1(0), with updates to reflect the changes to flight crew licensing regulations under Part 61 of CASR and the Part 61 MOS.

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this AC are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

Contents

1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Acronym	Description
AC	advisory circular
AOC	Air Operator's Certificate
CAAP	Civil Aviation Advisory Publication
ATPL	air transport pilot licence
CAR	*Civil Aviation Regulations 1988*
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations 1998*
CBT	competency-based training
CBTA	competency-based training and assessment
CPL	commercial pilot licence
HOO	head of operations
MOS	manual of standards
PPL	private pilot licence
RoPL	recognition of prior learning
ROV	range of variables
RPL	recreational pilot licence
VFR	visual flight rules

1.2 Definitions

Terms that have specific meaning within this AC are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. Should there be a discrepancy between a definition given in this AC and the civil aviation legislation, the definition in the legislation prevails.

Term	Definition
assessment	The process of gathering measurable information and evidence about the performance of an individual or team and comparing this with a defined set of competency standards.
competency	A combination of skills, knowledge and behaviours required to perform a task to the prescribed standard.
competency standards	Competency standards are determined to meet the skill needs and focus on what is expected of a competent individual. The Part 61 MOS defines the competency standards for flight crew licences, ratings and endorsements.

Term	Definition
behavioural markers	Observable behaviours that contribute to evidence of competency within a work environment.
diagnostic assessment	An assessment that measures the trainee's current skills, knowledge and behaviour to identify any learning problems and to devise a suitable program of learning for the future (akin to a formative assessment).
flight training operator	An organisation approved by CASA under Parts 141 or 142 which is staffed, equipped and operated in a suitable environment offering training (theoretical and practical) for specific flight training programs.
formative assessment	Formative assessment monitors learning progress during instruction and provides continuous feedback to both trainee and instructor concerning learning success and failures.
human factors	The relationships within systems between people, activities and equipment.
non-technical skills	Specific human factors competencies, such as lookout, situational awareness, decision making, task management and communications.
situational awareness	Knowing what is going on around you, being able to predict what could happen.
summative assessment	A summative assessment is conducted at the end of a course of training and determines if the instructional objectives (competency standards) have been achieved.
technical skills	The manipulative skills and the knowledge a pilot employs when operating an aircraft.

1.3 References

Legislation

Legislation is available on the Federal Register of Legislation website https://www.legislation.gov.au/

Document	Title
Part 61	Flight crew licensing
Part 141	Recreational, private and commercial pilot flight training, other than certain non-integrated training courses
Part 142	Integrated and multi-crew pilot flight training, contracted recurrent training and contracted checking
Part 61 Manual of Standards (MOS)	Part 61 Manual of Standards

International Civil Aviation Organization documents

International Civil Aviation Organization (ICAO) documents are available for purchase from http://store1.icao.int/

Document	Title
International Civil Aviation Organization, Document 9868-2006	Procedures and Air Navigation Services - Training.

Other reference material

Document	Title
CASA website index page to Guidance material for Part 141 and Part 142	Guide to the use of CASA flight training syllabuses • Sample syllabus: Recreational pilot licence (aeroplane) for Part 141 of CASR • Sample syllabus: Single-engine aeroplane night vision flight rule endorsement for Part 141 of CASR • Sample syllabus: Design feature endorsement (aeroplane) retractable undercarriage and manual propeller pitch control (MPPC) • Sample syllabus: Private pilot licence (aeroplane) for Part 141 of CASR • Sample syllabus: Commercial pilot licence (aeroplane) non-integrated for Part 141 of CASR • Sample syllabus: Multi-engine (aeroplane) class rating for Part 141 of CASR • Sample syllabus: Private pilot licence (helicopter) for Part 141of CASR • Sample syllabus: Commercial pilot licence (helicopter) for Part 141 of CASR • Aerial application rating with aeroplane firefighting endorsement training course • Sample syllabus: flight instructor rating training package • Sample syllabus: Basic instrument flight training - gap training for flight instructors Sample syllabi for flying training organisations | Civil Aviation Safety Authority (casa.gov.au) Flight examiner handbook Flight Instructor Manual (Aeroplane) Flight Instructor Manual (Helicopter)

2 Competency-based training and assessment

2.1 Introduction

2.1.1 Flight training in Australia (and the rest of the world) has always been based on a traditional notion of competency—the concept that *'If you can't take-off, do a circuit and land, then you can't go solo*'. However, describing competency this way lacks structure, clear definition, consistency and standardisation.

2.1.2 For more than two decades, CASA has promoted competency standards for private and commercial pilot licensing and have been aligned with the national industry training and assessment system. Competency standards have now been established for all flight crew licences, ratings and endorsements and published in the Part 61 MOS.

2.1.3 While this AC provides an overview of CBTA in a flight crew licensing context, further information about training and CBTA systems generally is given in other guidance material provided by CASA and ICAO. Refer to section 1.3 of this AC.

2.2 The CBTA system

2.2.1 Using CBTA, a person is trained to meet specified standards that define the skills, knowledge and behaviours required to safely and effectively perform a task in a particular context and is then assessed for competence against those standards. A CBTA system:

- focuses on what a person must be able to do (i.e., is performance-based)
- ensures training is delivered to specified standards (i.e., rather than ranking competence against other trainees, competence is measured against pre-defined standards)
- provides for recognition of prior learning gained from previous training or work experience
- reflects the tasks that a person would do in 'real life' or in the workplace.

2.2.2 The flight crew licensing CBTA system brings together existing and new knowledge, skills and behaviours required to safely exercise the privileges of flight crew licences, ratings and endorsements.

2.2.3 The CBTA system provides the vehicle for recognising and achieving the required competencies. A licensing outcome is then realised by the granting of the appropriate combinations of licences, ratings and endorsements.

2.2.4 Table 1 below, outlines the key differences between a traditional learning pathway and training conducted under a CBTA model.

Table 1: Traditional Learning VS Competency Based Training and Assessment

Traditional learning	Competency based training and assessment
Students advance at the end of a fixed class/lesson, regardless of whether they have fully learned the concepts and skills.	Students receive instructional support until the concept and skills are fully learnt before advancing. Learning pathways and the amount of instructional support are designed to achieve competency.
Learning targets are organised around graded levels and provide only key skills and/or knowledge that are required for higher level classes/lessons.	Individual pathways take into consideration students' development, prior knowledge and experience and address any disparities in foundational knowledge.
Training organisations are designed to deliver the same curriculum to all students in each class/lesson.	Training organisations take opportunities to flexibly structure classes/lessons around learning ability (not curriculums).
Assessment is used principally for summative purposes. Assessments are conducted at pre-determined points in time and/or at the end of a course. Assessments are administered to all students at the same time and in the same format on the same content.	Assessments are embedded through the learning cycle. Students have options for providing evidence of learning. Assessments may include a contextual or 'real world' provision to show learning and provide evidence.
Results emphasize academic skills, memorisation and understanding of content. This may not demonstrate the ability to utilise the skills and knowledge in the 'real world'.	Learning outcomes emphasize competencies that include an understanding of knowledge which can be demonstrated through application. Students' current abilities and skills are recognised with further encouragement to continue to build knowledge, skills and competencies.
Grades reflect a combination of completing assessments and scores on assessments. Grades are used to create grading points and to rank students.	Training organisations know the performance of each student and monitor growth and progress. Scoring may be used to communicate progress in learning.

Training plan

2.2.5 Before a person can be assessed as competent, they must receive flight training which addresses, and assists them to achieve, the knowledge and practical flight standards prescribed for the authorisation (e.g., a licence, rating or endorsement). The knowledge and practical units need to be delivered in a logical sequence. Accordingly, all training should be structured and planned consistent with the principles of CBTA. A training plan will document:

- all the skills, knowledge and behaviours which must be taught (this may include 'gap' training as determined following a recognition of prior learning assessment process)
- how the training will be conducted and recorded
- in an integrated course of training, how theory and flight training will be coordinated
- how assessments will be performed and recorded
- the sequencing of training and assessment

- contingencies to allow for adjustment to training in the event of unexpected weather or operational restrictions.

2.2.6 A training plan may be individually tailored when taking into account a person's previous experience and qualifications when supported by a robust process for recognition of prior learning (RoPL). For those students who are excelling in the training and showing expeditious progress in a course, adjustments to a structured course of training may be implemented.

2.2.7 The person assigned to manage the training course is responsible for monitoring the performance of students and controlling the plan. For Part 141 and 142 operations this is the head of operations (HOO). The training plan must be made available to training personnel and students.

2.2.8 The training plan should be designed to develop a person's knowledge and skills which are re-enforced in subsequent lessons. It should also ensure the person will demonstrate the required competencies on at least two separate occasions prior to the student being recommended by the training provider for a flight test, when specified.

Evidence-based assessment

2.2.9 A person cannot be granted a CASA authorisation unless they are assessed against and satisfy the prescribed standards. To ensure the assessment is valid and reliable, the standards must be measurable and objective. While teaching methods may vary between training providers, the outcome must be the same. That is why rigorous, consistent, and objective assessment of performance against established competency standards is the cornerstone of a quality CBTA system.

2.2.10 To be measurable, the performance criteria in the standard must be described in terms that ensure the required skills, knowledge and behaviours are accurately and unambiguously evaluated to ensure that when, and only when, the desired performance is demonstrated, the standard will have been achieved.

2.2.11 To be objective, the assessment must be free from personal feelings and prejudices—an assessor must refer to the standards and assess on the basis of gathered evidence.

2.2.12 Evidence-based assessment is the process of weighing evidence of an individual’s performance against a standard. The evidence must be:

- Valid – it must cover all the performance criteria for the skills and knowledge of the standard being assessed.
- Authentic - it must be the individual’s own work.
- Sufficient – enough evidence must be collected to judge whether the individual is competent across:
  - all elements and performance criteria
  - all dimensions of competency (Described at paragraph 2.2.13 of this AC).
- Current - establishing that the individual is competent now and meets the current standard.

2.2.13 Dimensions of competency must be considered when an assessor gathers evidence of a candidate's competency. The assessment should not be too narrowly based on a task but embrace all aspects of performance and represent an integrated and holistic approach. The individual should not only show their skills but the knowledge and

attitudes to apply those skills in routine and non-routine situations. The assessment process must take into account the task skills, job/role environment skills, task management skills, and contingency skills.

For example, instead of just assessing a 30° banked turn against the specified standard, it may be more realistic to observe the candidate performing the manoeuvre during a precautionary search (a *contingency*) where the turn is used to position the aircraft to observe and assess the landing surface (a *role*). The skill is being applied to a new circumstance (*transfer of skill*), while managing a somewhat complex undertaking. This approach to assessment combines knowledge, understanding, problem solving, technical skills and application.

2.3 Formative, diagnostic and summative assessments

2.3.1 The following explanations emphasise the application of three assessment methods in the context of a CBTA system.

Formative assessment

2.3.2 A formative assessment is used to monitor learning progress during training. It provides continuous feedback to both the trainee and the instructor concerning learning success and failure to meet standards. The instructor uses this type of assessment on every instructional flight.

2.3.3 The main purpose of formative assessment is to gauge the progress of the trainee's learning and to determine whether to move on to new activities, continue to practise, or to repeat training exercises. To do this accurately, instructors must be familiar with the required skills, knowledge and behaviours and the standard to which they must be achieved, and then determine if the trainee is progressing (learning) according to the training plan. Instructors should also seek and note consistency in performance.

2.3.4 The ability of a trainee to successfully perform the requirements of a unit or element of a standard *on a single occasion* is not an indication of competency—for a CBTA system, competence must be demonstrated on at least two occasions, with each occasion on a separate flight. When the trainee meets the final competency standard on two different flights, the trainee may be certified as competent by the instructor and the flight training record appropriately annotated.

Diagnostic assessment

2.3.5 A diagnostic assessment measures the trainee's current skills, knowledge and behaviour to identify any learning problems and to devise a suitable program of learning for the future. It is akin to a formative assessment; however, this type of appraisal may require the instructor to delve into the trainee's learning difficulties and develop a suitable teaching technique to ensure the trainee achieves competence.

Summative assessment

2.3.6 A summative assessment is an evaluation that is conducted at the end of a course of training. It is used to determine whether the instructional objectives (competency

standards) have been achieved. A summative assessment must comply with the rules of evidence mentioned in paragraph 2.2.12 of this AC.

2.3.7 The following is an example of summative assessment:

- An assessment to determine if the student can be recommended for a flight test for a flight crew licence, rating or endorsement.

2.3.8 The flight test is a holistic evaluation. It is used to appraise multiple units and elements, and seeks to confirm skills, knowledge and behaviours as part of the assessment process in an operational context.

2.3.9 The flight test is designed to validate the assessment of competency conducted by the training provider and provide feedback in the event training deficiencies are identified. To minimise the duration of the exercise the flight test is focused on the assessment competencies necessary to ensure the applicant can exercise the privileges of the authorisation safely.

2.3.10 The flight test should, as far as it is practical, be scenario-based, reflect real world flying activities and require problem solving and decision making. In other words, the test should be used to determine the trainee's ability to apply the required skills, knowledge and behaviours to a practical operational sequence of tasks which are relevant to the authorisation, such as a simulated charter for a commercial pilot licence or instrument navigation flight for an instrument rating flight test.

2.4 Recognition of Prior Learning

2.4.1 Recognition of prior learning (RoPL) is the process of acknowledgement of relevant knowledge, skills or competencies gained as a result of previous experience or formal training or study. A person may seek RoPL to satisfy competency standards a training course is designed to address.

2.4.2 Recognised prior learning may have been obtained through:

- formal learning, which takes place within an instructor-student relationship, such as in a flight training system, at university or TAFE, and is formally recognised through the attainment of a qualification or statement of attainment upon successful completion
- non-formal learning, which takes place through a structured program of instruction, but does not lead to the attainment of a formally recognised qualification or statement of attainment (for example, in-house professional development programs conducted by a business)
- informal learning, which results through experience of work-related, social, family, hobby or leisure activities (for example the acquisition of interpersonal skills developed through several years as a sales representative)'.
- a combination of all the above.

2.4.3 Recognised prior learning uses evidence-based assessment (discussed above), which may include a practical assessment conducted in an aircraft or flight simulation training device (FSTD), to qualify and quantify the skills and knowledge required for competency.

2.4.4 If any gaps in skills or knowledge are identified during the recognised prior learning assessment, an approved course of training may be modified to address identified deficiencies in competency.

2.4.5 RoPL assessment should involve the trainee as much as possible. This will ensure that all the experience, skills and knowledge being assessed can be correctly identified and suitable demonstrated.

2.4.6 Some operators may elect not to assess a persons prior knowledge and skill for commercial reasons. The process of RoPL must be robust and documented to mitigate the safety risks associated with modification of established training plans.

3 Competency standards

3.1 Practical flight standards

3.1.1 A competency standard is used to assess a person's competence to perform the tasks required to exercise the privileges of an authorisation. Flight instructors and assessors must be conversant with and comfortable using the competency standards, to ensure effective training, any recognition of prior learning and the conduct of objective assessments.

3.1.2 The practical flight standards for all flight crew licensing authorisations, granted in accordance with the requirements in CASR Part 61, are prescribed in the Part 61 MOS.

3.1.3 Practical flight competency standards are comprised of five components:

- units
- elements
- performance criteria
- range of variables
- underpinning knowledge.

3.1.4 All components of a competency standard must be understood and applied during training and assessment.

Unit of competency

3.1.5 A unit of competency represents a discrete task or function that is written as a measure of outcome. Each unit has its own description.

> An example unit of competency from the Part 61 MOS is A3 - Control Aeroplane in normal flight[1]
>
> *Unit Description:* This unit describes the skills and knowledge required to control an aeroplane while performing normal flight manoeuvres.

Elements

3.1.6 Units are sub-divided into elements, which provide detail to the various functions that must be carried out.

> Extending the previous example:
>
> Analysing what is required to be done to *control an aeroplane while performing normal flight manoeuvres plan for a flight, prepare an aircraft prior to flight and manage post-flight actions,* results in the following seven elements:
>
> - *A3.1 - Climb aeroplane*
> - *A3.2 - Maintain straight and level flight*
> - *A3.3 - Descend aeroplane*
> - *A3.4 - Turn aeroplane*

[1] Refer to Schedule 2 of the Part 61 MOS for the complete unit.

- *A3.5 - Control aeroplane at slow speeds*
- *A3.6 - Perform circuits and approaches*
- *A3.7 - Local area airspace*

Performance criteria

3.1.7 Each element contains a number of performance criteria. Performance criteria are evaluative statements which specify what is to be assessed and the required level of performance. They are often considered to be the crux of a flight standard and contain behavioural markers that are used to measure a person's performance.

3.1.8 Each performance criterion contains a verb that denotes an action which must be carried out to demonstrate competency. The trainee may be expected to perform actions such as *recognises*, *executes*, *selects* and *manoeuvres* to demonstrate competency.

For example, from Part 61 MOS Vol 2, Sect 4, AEROPLANE CATEGORY, the performance criteria applicable to the element *A3.4 - Turn aeroplane* are:

A3.4 – Turn aeroplane

(a) operate and monitor all aircraft systems during turning flight manoeuvres;

(b) for the following turning manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre:

(i) level turns;

(ii) climbing turn;

(iii) powered descending;

(iv) gliding descending turn;

(c) complete turn manoeuvre on a nominated heading or geographical feature;

(d) turn aeroplane at varying rates to achieve specified tracks;

(e) manoeuvre aeroplane over specified tracks or geographical features.

3.1.9 All performance criteria must be met for a person to be assessed as competent, and manoeuvres must be performed within the flight tolerances mentioned in the Part 61 MOS that are for the category of aircraft and for the licence or rating.

Range of variables

3.1.10 The range of variables (ROV) adds definition to the performance criteria by elaborating on critical or significant aspects of the unit of competency. The ROV also detail contexts and conditions which should be applied during assessment.

For example, from Part 61 MOS Vol 2, Sect 4, AEROPLANE CATEGORY, the ROV for *A3.4 - Turn aeroplane*, specifies that the competency must be assessed in accordance with certain procedures:

Range of variables

(a) activities are performed in accordance with published procedures;

(b) aeroplane with piston or turbine powerplant and propeller;

(c) aircraft with fixed or retractable undercarriage;

(d) aircraft with or without flaps;

(e) simulated hazardous weather;

(f) approach and landing configurations:

  (i) normal;

  (ii) flapless;

  (iii) glide;

(g) circuit patterns:

  (i) normal 1,000 ft AGL circuit;

  (ii) low-level 500 ft AGL circuit;

  (iii) full circuit pattern, including 5 legs;

  (iv) shortened circuit pattern;

(h) day VFR conditions;

(i) local area airspace limitations.

If these conditions are not met, then the assessment is invalid.

Underpinning knowledge

3.1.11 Underpinning knowledge is specific knowledge required for a person to demonstrate competency in the standards specified.

3.1.12 It should not be assumed a person who has satisfied the relevant CASA theory examinations has the underpinning knowledge or can apply the underpinning knowledge required to demonstrate competency to the applicable standards.

For example, in the *A3.4 - Turn aeroplane* unit of competency, one underpinning knowledge item requires an understanding of *relationship between angle of bank, load factor and stall speed*.

This knowledge should be provided by a flight instructor during flight training and candidates would expect to demonstrate how to apply this knowledge during an assessment or on a flight.

3.2 Attitudes and behaviours

3.2.1 The Part 61 MOS unit descriptions start with the words:

'*This unit describes the skills and knowledge required to* …' in contrast to national and other competency standards, which usually use the words '…*skills, knowledge and attitudes* …'.

3.2.2 CASA emphasises the training and assessment of human factors, which relies on the observation of behaviours. This is not just semantics as it is important to understand why behaviour is the determinant.

3.2.3 Attitudes are part of a person's mental make-up which can only be speculated upon. Attitudes such as aggressiveness, carelessness or impulsiveness are often suppressed or hidden and cannot be determined until behaviour, such as 'lashing out', failing to follow rules or taking an unsafe, impulsive action (e.g., unauthorised low flying) are exhibited and observed. Therefore, it is vital that assessors look for an observable (and measurable) behaviour to confirm what may initially be a 'gut feeling' about a person having an 'attitude problem'.

3.3 Practical flight standards common to multiple authorisations

3.3.1 Several practical flight standards are common to more than one authorisation. These standards must be addressed during the training and assessment activities for a new authorisation, regardless of a trainee having demonstrated competency during assessment for a previously granted authorisation. For example, the unit of competency 'land aeroplane' applies to each of the RPL (A), PPL (A) and CPL (A).

3.3.2 In these situations, the trainee's skills are to be applied and assessed in different contexts, progressively more advanced scenarios, and often in different aircraft. The same set of competencies are demonstrated, but with different degrees of performance. The capacity of the trainee to perform at the standard required to exercise the privileges of the new authorisation must be assessed. It is expected trainees will demonstrate a more advanced application of skills and hold a broader theoretical and technical knowledge as their aeronautical experience and qualification level progresses.

3.3.3 Underpinning knowledge should be covered at greater depth during training for new authorisations. Trainees must demonstrate application of the knowledge to more advanced practical task sequences which are relevant to the authorisation sought.

3.3.4 At the professional authorisation level, trainees are expected to demonstrate expert skills, knowledge and behaviours.

3.4 Aeronautical knowledge standards

3.4.1 The aeronautical knowledge standards for flight crew licensing are prescribed in the Part 61 MOS.

3.4.2 CASA theory examinations assess if the applicant for the applicable flight crew licence or rating has obtained and can apply the knowledge specified in the standards.

3.4.3 The CASA theory examination system generates a Knowledge Deficiency Report (KDR) that will reference the relevant knowledge standards in which the person has failed to demonstrated competency by failing to answer a question correctly.

3.4.4 Aeronautical knowledge standards are comprised of:

- units, which contain the aeronautical knowledge required for an authorisation
- elements, which identify knowledge areas within a unit
- topics (if any), which further define knowledge areas within an element
- specific content, describing in detail the content of the topic (if any) or the element.

3.4.5 The requirement for aeronautical knowledge is that a trainee can demonstrate, to the appropriate level, all components of the unit of knowledge prescribed by the Part 61 MOS for the authorisation sought.

4 Resources

4.1 CBTA tools

4.1.1 Tools are devices used to assist and simplify the completion of a task. In the CBTA system, some examples of tools that can be used to assist and simplify the task of assessment are:

- the Part 61 MOS standards (see Chapter 3 for an introduction to competency standards)
- achievement records
- training records
- pilot's log books
- examination results
- Recognition of prior learning Self-assessment evidence
- Recognition of prior learning evidence verification
- instructions for assessors and candidates
- CASA flight test forms
- the Flight Examiner Handbook (FEH).

4.1.2 By being familiar with the tools, assessors should become comfortable and confident that the judgements they make about a person's competency are valid and truly representative of the candidate's skills, knowledge and behaviours.

4.1.3 CASA provides a range of guidance material to assist flight training operators to develop their courses. These are available via the CASA website.

4.2 Part 61 MOS flight standards

4.2.1 The Part 61 MOS flight standards are probably the most valuable tool available to a flight instructor or assessor. They clearly define what must be assessed and detail the functions (elements) to be carried out.

4.2.2 Behavioural markers in the performance criteria specify what is to be assessed and define to what level and under what conditions they should be assessed. They also specify what underpinning knowledge (if any) should be examined.

4.2.3 The standards are only as good as the person who assesses against them. Assessors should be meticulous when using standards, ensuring that all components (i.e., elements, performance criteria, ROV, and underpinning knowledge) of a standard are considered when making an assessment for a unit of competency. The flight tolerances referred to in the Part 61 MOS must also be applied.

4.2.4 Figure 1 below depicts a number of scenarios in which pilots try to show competency against the element *Maintain straight and level flight*.[2] In each scenario, the solid arrow lines represent the flight path and the dashed lines represent the desired flight level.

[2] Based on Unit A3 – *Control aeroplane in normal flight* from Section 4 of Schedule 2 to the Part 61 MOS.

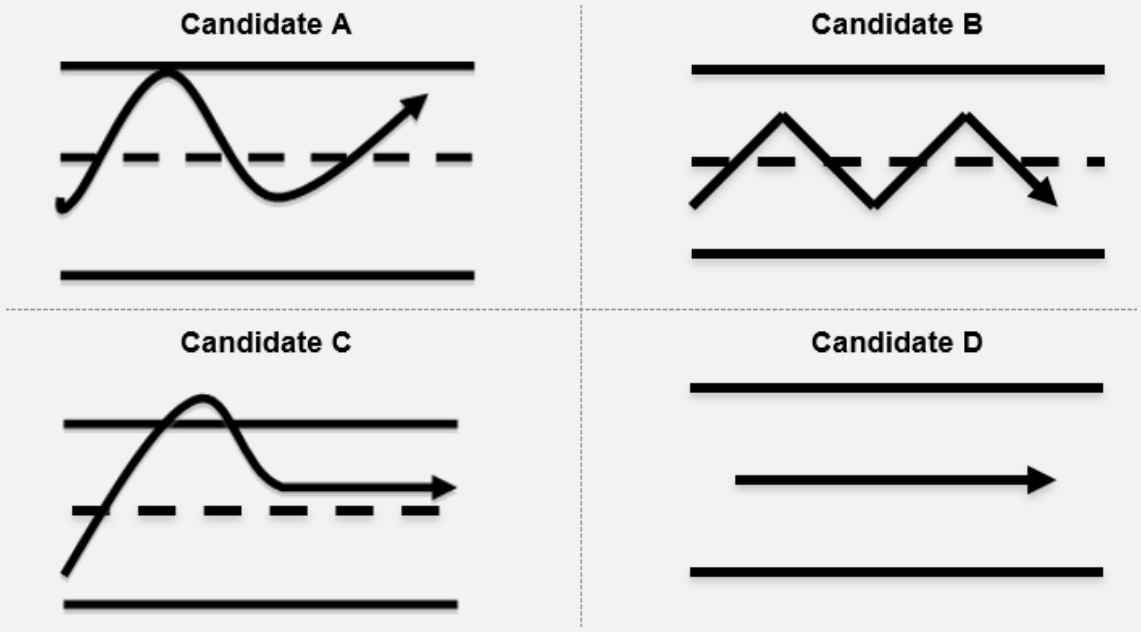

Figure 1: Competency in element *A3.2 Maintain straight and level flight*

Candidates A and B may consider that they meet the standard because they remain within the height bands specified (e.g. +/- 100 ft for a commercial pilot licence [CPL]). Candidate C may believe that the standard has not been met because of an excursion outside the height band. Candidate D may feel confident that the standard has been achieved. However, if these candidates are rigorously measured against the competency standard, a different result may become evident.
The fourth performance criterion for the element *Maintain straight and level flight* specifies:

> ...*select power, attitude and configuration as required for the flight-path*…

The assessor may observe that candidates A and B were unable to set a constant attitude and power (assuming smooth flying conditions and correct configuration). The excursion outside the height band by candidate C is addressed by the Part 61 MOS in the flight test standards (i.e. the flight test requirements of the CPL (A) at Schedule 5 Appendix I.1, Paragraph 1.2). As the excursion is not a 'sustained deviation' they would be assessed favourably. Candidate D would also be assessed favourably.

But are candidates C and D maintaining heading +/-10°, IAS +/-10 kts, correctly setting the altimeter subscale and balancing and trimming the aircraft? If they are, but fly into cloud, encounter another aircraft or a mountain, they clearly do not meet the third performance criterion. They must also meet all the applicable conditions in the ROVs and underpinning knowledge, so the process of making a valid, authentic, sufficient and current assessment is more encompassing than first may meet the eye.

Candidates A and B do not meet the standard, and candidates C and D would meet the requirements if they achieve all the performance, ROV and underpinning knowledge criteria contained in the standard. By applying these factors judiciously, it is possible to make a valid judgement.

4.2.5 Rigorous assessment against the standards is essential. The assessment process may appear complicated and laborious, however it becomes easier for the assessor to make quick and accurate judgements as they become au fait with the standard.

4.3 Flight training records

4.3.1 Flight training records provide a record of a trainee's progress and identify areas of deficiency for further training. These records, by their nature, highlight problem areas and often focus on negative aspects of a trainee's progress. However, during training in a CBTA system, training records also need to document the achievement of competency. When a trainee consistently demonstrates competency, the results should be recorded in the trainee's training record. If a flight training operator has chosen to utilise achievement records, such results would also support the completion (sign off by instructor/assessor) of the record.

4.3.2 The training records should be comprehensive, capturing enough information to enable any other instructor who may be required to ‘step in’ and train the student to do so without difficulty or doubt.

4.4 Pilot’s log books and examination results

4.4.1 The pilot’s log books and examination results provide evidence of a person’s training and achievements. The log book details the flying experience and the type of flight training undertaken. The examination results record the examinations passed for CASA licences, ratings and endorsements. Both sources of information support the final assessment of a person seeking a CASA qualification.

4.5 Recognition of prior learning self-assessment evidence and verification

4.5.1 Evidence of recognised prior learning should be gathered by the trainee to assist the assessment against each unit of competency. This evidence can be used to explore the suitability of the student's existing skills and knowledge against the competency standards.

4.5.2 Verification can be achieved by the assessing the evidence against the requirement of each unit of competency. Subsequently, recognition of prior learning can be assessed and verified as meeting competency standards.

4.5.3 A final determination of competency is made and may include the need for gap training. Gap training is used where the trainee has not provided sufficient evidence to meet a whole unit of competency and additional training is required to meet the competency standard without undertaking the complete training for the unit.

> Annex A includes a process of how to apply for RoPL and information on types of evidence and how evidence is validated and assessed.

4.6 CASA flight test report forms

4.6.1 The CASA flight test report forms refer directly to the competencies that the flight examiner is required to assess. These competencies are derived from the corresponding flight test standards listed at Schedule 5 of the MOS. (For example, the CPL(A) flight test report form 61-1490 is derived from the MOS Schedule 5, Appendix I.1 CPL aeroplane category rating flight test).

4.6.2 The flight test requirements in the MOS states that, to assess an activity or manoeuvre, an appropriate sample of performance criteria must be selected from Schedule 2 of the MOS. However, the MOS and the flight test report forms generally specify activities and manoeuvres that require certain performance criteria to be included within that sample.

4.7 Flight Examiner Handbook

4.7.1 This manual provides standards, policy and guidelines for assessors and examiners. Importantly it contains a great deal of educational material and provides guidance for how most flight tests should be conducted. Flight examiners must comply with the requirements of, and consider the recommendations in, the Flight Examiner Handbook.

5 CASA's CBTA resources

5.1 Overview

5.1.1 CASA has developed syllabus resources based on CBTA principles. These resources provide one way to incorporate Part 61 MOS competencies into a training curriculum. Operators may choose to use the sample syllabuses by customising them to meet their own requirements. Operator specific information such as standard operating procedures, techniques and instructions for achieving the required outcomes may be included.

5.1.2 The sample syllabuses address CASA's requirements for a CBTA system that will:

- satisfy the requirements of the Part 61 regulations
- provide a reliable and well documented training system.

5.1.3 Guidance material and sample syllabuses for flight training operators can be accessed via the CASA website. These materials can be downloaded and modified by flight training operators to suit their needs, for example by inclusion of operator specific procedures and techniques to be utilised during training and assessment.

5.2 Syllabus development

5.2.1 The basic principle of a CBTA system is that the training is planned and conducted to meet approved standards, assessed against those standards and appropriately recorded. Training syllabuses must take into account all of the standards required for the particular authorisation.

5.2.2 There are several stages in the development of a training syllabus:

- **Review** - identify the units of competency required for the authorisation.
- **Design** - prepare a summary of training sessions.
- **Develop** - develop a planning matrix and a detailed lesson plan and training record document for each training session.

5.2.3 Review stage

5.2.3.1 The syllabus developer should firstly refer to the MOS units of competency required for the particular training syllabus.

5.2.3.2 The range of variables listed for each unit should be noted, and consideration given to how they may affect the training.

5.2.3.3 Any approved recognised prior learning should be accounted for in the development of the syllabus.

> An example of a Unit of Competency A3 Control aeroplane in normal flight is attached as Appendix B of this AC.

5.2.4 Design stage

Flight training and theory examination summary

5.2.4.1 The output of the design stage will be a *summary* which details the training sessions required for the delivery of the training syllabus. CASA's sample syllabuses for RPL, PPL, CPL, ME and NVFR contain a *flight training and theory examination summary*.

5.2.4.2 CASA's sample *flight training and theory examination summaries* detail the flight lessons, their sequence, dual and solo hours to be flown and assessments required for a course of training. The sequencing of theory examinations is also shown.

5.2.4.3 CASA's sample summaries should be adjusted to suit the individual needs of the flight training operator.

> For example, if a flight training operator's curriculum included turning, then the lessons and flight time would be added into the summary to reflect the flight training operator's requirements.
>
> An example of an RPL (A) training and theory examination summary involving a syllabus of 30 flights totalling 28.6 flight hours is attached as Appendix A of this AC.

5.2.4.4 For flight training operators choosing to develop their own syllabuses, the delivery of the following should be considered:

- instructor-led tutorials
- long briefings
- pre-flight briefings
- in-flight lessons.

5.2.4.5 Instructor-led tutorials may be used as a tool to provide underpinning knowledge or extend upon MOS aeronautical knowledge standards covered during ground theory training and relate this knowledge to practical flight training scenarios. These tutorials may also be useful as refresher lessons when there has been a long break between aeronautical knowledge lessons and practical application.

5.2.4.6 The developer should embed assessment activities into the syllabus at appropriate points to ensure that trainee progress is monitored, for continuous improvement and to ensure remedial training is accommodated when required.

5.2.5 Development stage

Planning matrix

5.2.5.1 During the development stage the flight training and theory examination summary is used to assist in developing a planning matrix and a detailed lesson plan and training record for each training session.

5.2.5.2 The lessons from the summary are transferred to the *lesson / flight sequence* cells at the top of the planning matrix:

a. the applicable units, elements and performance criteria from Schedule 2 of the Part 61 MOS are entered into the *Units, Elements, and Performance Criteria* cells of the matrix.
b. the matrix is then populated, with the developer planning training and assessment activities for each lesson and assigning a performance standard against the performance criteria that are to be taught or assessed in the particular lesson. Flight training operators must ensure that appropriate assessments take place before critical events such as first solo flights or flight tests.

5.2.5.3 CASA's sample planning matrices contain information such as:

- hours to be flown dual and solo
- instrument flight hours
- training phases
- aeronautical knowledge examinations.

Other information can be entered to suit the needs of an individual training operator.

5.2.6 Understanding how to use the planning matrix and training plan will assist both the instructor and trainee to achieve optimum teaching and learning.

Example:

In CASA's sample planning matrices, the numbers 1, 2, and 3 represent the achievement level (a competency grading scale expressed as performance standards) to be attained during assessments. These are explained at the top of the planning matrix. Flight training operators may use this competency grading scale or develop their own.

A detailed example of the use of the planning matrix can be seen by referring to the second abridged matrix at Appendix C of this AC. This portion has been extracted to show the specific element 'A3.4 Turn aeroplane'.

5.2.7 CASA's sample lesson plan and training record form is a comprehensive document which details:

- the date of the activity and trainee, instructor, and aircraft details
- lesson number and title
- a summary of the flight activities to be conducted (lesson overview)
- long briefing and pre-flight briefing details
- MOS underpinning knowledge items
- human factors and non-technical skills items
- MOS practical flight standards to be covered in the lesson, assessments, and achievement levels
- consolidation and new flight training
- remedial training
- a section for comments
- instructor and trainee sign-off.

5.2.8 The CASA guidance material contains complete sets of these documents to assist in development of various licences and ratings.

5.2.9 Flight training operators are free to modify these documents to suit their individual needs.

Example 1:

If a flight training operator modifies a CASA sample syllabus or develops their own, they must ensure that all required units of competency are taken into account, and the minimum aeronautical experience requirements for the authorisation as specified in Part 61 are met.

Example 2:

The example Lesson Plan and Training Record at **Error! Reference source not found.** of t his AC shows the briefings, teaching techniques and student activities required for the items that would be taught for the lesson entitled 'turning' within an RPL (A) training course.

6 Conclusion

6.1 Summary

6.1.1 Through the Federal Dept of Education, Skills and Employment, the Australian Government facilitates CBTA for all Vocational Education and Training (VET) that results with the issue of nationally recognised and accredited qualifications.

6.1.2 CBTA and RoPL are widely accepted and have been established internationally across all industries. The methods and styles of training are vast and there is a large variety of mechanisms used to adopt these methods.

6.1.3 This AC provided an introduction, guidance, and an example for flight training operators to implement CASA CBTA guidelines and standards.

6.1.4 CASA is proposing to offer further training and development tools on how to create and implement CBTA to assist operators who have little or no CBTA processes in place.

Appendix A

Example flight training and theory examination summary

A.1 Example Flight Training and Theory Examination Summary

Recreational Pilot Licence – Aeroplane Category Rating and Flight Radio Endorsement

FLIGHT TRAINING & THEORY EXAMINATION SUMMARY

LESSON #	LESSON DESCRIPTION	DUAL	SOLO	PROG DUAL	PROG SOLO	IF	PROG IF	TOTAL PROG FLIGHT TIME
RPL(A)1	Effects of Controls	1.0		1.0				1.0
RPL(A)2	Straight & Level	1.0		2.0				2.0
RPL(A)3	Climbing & Descending	1.0		3.0				3.0
RPL(A)4	Turning	1.0		4.0				4.0
RPL(A)5	Stalling	1.0		5.0				5.0
RPL(A)6	Circuit Introduction	1.0		6.0				6.0
RPL(A)7	Circuits	1.0		7.0				7.0
RPL(A)8	Circuits – Flapless & Missed Approach	1.0		8.0				8.0
RPL(A)9	Circuit Emergencies	1.0		9.0				9.0
Pre-solo examination								
RPL(A)10	Circuits - Pre-solo assessment	0.8		9.8				9.8
RPL(A)11	Circuit – First solo		0.3		0.3			10.1
RPL(A)12	Circuit Consolidation	0.5		10.3				10.6
RPL(A)13	Circuits – solo		0.7		1.0			11.2
RPL(A)14	Circuit Consolidation	0.5		10.8				11.8
RPL(A)15	Circuits – solo		1.0		2.0			12.8
RPL(A)16	Advanced Stalling	1.0		11.8				13.8
RPL(A)17	Forced Landings	1.0		12.8				14.8
RPL(A)18	Steep Turns	1.0		13.8				15.8
RPL(A)19	Crosswind Circuits	1.0		14.8				16.8
Pre-area solo examination								
RPL(A)20	Pre-training area solo assessment	1.0		15.8				17.8
RPL(A)21	First training area solo		1.0		3.0			18.8
RPL(A)22	Circuits – Short Field t/o & Landing	1.0		16.8				19.8
RPL(A)23	Consolidation	1.0		17.8				20.8
RPL(A)24	Precautionary Search & Landing	1.0		18.8				21.8
RPL(A)25	Solo Consolidation		1.0		4.0			22.8
RPL(A)26	Basic Instrument Flight	1.0		19.8		0.6	0.6	23.8
RPL(A)27	Consolidation	1.0		20.8		0.2	0.8	24.8
RPL(A)28	Consolidation	1.4		22.2		0.2	1.0	26.2
RPLA Aeronautical knowledge examination ***RPL Flight radio operator examination***								
RPL(A)29	Solo Consolidation		1.0		5.0			27.2
RPL(A)30	Pre-licence assessment	1.4		23.6		0.2	1.2	28.6
RPL Aeroplane Category Rating flight test		**1.4**		**25.0**	**5.0**	**0.2**	**1.4**	**30.0**

Appendix B

Example Unit of Competency

B.1 Example Unit of Competency

SECTION 4: AIRCRAFT RATING STANDARDS

AEROPLANE CATEGORY

A3 Control aeroplane in normal flight

1 Unit description

This unit describes the skills and knowledge required to control an aeroplane while performing normal flight manoeuvres.

2 Elements and performance criteria

2.1 **A3.1 – Climb aeroplane**

(a) operate and monitor all aircraft systems when commencing, during, and completing a climbing flight manoeuvre;

(b) adjust altimeter subscale according to applicable settings;

(c) identify and avoid terrain and traffic;

(d) for the following climbing manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre:

(i) cruise climb;

(ii) best angle climb;

(iii) best rate climb;

(e) anticipate level-off altitude and achieve straight and level flight.

A3.2 – Maintain straight and level flight

(a) operate and monitor all aircraft systems during straight and level flight manoeuvres;

(b) adjust altimeter subscale according to applicable settings;

(c) identify and avoid terrain and traffic;

(d) for the following straight and level manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre:

(i) at slow speed;

(ii) at normal cruise;

(iii) at high-speed cruise;

(iv) during acceleration and deceleration;

(v) except for the RPL, at maximum range;

(vi) except for the RPL, at maximum endurance;

(vii) with flaps selected.

A3.3 – Descend aeroplane

(a) operate and monitor all aircraft systems during descending flight manoeuvres;

(b) for the following descending manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre:

(i) glide;

(ii) powered;

(iii) approach configuration descent (flap and undercarriage);

(c) anticipate level-off altitude and achieve straight and level flight.

A3.4 – Turn aeroplane

(a) operate and monitor all aircraft systems during turning flight manoeuvres;

(b) for the following turning manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre:

(i) level turns;

(ii) climbing turn;

(iii) powered descending;

(iv) gliding descending turn;

(c) complete turn manoeuvre on a nominated heading or geographical feature;

(d) turn aeroplane at varying rates to achieve specified tracks;

(e) manoeuvre aeroplane over specified tracks or geographical features.

A3.5 – Control aeroplane at slow speeds

(a) complete pre-manoeuvre checks;

(b) operate and monitor all aircraft systems when operating the aeroplane at slow speed in straight and level, climbing, descending and turning flight;

(c) except for multi-engine aeroplane operations, select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve stable flight at the required flight tolerances that apply to the following:

(i) minimum approach speed with flaps retracted;

(ii) minimum approach speed in approach configuration;

(iii) flight at speeds just above stall warning activation or at the initial symptoms of stall;

(d) except for multi-engine aeroplane operations, observe audible and visible stall warnings and recover aeroplane to controlled flight;

(e) recognise and respond positively to reduced effectiveness of controls during slow flight manoeuvres;

(f) recognise the need to increase power while manoeuvring in slow flight to maintain nominated altitude and a margin of speed above the stall;

(g) transition from slow speed configuration, using take-off power to achieve nominated speed in excess of 1.5 Vs without loss of height.

A3.6 – Perform circuits and approaches

(a) operate and monitor all aircraft systems when operating the aeroplane in the circuit;

(b) in accordance with specific local procedures, safely perform a full circuit pattern (5 legs) by balancing and trimming the aeroplane accurately while applying smooth, coordinated control inputs to achieve the required flight tolerances specified for the flight path flown during traffic pattern manoeuvres as follows:

  (i) track upwind along extended centreline to 500 ft;

  (ii) establish and maintain cross-wind leg tracking 90° to the runway;

  (iii) establish and maintain downwind leg tracking parallel to, and at a specified distance from, the runway at circuit height;

  (iv) establish base leg tracking 90° to the runway at a specified distance from the runway threshold;

(c) perform checks as required throughout circuit;

(d) establish the approach and landing configuration appropriate for the runway and meteorological conditions, and adjust the power plant controls as required for the following:

  (i) commence and control approach descent path;

  (ii) adjust descent commencement point to take account of extended downwind leg or traffic adjustments;

(iii) align and maintain aircraft on final approach flight path with specified or appropriate runway;

(iv) set and maintain approach configuration not below 500 ft AGL;

(v) identify and maintain the nominated aiming point;

(vi) maintain a stabilised approach angle at the nominated airspeed not less than $1.3V_S$ to the round-out height;

(vii) verify existing wind conditions, make proper correction for drift, and maintain a precise ground track;

(viii) apply speed allowances for wind gusts;

(ix) configure aeroplane for landing;

(e) maintain aircraft separation and position in the circuit with reference to other aircraft traffic in the circuit area.

A3.7 – Local area airspace

(a) using an appropriate chart, for the local area and circuit area:

(i) identify geographical features;

(ii) identify geographical limits;

(iii) identify restricted, controlled and uncontrolled airspace areas;

(iv) state local airspace limits;

(v) identify the transit route between the departure aerodrome and training area;

(vi) identify the geographical limits of the training area;

(vii) identify aerodromes and landing areas within the local area;

(b) maintain orientation and pinpoint location by using geographical features and a local area chart;

(c) transit from the circuit area and transit to the designated training area;

(d) operate safely within a transit lane (if applicable);

(e) remain clear of restricted, controlled and other appropriately designated airspace;

(f) operate safely in the vicinity of local aerodromes and landing areas;

(g) transit from the designated training area to the circuit area;

(h) set QNH appropriately;

(i) correctly determine which runway is to be used for landing;

(j) ensure runway is serviceable and available;

(k) position aircraft for arrival into the circuit.

Range of variables

(a) activities are performed in accordance with published procedures;

(b) aeroplane with piston or turbine powerplant and propeller;

(c) aircraft with fixed or retractable undercarriage;

(d) aircraft with or without flaps;

(e) simulated hazardous weather;

(f) approach and landing configurations:

  (i) normal;

  (ii) flapless;

  (iii) glide;

(g) circuit patterns:

  (i) normal 1,000 ft AGL circuit;

  (ii) low-level 500 ft AGL circuit;

  (iii) full circuit pattern, including 5 legs;

  (iv) shortened circuit pattern;

(h) day VFR conditions;

(i) local area airspace limitations.

Underpinning knowledge of the following:

(a) the primary effects of controls;

(b) the secondary effects of controls;

(c) the stall warning devices;

(d) aircraft systems;

(e) aircraft performance;

(f) aircraft weight and balance;

(g) hazards when performing performance manoeuvres;

(h) turning using a magnetic compass;

(i) relationship between angle of bank, load factor and stall speed;

(j) relationship between induced drag and operating at slow speed;

(k) dangers associated with mechanical and wake turbulence;

(l) engine considerations during prolonged climbing and descending;

(m) contents of the aircraft flight manual and pilot's operating handbook;

(n) environmental conditions that represent VMC;

(o) day VFR flight rules;

(p) local area operating procedures;

(q) relevant sections of the AIP.

Appendix C

Example Planning Matrix (abridged)

C.1 Sample Planning Matrix

C.1.1 Sample Syllabus: Recreational pilot licence (aeroplane) for Part 141 (abridged)

Planning Matrix — Recreational Pilot Licence - Aeroplane (including Flight Radio Endorsement) v1.2

Performance Standards
3 = Has received training in the element, however is not able to consistently demonstrate competency to the standard required for qualification issue.
2 = Demonstrates a developing level of proficiency, and is deemed safe to conduct solo practice under direct supervision *.
1 = Achieves competency to the standard required for qualification issue.

**Solo operations for authorised sequences only*

		1 Effects of Controls	2 Straight and Level	3 Climbing and Descending	4 Turning	5 Stalling	6 Consolidation and Circuits	7 Circuits	8 Flapless & Missed Approaches	9 Circuit Emergencies	10 Circuits – Pre-solo	11 Solo Circuit	12 Circuit Consolidation	13 Solo Circuits	14 Circuit Consolidation	15 Solo Circuits	16 Advanced Stalling	17 Forced Landings	18 Steep Turns	19 Crosswind Circuits*	20 Pre-Training Area Solo	21 First Training Area Solo	22 Short Field T/O & Landing	23 Consolidation	24 Precautionary Search	25 Solo Consolidation	26 Basic Instrument Flight	27 Consolidation	28 Consolidation	29 Solo Consolidation	30 Pre-Licence	31 Flight Test	**Total hours**
Dual day		1	1	1	1	1	1	1	1	1	0.8		0.5		0.5		1	1	1	1	1		1	1	1		1	1	1.4		1.4	1.4	25.0
Solo day												0.3		0.7		1						1				1					1			5.0
Instrument flight time																											0.6	0.2	0.2		0.2	0.2	(1.4 IF)
Training phases		Phase 1											Phase 2										Phase 3										**30.0**
Aeronautical knowledge examinations		Pre-solo											Pre-area solo										RPLA										
A3.4	**Turn aeroplane**																																
(a)	operate and monitor all aircraft systems during turning flight manoeuvres				3				2	2																	1	1					
(b)	for the following turning manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre:																																
	(i) level turns				3				2	2																	1	1					
	(ii) climbing turns				3				2	2																	1	1					
	(iii) powered descending turns				3				2	2																	1	1					
	(iv) gliding descending turns				3				2	2																	1	1					
(c)	complete turn manoeuvre on a nominated heading or geographical feature				3				2	2																	1	1					
(d)	turn aeroplane at varying rates to achieve specified tracks				3				2	2																	1	1					
(e)	manoeuvre aeroplane over specified tracks or geographical features				3				2	2																	1	1					

Appendix D

Example Lesson Plan and Training Record – RPL(A) 4: Turning

D.1 Lesson plan and Training Record

D.1.1 The following is from the Sample syllabus: Recreational pilot licence (aeroplane) for Part 141) and is available from the CASA website.

Recreational Pilot Licence – Aeroplane Category Rating
and Flight Radio Endorsement

LESSON PLAN AND TRAINING RECORD
RPL(A) 4: TURNING

Flight no:	RPL(A)4.____	**Trainee name & ARN:**			
Date:		**Instructor:**			
Aircraft registration:		**Aircraft type:**		**Flight time:**	

Lesson Overview
- Adverse yaw demonstration
- Medium level turns
- Climbing turns
- Descending turns (glide and powered)
- Introduction to spiral dive – recognition and recovery (instructor demonstration only)
- Refuelling
- **Assess:**
  - Communicating face-to-face

PRE-FLIGHT KNOWLEDGE **Long Briefing: 0.8 hour Pre-flight Briefing: 0.3 hour** **Underpinning knowledge: as required**
Content
Long briefing – Turning • Aerodynamic forces acting on the aeroplane during a turn • Adverse yaw • Overbank/underbank tendency • Attitude flying • Medium level turns, climbing turns, descending turns • Spiral dive introduction - causes, symptoms, recognition and recovery technique • Instrument indications • Application in flight
Underpinning knowledge • Review/expand previously introduced knowledge as required • Basic radiotelephony phraseology and common aviation terminology [C1 4(a)&(b)] • Phonetic alphabet [C3 4(a)] • Aeronautical radio system components [C3 4(c)] • Refuelling procedures, precautions and safety requirements [C4 4(d)-(g)] • Meaning of aerodrome markings, signals and local procedures [A1 4(k)]

LESSON PLAN AND TRAINING RECORD
RPL(A) 4: TURNING

PRE-FLIGHT KNOWLEDGE **Long Briefing: 0.8 hour Pre-flight Briefing: 0.3 hour** **Underpinning knowledge: as required**	
Content	
HF & NTS • Fitness for flight • Principles of 'see and avoid' • Visual limitations • Visual scan technique - use of clock code • Lookout technique prior and during turning • Work cycle (e.g. lookout, attitude, performance-LAP) • Hand over/take over technique (e.g. 'I have control – you have control') • Control technique	
Pre-flight briefing • Review flight sequences, what to expect, see & do • Check essential knowledge • Reinforce threat & error management • Reinforce significant airmanship points	
Pre-flight knowledge components complete:	**Instructor's signature & date**

Performance Standard		
3	**2**	**1**
Has received training in the element, however is not able to consistently demonstrate competency to the standard required for qualification issue	Is able to achieve competency to the standard required for qualification issue on the majority of occasions, and is safe to operate solo under direct supervision	Achieves competency to the standard required for qualification issue

FLIGHT TRAINING
Suggested flight time: 1.0 hour dual

MOS Reference	Lesson Content *(Elements & Performance Criteria)*	Performance Standard	
		Required	***Achieved****
C1.1	**Communicating face-to-face**		
(a)	pronounces words clearly, using an accent that does not cause difficulties in understanding	2	
(b)	conveys information in clearly structured sentences without confusion or ambiguity	2	
(c)	uses an extensive vocabulary to accurately communicate on general and technical topics, without excessive use of jargon, slang or colloquial language	2	
(d)	speaks fluently without long pauses, repetition or excessive false starts	2	
(e)	responds to communications with actions that demonstrate that the information has been received and understood	2	
(f)	exchanges information clearly in a variety of situations with both expert and non-expert English speakers while giving and receiving timely and appropriate responses	2	

LESSON PLAN AND TRAINING RECORD
RPL(A) 4: TURNING

FLIGHT TRAINING Suggested flight time: 1.0 hour dual			
MOS Reference	Lesson Content *(Elements & Performance Criteria)*	Performance Standard	
		Required	Achieved*
(g)	uses appropriate techniques to validate communications	2	
C1.2	**Operational communication using an aeronautical radio**		
(c)	apply the phonetic alphabet	3	
(d)	transmit numbers	3	
(e)	make appropriate transmissions using standard aviation phraseology	3	
(f)	use plain English effectively when standard phraseology is inadequate	3	
(g)	receive appropriate responses to transmissions	3	
C3.1	**Operate radio equipment**		
(b)	conduct transmission and receipt of radio communications using appropriate procedures and phraseology	3	
C4.3	**Refuel aircraft**		
(a)	identify the correct type of fuel to be used	3	
(b)	ensure aircraft is earthed prior to refuelling and defueling operations	3	
(c)	correctly load and unload fuel	3	
(d)	ensure required fuel quantity is loaded	3	
(e)	ensure fuel caps are closed and secured after fuelling operations	3	
(f)	perform fuel quality checks	3	
C3.3	**Operate transponder**		
(a)	operate a transponder during normal, abnormal and emergency operations *(normal operations)*	3	
A3.4	**Turn aeroplane**		
(a)	operate and monitor all aircraft systems during turning flight manoeuvres	3	
(b)	for the following turning manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre:		
	(i) level turns	3	
	(ii) climbing turns	3	
	(iii) powered descending turns	3	
	(iv) gliding descending turns	3	
(c)	complete turn manoeuvre on a nominated heading or geographical feature	3	
(d)	turn aeroplane at varying rates to achieve specified tracks	3	
(e)	manoeuvre aeroplane over specified tracks or geographical features	3	

Enter the performance standard achieved if it is different to that required
Where it has not been possible to introduce performance criteria or the trainee has not achieved the required standard, the performance criteria must be covered during the next lesson. Enter these performance criteria in the lesson record for the subsequent lesson.

LESSON PLAN AND TRAINING RECORD
RPL(A) 4: TURNING

CONSOLIDATION AND/OR REMEDIAL TRAINING			
MOS Reference	Lesson Content *(Elements & Performance Criteria)*	Performance Standard	
		Required	Achieved

DEBRIEFING
Content
• Training review and outcomes achieved against lesson objectives and the Part 61 MOS competency standards • Recommendations for next lesson (including any carryover/remedial training) • Trainee preparation for next lesson • Training record completion and sign off

COMMENTS AND OUTCOME		
Proceed to next training session?	**Yes**	**No**

Instructor's signature & date	Trainee's signature & date