



Civil Aviation Advisory
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Competency Based Training and Assessment in the Aviation Environment

This an advisory publication. It provides a CASA preferred option for complying with the Civil Aviation Regulations 1988 (CAR 1988).

Always read this advice in conjunction with the appropriate regulations and Civil Aviation Orders.

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The relevant regulations and other references

- Approved Testing Officer Manual available at <http://casa.futuretrain.com.au/atom/>.
- CBT in the Aviation Environment by Mark Wolny 1999 available at http://www.casa.gov.au/wcmswr/_assets/main/seminars/cbt/cbt_aviation.pdf.
- Civil Aviation Regulations 1988 <http://www.comlaw.gov.au/comlaw/Legislation/LegislativeInstrumentCompilation1.nsf/0/478FDACD2EF9730BCA25759B001AA23F?OpenDocument>.
- Day (VFR) Syllabuses Aeroplanes Issue 4.1 and Helicopters Issue 3.1 available at http://casa.gov.au/scripts/nc.dll?WCMS:STANDARD:1527898422:pc=PC_90013.
- Flight Instructor Manual Aeroplane and the Helicopter Flight Instructor Manual available at http://casa.gov.au/scripts/nc.dll?WCMS:STANDARD:1527898422:pc=PC_90306.
- Procedures and Air Navigation Services-Training-International Civil Aviation Organization Document 9868-2006 (must be purchased from ICAO).

Who this CAAP applies to

This Civil Aviation Advisory Publication (CAAP) applies to all pilots and flight engineers, but in particular to flight instructors, Approved Testing Officers (ATO), Flight Training Examiners (FTE) and Flying Operations Inspectors (FOI).

Why this publication has been written

This publication has been written to provide practical guidance about competency based training (CBT) and assessment as applicable in the aviation environment, and how to use these principles to meet Civil Aviation Safety Authority (CASA) requirements.

Status of this CAAP

This is the first CAAP to be written on competency based training and assessment in the aviation environment.

For further information

Contact Flight Crew Licensing Section Telephone 131 757.

1. Acronyms

AOC	Air Operator's Certificate
ATO	Approved Testing Officer
ATOM	Approved Testing Officer Manual
CAAP	Civil Aviation Advisory Publication
CAR	Civil Aviation Regulations
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
CBT	Competency Based Training
CFI	Chief Flying Instructor
CPL	Commercial Pilot Licence
FOI	Flying Operations Inspector
FTE	Flight Training Examiner
GFPT	General Flying Progress Test
MFT	Manager Flight Training
OC	Operator's Certificate
PPL	Private Pilot Licence
ROV	Range of Variables
RPL	Recreational Pilot Licence
TEM	Threat and Error Management
VFR	Visual Flight Rules

2. Definitions

Airmanship: The consistent use of good judgement and well developed skills to accomplish flight objectives (International Civil Aviation Organization (ICAO) definition).

Behavioural markers: A short, precise statement describing a single non-technical skill or competency. They are observable behaviours that contribute to evidence of competent or not yet competent performance 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).

Error: Actions or inactions that:

- lead to a deviation from crew or organisational intentions or expectations;
- reduce safety margins; and/or
- increase the probability of adverse operational events on the ground and during flight.

Formative assessment: Formative evaluation monitors learning progress during instruction and provides continuous feedback to both trainee and instructor concerning learning success and failures.

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

Judgement: An opinion formed after analysis of relevant information.

Leadership: The ability of the pilot in command to induce the crew member(s) to use their skills and knowledge to pursue a defined objective.

Manage(ment): To plan, direct and control an operation or situation.

Non-technical skills: Specific human factors competencies, such as lookout, situation awareness, decision making, task management and communications.

Safe(ly): Means that a manoeuvre or flight is completed without injury to persons, damage to aircraft or breach of aviation safety regulations, while meeting the standards specified by the Civil Aviation Safety Authority.

Safest outcome: Means that the manoeuvre or flight is completed with minimum damage or injury under the prevailing circumstances.

Situation awareness: Knowing what is going on around you, being able to predict what could happen.

Stakeholders: Any person involved with, or affected by the flying operations to be performed.

Standard Operating Procedure: Any procedure included in the operations manual of an Air Operator's Certificate (AOC).

Stress(ors): Disturbing physiological or psychological influences on human performance that may impact adversely on the safe conduct of a flight or situation.

Summative assessment: A summative evaluation 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 and knowledge skills a pilot employs when operating an aircraft.

Threat (University of Texas definition for multi-crew/ Line Operations Safety Audit (LOSA) operations):

Events or errors that:

- occur outside the influence of the flight crew;
- increase the operational complexity of the flight; and
- require crew attention and management if safety margins are to be maintained.

Threat (CASA modified definition for single pilot operations): A situation or event that has the potential to impact negatively on the safety of a flight, or any influence that promotes opportunity for pilot error(s).

Threat and Error Management (TEM): The process of detecting and responding to threats and errors to ensure that the ensuing outcome is inconsequential, i.e. the outcome is not an error, further error or undesired state.

Undesired aircraft state: Pilot induced aircraft position or speed deviations, misapplication of flight controls, or incorrect systems configuration, associated with a reduced margin of safety.

3. Introduction

3.1 Why this Civil Aviation Advisory Publication (CAAP) is issued

3.1.1 The Day Visual Flight Rules (VFR) Syllabuses and the proposed Civil Aviation Safety Regulations (CASR) Part 61 Flight Crew Licensing rely on competency based training and assessment as the means of achieving the specified standards for licences, ratings or endorsements. The purpose of this CAAP is to provide guidance to persons seeking pilot or flight engineer qualifications and to those providing training and assessment who will require knowledge of the competency based training and assessment system used by CASA.

3.1.2 In 1999 CASA first introduced competency standards for private and commercial pilots, to align with the national industry training and assessment system. More importantly, the development of precise flight standards afforded an opportunity to clarify and standardise flight training and assessment in Australia. However, little training or guidance material was produced and gaps occurred in its implementation.

3.1.3 Flight training in Australia (and the rest of the world) has always been based on competency...”If you can’t take-off, do a circuit and land, you can’t go solo”. However, the training system often lacked structure, clearly defined outcomes and standardisation. The introduction of CBT provided a means to rectify some of these deficiencies if the CBT is correctly employed. The aim of this CAAP is to help users of the CBT and assessment system to better understand the concepts and ensure its efficient application of it.

4. Competency based training and assessment

4.1 What is competency based training (CBT) and assessment?

4.1.1 Simply put, competency based training and assessment means that a person is trained and assessed to meet specified standards that define the skills, knowledge and behaviours required to safely and effectively 'do a job'. To explain further, a 'job' could be the more complex requirements of a pilot licence or simply to perform a task such as operating a piston engine. A term that often appears in a CBT system is 'outcome based'. This just means that at the end of their training a person is able to perform a 'job' or task to the appropriate standard (outcome). To summarise a CBT and assessment system:

- is about what a person can do (ie the outcome of training);
- ensures training is to specified standards, (rather than ranking against others); and
- reflect what a person must do in 'real life' or the workplace.

4.1.2 Before a person can be assessed, they must receive structured training that addresses all the standards required to gain the qualification such as a licence, rating or endorsement. Accordingly, all the training must be planned. A *training plan* will set out in detail all the skills, knowledge and behaviours that must be taught to a person in a logical sequence of the training events, how the training will be conducted and recorded, the coordination of theory and flight training and how and when assessments should be performed. It should also allow for planned and sound adjustments to training if contingencies such as unexpected weather or operational restrictions arise. The plan must be documented and made available to training staff. Finally, the training must be monitored and controlled by the Chief Flying Instructor (CFI) or Manager Flight Training (MFT).

4.1.3 A person cannot be granted a CASA qualification unless they are assessed against a standard. To ensure the quality of the assessment, the standards must be measurable, objective, valid, authentic, sufficient and current. All these terms will be explained later in this CAAP. However, the cornerstone of a competency based training and assessment system is *rigorous and objective assessment of the trainee against valid standards*.

To clarify this statement, the teaching methods may vary between training organisations, but the final result must be that a trainee meets a consistent and appropriate standard.

4.1.4 Assessment is the process of weighing evidence of an individual's performance against a standard. The evidence used must follow an established set of rules. These are:

- **Validity:** it must cover all the performance criteria for the skills and knowledge of the standard being assessed;
- **Authenticity:** it must be the individual's own work;
- **Sufficiency:** enough evidence must be collected to judge the individual is competent across:
 - all elements and performance criteria;
 - all dimensions of competency; and
- **Currency:** the individual is competent now and meets the current standard.

In addition to these rules, standards must be measurable and objective. Measurability is determined by having performance criteria in the standard that allows the required skills, knowledge and behaviours to be accurately and unambiguously graded to ensure that the desired performance is achieved. To be objective, the standards must be free from personal feelings and prejudices. To achieve objectivity, an assessor should refer to the measurability of the activity. Only with evidence which follows these rules can an accurate judgment of an individual's competence be made.

4.1.5 'Dimensions of competency' means that the assessment is not narrowly based on a task, but embraces all aspects of performance and represents an integrated and holistic approach to the assessment. The assessment process must take into account task skills, management and contingency skills, role skills and transfer 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 combines knowledge, understanding, problem solving, technical skills and application into the assessment.

4.1.6 Readers of this CAAP will notice that more emphasis is placed on assessment rather than training. This is because there is abundant advice on flight training methods in such publications as the *Flight Instructor Manual Aeroplane* and the *Helicopter Flight Instructor Manual* published by CASA. The guidance contained therein is comprehensive and CASA recommends that aeroplane and helicopter instructors refer to both of the manuals to refresh or improve their instructional knowledge. As formal assessment training is limited, yet is the cornerstone of a competency based training and assessment system, more stress is placed on these aspects in this CAAP.

5. Competency standards

5.1 What are competency standards?

5.1.1 A competency standard is one of the tools used to establish a person's competence to 'do a job' and gain a qualification. Flight instructors and assessors must be conversant with and comfortable using, competency standards. The flight standards developed and promoted by CASA are unique. They differ from national industry standards controlled and administered by the Department of Education, Employment and Workplace Relations (DEEWR) which are applicable to many industries (including aviation) in Australia.

The CASA standards are designed to complement the aviation flight training regime and have been simplified to accommodate the training that flight instructors will undergo.

5.1.2 Tools are devices used to assist and simplify the completion of a task. In the CASA competency based training assessment system some examples of tools that can be used to assist and simplify the task of assessment are:

- flight standards;
- achievement records;
- training records;

- pilot's log books;
- examination results;
- instructions for assessors and candidates;
- CASA flight test forms; and
- Approved Testing Officer Manual (ATOM).

5.1.3 A competency standard is comprised of five components which are; units, elements, performance criteria, range of variables and underpinning knowledge. All these components must be understood and applied during assessment. Refer to Appendices 1 and 2 to clarify the following explanation.

5.1.4 A **Unit** of competency represents a discrete job or function that is written as a measure of outcome. As an example from the Day VFR Syllabus, **A4 Land Aeroplane** is a Unit and is shown at Appendix 1. Each Unit has its own description. For example:

- **Unit Description:** Skills and knowledge to land an aeroplane into wind and crosswind and to perform a mishandled landing when required.

5.1.5 The unit is subdivided into the **elements** which detail the various functions that must be carried out to satisfy the Unit Description. For example:

- By analysing what is required to be done to land an aeroplane safely in all conditions and to deal with the contingency of a mishandled landing, the following three elements evolve:
 - *Land aeroplane;*
 - *Land aeroplane in a crosswind; and*
 - *Perform a mishandled landing procedure.*

5.1.6 Each element has a number of **performance criteria**. The performance criteria are evaluative statements that specify what is to be assessed and the required level of performance. The performance criteria are often considered to be the crux of a flight standard and contain behavioural markers that are used to measure a person's performance. Each performance criteria starts with verbs that denote an action that must be carried out to demonstrate competency. For example *'Identifies and selects'*, *'Touches down'*, *'Manages'*, *'Performs'* are actions that you would expect to see from the trainee.

5.1.7 The performance criteria applicable to the element 'Land aeroplane' are:

- Identifies and selects aiming point;
- Selects power to idle prior to touchdown;
- Flares the aircraft at an appropriate height;
- Controls ballooning during flare and bouncing after touchdown by adjustment of attitude without the application of power;
- Touches down at a controlled rate of descent aligned with runway centreline;
- Touches down within 400 ft/120 metres for PPL or 200 ft/60 metres for CPL beyond a nominated touchdown point;
- Touches down ± 2 metres of centreline;
- Touches down on the main wheels and the nose wheel is lowered onto the runway without harshness;
- Maintains directional control along the centreline;
- Applies braking to stop the aircraft within landing distance available;
- Performs after-landing checklist; and
- Maintains separation from other aircraft.

Each of these performance criteria must be met for a person to be assessed as competent to land an aeroplane safely as a private or commercial pilot. The words in the performance criteria that are underlined are defined in the Day VFR Syllabus or the Manual of Standards for Part 61 regulations to assist clarification.

5.1.8 The **Range of Variables (ROV)** add definition to the performance criteria by elaborating critical or significant aspects of the unit of competency and detail conditions and contexts that should be applied during assessment. For example, in the ROV for 'Land aeroplane', the first two items, namely, 'Single or multi-engine aircraft' and 'Day VFR' mean that the competency may be conducted in single or multi-engine aircraft and that it must be performed in VFR during daylight hours. If these conditions are not met then the assessment is invalid.

However, CASA standards have a unique characteristic in that a **Generic Range of Variables** also applies to each standard. The generic range of variables was developed so that they did not have to be repeated in every unit of competency. Assessors must apply the conditions stated therein, to all units of competency that they are assessing. The generic ROV clarify such issues as consistency of performance, the effect of turbulence on flight tolerances, temporary divergence from flight tolerances and determination of the difference standards for private and commercial pilots. It is very important that assessors always use the appropriate ROVs for each assessment. The Generic Range of Variables is at Appendix 1.

5.1.9 The **underpinning knowledge** is specific knowledge applicable to the unit of competency that may not be covered by a CASA licence or rating examination. For example, one of the items of underpinning knowledge for the 'Land aeroplane' competency is a requirement to 'Interpret windsock indications'. This knowledge should be provided by a flight instructor during flight training and candidates should expect to demonstrate how to interpret a windsock during an assessment or on a flight test. The 'Land Aeroplane' competency standard is at Appendix 2.

5.1.10 **Skills, knowledge and behaviour.** Most Unit Descriptions start with the words 'Skills, knowledge and behaviours to...'. In national and other competency standards the words 'Skills, knowledge and attitudes' are usually used. Why the preference of behaviour over attitude? One of the major areas being emphasised by CASA is the training and assessment of human factors. The assessment of human factors relies on the observation of behaviours. This is not just semantics: it is important to understand why 'behaviour' is the determinant. Attitudes are part of a person's 'mental make-up' which can only be speculated upon. Attitudes such as anger, recklessness or impulsiveness are often suppressed or hidden and cannot be determined until behaviour such as 'lashing out', failing to follow rules or conduct of some unsafe impulsive action (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'.

6. Tools of the trade

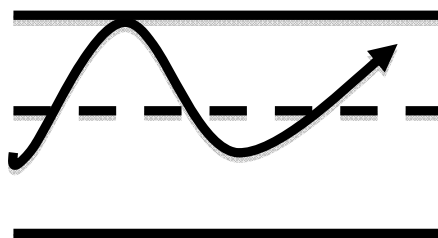
6.1 What are tools of the trade and how do I use them?

6.1.1 In paragraph 5.1.2 the context of the word 'tools' was explained. Examples were given of some of the tools provided by CASA or extant within the training system to assist with assessments. Instructors and assessors should be familiar and comfortable with these instruments. Understand them and being aware of the assistance and benefits they can provide removes any sense they are mere 'bureaucratic implements'. Respect for assessment tools renders their use less onerous. The resources listed in paragraph 5.1.2 are discussed in the following paragraphs.

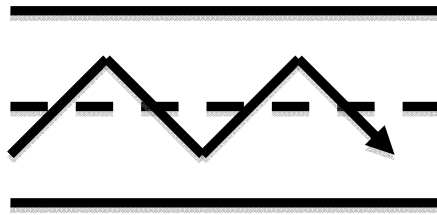
6.1.2 **Flight standards** are probably the most valuable resource available to a flight instructor or assessor. They clearly define what must be assessed and detail the functions to be carried out (elements) and behavioural markers in the performance criteria specify what is to be assessed and to what level, under what conditions (generic and unit ROVs at Appendix 1 and 2) and what underpinning knowledge (if any) should be examined. However, the standards are only as good as the person who applies them. Therefore, assessors should be meticulous when using standards, paying particular attention ensuring all the components in a standard are considered (ie elements, performance criteria, ROV and Generic ROV and underpinning knowledge) when making an assessment.

6.1.3 As a practical example, a number of scenarios are presented of pilots controlling an aeroplane while maintaining level flight during straight and level flight (refer to Unit A3 'Control Aeroplane in Normal Flight', Element 3.2 from the Day VFR Syllabus). Also following is an explanation of the process of making an assessment of the element 'Maintain straight and level flight'.

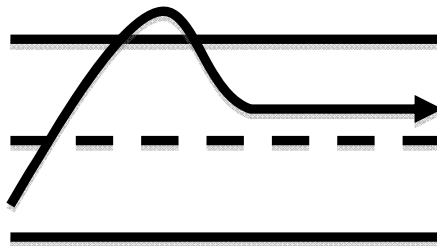
Candidate A –



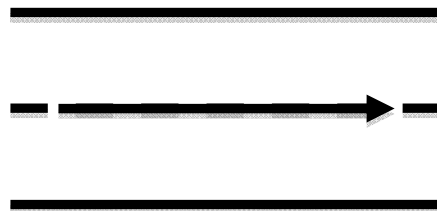
Candidate B



Candidate C



Candidate D



6.1.4 In the scenarios depicted in the diagrams, where the ‘arrowed’ solid lines represent the flight path, candidates A and B may consider they meet the standard because they remain within the height bands specified (± 100 ft for CPL). Candidate C may believe that the standard has not been met because of an excursion outside the height band and candidate D may feel confident that the standard has been achieved. However, if these candidates are rigorously measured against the standard, there may be a different story.

6.1.5 The first performance criteria for the element 'Maintain straight and level flight' starts with '*Sets and maintains power and attitude to...*', and observation by the assessor may clearly indicate that candidates A and B were unable to set a constant attitude and power (unless turbulence is involved, but refer to the third and fourth dot points in the generic ROV at Appendix 1). Candidate C eventually meets the 'attitude and power' criteria. But, what about the excursion outside the height band by candidate C? Again, the sixth dot point in the generic ROV addresses this issue. So candidates C and D are still in the running!

6.1.6 But are those two candidates maintaining heading $\pm 10^\circ$, IAS ± 10 kt, correctly setting the altimeter subscale and balancing and trimming the aircraft? If they are, but fly into cloud, run into another aircraft or a mountain, they do not meet the sixth performance criteria. And they must 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.

6.1.7 Candidates A and B do not meet the standards, and candidates C and D would meet 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. This process may seem complicated and laborious, but with practice, and familiarity using the standard, the assessment process is not difficult. Every day instructors and ATOs make these judgements very quickly and accurately when they apply the rules of assessment. However, the principles will not be worth the paper they are written on if rigorous and meticulous assessment using the standards is not conducted.

6.1.8 **Achievement records.** The reason the achievement record was developed is two-fold; first to ensure that each element of the Day VFR Syllabus flight standards are taught, assessed and recorded and secondly to afford the trainee the opportunity to review their training and make certain that they understand what training they are required to complete.

Unfortunately, some people see the achievement record as a bureaucratic imposition that serves little purpose but 64 individual signatures over a 150-hour flying course is not demanding. However, not only do they serve as a checklist of what must be learned to get a licence, but also protect flight training organisations. By signing the document, both the instructor and the trainee are acknowledging that the trainee has been taught to standards approved by industry and CASA that are aligned with the national aviation standards and supported by the Civil Aviation Act.

It is important that each element in the achievement record is signed off correctly. All the performance criteria must be competently demonstrated on at least two different flights. For the more regularly practiced activities such as climbing, descending, hovering, take-off and landing, assessment opportunities are not a real issue.

However, for some activities such as precautionary search, or land and take-off a helicopter from a pinnacle which may be trained and assessed by an instructor on one flight, the situation may be different. The second flight may not take place until the pre licence test by a Grade 1 instructor who may be required to sign the unit off in the achievement record. To ensure validity, the training records should support the achievement records.

6.1.9 Flight training records. Flight training records have always been a part of the aviation training environment. They record the progress of a trainee and identify areas of weakness that require further development. These records, by their nature, generally highlight problem areas and therefore, often paint a negative picture (and so the term 'hate sheets' evolved). However, in a CBT system, training records need to also document the achievement of competency during training. When a trainee consistently demonstrates competency the results should be recorded in the training records. These comments should then support the completion (sign off by instructor/assessor) of the achievement records. Finally, the training records should be comprehensive, with enough information so that any other instructor, who may be required to 'step in' and train the student, can do so without difficulty or doubt.

6.1.10 Pilot's log books and examination results.

These two items provide evidence of a person's training and achievements. The log book details the flying experience, type of flight training that has been undertaken and qualifications awarded (endorsement and ratings). The examination results record the examinations passed for CASA licences and ratings. All this information can help inform the final assessment of a person seeking a CASA qualification.

6.1.11 Instructions for assessors and candidates, and CASA flight test forms. The CASA flight test forms are a very useful resource that, when used diligently, greatly assist the assessment process. All the items on the flight test report for both the ground and flight phases must be tested. At the beginning of the flight test report are instructions for the assessor and the candidate which give guidance on how the test should be conducted and any conditions that must be met. If an item specified in the flight test is in **bold print** it represents a complete unit of competency that must have all the elements tested.

However, if the item is in normal print it denotes an element of a unit and only that item need be tested (e.g. H6.1 Turn helicopter steeply). The bottom line is that after the flight test the assessor can say that every performance criteria was achieved by the candidate to the appropriate standard.

6.1.12 Approved Testing Officer Manual. A recent addition to the tools provided by CASA to assist ATOs, FOIs and FTEs in the conduct of their duties is the ATOM. The ATOM is available at www.casa.gov.au (just type 'atom' into the 'search the site' box). This excellent manual provides standards, policy and guidelines for the testing officers and examiners. Importantly it contains a great deal of educational material. CASA strongly recommends that assessors and flight instructors read this publication. It also contains flight test forms and provides guidance about how most individual flight tests should be conducted.

6.1.13 Tools or resources will assist assessors to perform their duties. By being familiar with them assessors should become comfortable and confident that the judgements that are made about a person's competency are valid and truly representative of the candidate's skills, knowledge and behaviours.

7. More about assessment

7.1 Formative, diagnostic and summative assessments

7.1.1 In the explanation of formative, diagnostic and summative assessment that follows, emphasis will be on the application of these methods in the context of the CASA CBT and assessment system. There may be some blurring of the three different forms of assessment because of the administrative practices introduced by CASA. For example the completion of the achievement record may be seen by some as a summative assessment, when in fact it is conducted before the end of training. So read on.

7.1.2 A *formative assessment* (or evaluation) monitors learning progress during instruction and provides continuous feedback to both the trainee and the instructor concerning learning successes and inability to meet standards. This is the type of assessment that an instructor would make about a trainee on nearly every flight.

The main purpose is to gauge the progress of the trainee's learning and to determine whether to move on to new activities or repeat training exercises. To be able to do this accurately, instructors must be familiar with the final standards that must be achieved and then be able to determine if the trainee is progressing (learning) according to the training plan. Instructors should also seek and note consistency in performance.

One successful performance of a unit or element of a standard is not an indication of competency; in the CASA CBT and assessment system; competence must be demonstrated on at least two flights. When competency is confirmed to the final standard specified on two different flights, the trainee's achievement record may be certified by the instructor, and the flight training record should also be appropriately annotated.

7.1.3 A *diagnostic assessment* is 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. It is akin to a formative assessment. However, this type of appraisal may require the instructor to delve deep into the trainee's learning difficulties and develop a suitable teaching technique to ensure the trainee achieves competence (there may be more than one way to skin a cat!).

7.1.4 A *summative assessment* is an evaluation that is conducted at the end of a course of training and determines if the instructional objectives (competency standards) have been achieved. A summative assessment must be rigorous and meticulous and comply with the rules of evidence mentioned in paragraph 4.1.4. Some examples of summative assessment applicable to the CASA CBT and assessment system are the general flying progress test (GFPT/Recreational Pilot Licence (RPL) in Part 61 regulations), private or commercial pilot licence and command instrument rating flight tests. The flight test is a holistic evaluation. It is an appraisal that embraces multiple units and elements and seeks to confirm skills, knowledge, behaviours, understanding and problem solving as part of the assessment process. The flight test should be problem based, interdisciplinary and reflect real life flying activities that require analysis, theory and practice.

In other words, the test confirms that the trainee is able to apply all the skills, knowledge and behaviours certified on the achievement record in a practical task scenario such as a simulated charter or instrument navigation flight.

7.1.5 As noted earlier in this CAAP, assessment is the cornerstone of the CASA CBT and assessment system and formative, diagnostic and summative evaluations are an integral part of the training and evaluation structure. Properly conducted assessment techniques ensure good training and the achievement of the standards.

8. A CBT and assessment program

8.1 A CBT and assessment program

8.1.1 CASA has developed a training program based on CBT principles. This training program is available at <http://www.casa.gov.au/seminars/cbt/intro.htm> . The training program is *A* way (not *THE* way) to develop a training curriculum that suits the individual needs of a flight training organisation. It serves as a model or template that can be utilised and adjusted by a flying school. It meets all the CASA requirements for a CBT system that will satisfy the future requirements of CASR Part 61 regulations as well as provide a reliable and well documented training system.

8.1.2 The training program (on the CASA website) not only has an audio-visual presentation, and all the resources for GFPT, Private Licence (PPL) and Commercial Pilot Licence (CPL) aeroplane training courses. These can be downloaded for use by schools (just put the school name on the top and modify to suit your specific needs). There are no helicopter resources other than a planning matrix. However, the principles of use are the same and the aeroplane elements of competency only need to be replaced by the helicopter equivalents. If the resources seem excessive, remember that they are all-inclusive (from go to whoa!), However, to help understand the program, this CAAP will explain how the system was developed. It is strongly recommended that readers listen to the eight audio-visual explanations before proceeding any further.

8.1.3 The basic principle of a CBT system is that the training is planned and conducted to meet approved standards, assessed against those standards and appropriately recorded. The starting point of the system is the *Training Summary* which details the flight lesson and sequences, dual and solo hours to be flown and assessments required for a course of training such as the GFPT aeroplane (see Appendix 3). However, the training summary may be adjusted for individual school needs.

For example, if a curriculum for a school included aerobatics, then the lessons and flight time would be added in the training summary to reflect that school's requirements. An example of a GFPT training summary follows. Note that the course involves 30 flights totalling 29 flight hours.

The next stage is to develop the *Planning Matrix* (see Appendix 4). This is where the detailed planning of the course is done. The 30 lessons from the training summary are transferred to the top of the matrix and all the units and elements of competency from the Day VFR Syllabus/MOS Part 61 are entered into the left side of the page (available from the Achievement Record). The matrix is then populated. *Important note: The matrix at Appendix 4 has been derived from the GFPT matrix available in the CBT program. It has been modified to aid explanation by deleting columns seven to 23 and rows 41 to 69. In addition the unit 'Threat and error management' has been added to row 32.*

By referring to the matrix it can be seen that the first seven rows contain information pertinent to hours to be flown dual and solo, assessments and when they are to occur and theory training and examinations. Other information can be entered here to suit an individual training organisation's needs. The rows containing the units and elements are populated to show in which lessons the training and assessment is planned to take place. The training tasks and assessments can be adjusted to ensure that the individual lessons are practical and appropriate assessment takes place before critical events such a first solo or flight tests. Next refer to column/lesson four 'Climbing and Descending' in Appendix 4; this column provides the basis for the *lesson plan* for this training flight. By translating the information available in this column a comprehensive lesson plan for climbing and descending, (as well as other associated elements) is developed.

Examination of the lesson plan in Appendix 5 shows what briefings are required, teaching techniques, student activities, resources required and items that will be trained on the flight. In the planning matrix the numbers **2** and **3** appear. These numbers represent the achievement level to be attained during assessments and are explained in the Day VFR Syllabus.

8.1.4 A further example of the use of the planning matrix can be seen by referring to row 41 'A6.4 Conduct precautionary search and landing'. From this row it should be noted that precautionary search training does not start until lesson 24 which is 23 flight hours into the course. The lesson is dual and repeated and monitored on lesson 26, practiced solo on lesson 28 and assessed on lessons 27 and 29. Understanding how to use the training matrix and training plan will assist both the instructor and trainee to achieve optimum teaching and learning.

8.1.5 At this stage the planning component of the flight training is completed. The next phase in the use of the CBT program is concerned with the recording of the training results. This is a most important aspect of the process and CBT and assessment systems demand accurate and valid methods of recording a trainee's competency.

8.1.6 **Recording the trainee's progress.** Using the planning matrix and the lesson plan, a *Lesson and Assessment Record* is developed (see Appendix 6). This document replaces the student training record commonly used in schools. CASA has produced a comprehensive document for each flight lesson and it details:

- student name and ARN;
- lesson number and title;
- the flight activities to be conducted;
- pre-flight knowledge and briefings;
- remedial training;
- assessments and achievement levels;
- consolidation and new flight training;
- a section for comments;
- flight details; and
- instructor/trainee sign-off.

8.1.7 The Lesson and Assessment Record is the primary recording document for flight training and CASA has provided one for each of the flight lessons in the flight training program. Schools should modify this document to suit their individual needs, and supervisors should ensure the correct use of it by their staff and trainees.

8.1.8 CASA also includes an *Achievement Matrix* which provides a useful tool to enable the evidence in the lesson and assessment records to be monitored and transferred to the achievement record. This matrix is a copy of the planning matrix and two options are available. They are performance based or criterion based matrices. Each has advantages and disadvantages and should be considered for use by a flight training organisation. The audio visual explanation on the CASA website explains the use of this document.

8.1.9 Finally, the *Achievement Record*...this is the point through which all trainees must pass and it contains a list of all the units and elements of competency in which a person must be trained and assessed. It serves the trainer by being a checklist of training completed and the trainee is made aware of the training that they must undertake and offers a chance to review their training to ensure that it has been adequately conducted.

The achievement record is also the basis for the training plan and the Planning Matrix. It must be signed off by both the assessor and the trainee and should be completed before the pre licence flight test and a 'competent' assessment can only be made after a demonstration of competence on a least two different flights.

8.1.10 It is important that the achievement record is reflective of the *Lesson and Assessment Record*. In other words, instructors and assessors must not only include comments about a trainee's deficiencies and learning problems in the lesson and assessment record, but should also contain information and certification whenever competence is demonstrated.

8.1.11 The CBT program provided by CASA is a template for flight training organisations to develop a training system that is compliant with the Day VFR Syllabus and the proposed Part 61 Flight Crew Licensing regulations. It will provide a systematic approach to flight training that if properly used can only improve the training provided by a flight training organisation.

Use of the resources provided by CASA will stimulate thought about how an organisation conducts flight training and may provide an opportunity to innovate and improve training methods. A summary of the audio visual display on the CASA website is at Appendix 7 to this CAAP.

9. So what does it all mean?

9.1 The CASA competency based training and assessment system

9.1.1 Competency based training and assessment was introduced by CASA in 1999 to comply with the national requirement for industries undertake training and assessment using a systematic approach.

A systematic approach to flight training in the CASA context means that:

- all flight training is conducted to meet approved standards for a licence, rating or endorsement;
- flight training is planned to be logical, effective, relevant and appropriate;
- results of training are correctly and comprehensively recorded;

- assessments are rigorous, meticulous and measured against approved standards; and
- training is validated by summative flight tests.

9.1.2 Trainers and assessors involved in the competency based training and assessment system should understand and be able to apply CASA requirements. To aid flight training organisations to achieve this goal CASA has provided training resources that may be used as-is, or modified to adapt to a flight training organisation's needs. The purpose of this CAAP is to assist training organisation executives, instructors and assessors to understand and apply the CASA competency based training and assessment guidelines and thus develop and maintain the highest standards of flight training and assessment.

APPENDIX 1 to CAAP 5.59A-1(0)

Table 1: Generic Range of Variables

Range of Variables
<ul style="list-style-type: none"> • Performance standards are to be demonstrated in flight in an aircraft of the appropriate category equipped with dual flight controls and electronic intercommunication between the trainee and the instructor or examiner. • 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. • When minimum descent altitudes (MDA) and not below or above heights are specified, the tolerance for straight and level height must be adjusted to (+100 –0 ft) or (+0 –100 ft) as applicable. • Infrequent temporary divergence from specified tolerances is acceptable if the pilot applies <u>controlled corrective action</u>. • 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. • Recreational and private pilots should demonstrate that control of the aircraft or procedure is maintained at all times but if the successful outcome is in doubt, corrective action is taken promptly to recover to <u>safe</u> flight. • Commercial and air transport pilots should demonstrate that control of the aircraft or procedure is maintained at all times so that the successful outcome is assured.

Range of Variables

- The following evidence is used to make the assessment:
 - The trainee'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 trainee'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 trainee's flight training records, including details of training flights and instructors' comments, to support assessment of consistent achievement.
 - The trainee's log book for evidence of flight training completed.
- For licence and rating issue:
 - Completed application form, including; licence or rating sought, aeronautical experience, CFI recommendation and the result of the flight test.
 - Completed flight test report indicating units and elements completed.
- Examination results and completed knowledge deficiency reports.

APPENDIX 2 to CAAP 5.59A-1(0)**Unit A4 Land Aeroplane – Flight Standard (PPL and CPL)**

Unit Description: Skills and knowledge to land an aeroplane into wind and crosswind and to perform a mishandled landing when required.

Element	Performance Criteria
A4.1 Land aeroplane	<ul style="list-style-type: none"> • Identifies and selects <u>aiming point</u>¹ • Selects power to idle prior to touchdown • Flares aircraft at an appropriate height • Controls ballooning during flare and bouncing after touchdown by adjustment of attitude without the application of power • Touches down at a <u>controlled rate of descent</u>², aligned with runway centreline • Touches down within 400 ft/120 metres for PPL or 200ft/60 metres for CPL beyond a nominated <u>touchdown point</u> • Touches down ± 2 metres of centreline • Touches down on the main wheels, and the nose wheel is lowered onto the runway without harshness • Maintains directional control along the centreline • Applies braking to stop the aircraft within landing distance available • Performs after-landing checklist • Maintains separation from other traffic.
A4.2 Land aeroplane in a crosswind	<ul style="list-style-type: none"> • Configures aircraft for crosswind landing • Tracks aircraft above runway centreline • Selects power to idle prior to touchdown • Flares aircraft at an appropriate height • Controls ballooning during flare and bouncing after touchdown by adjustment of attitude without the application of power • Touches down at a <u>controlled rate of descent</u>³, aligned with runway centreline • Touches down within 400 ft/120 metres for PPL or 200 ft/60 metres for CPL beyond a nominated <u>touchdown point</u> • Touches down ± 2 metres of centreline • Prevents wing rise after touchdown • Maintains directional control along the centreline • Applies braking to stop the aircraft within landing distance available without wheel lockup • Performs after-landing checklist.

¹ The 'aiming point' related to a visual approach and landing of an aircraft, is that point at which a pilot looks, to achieve a predetermined touchdown point.

² 'Controlled rate of descent' associated with a landing means that the touchdown is without harshness and the successful outcome of the landing is not in doubt.

³ 'Controlled rate of descent' associated with a landing means that the touchdown is without harshness and the successful outcome of the landing is not in doubt.

A4.3 Perform mishandled landing procedures	<ul style="list-style-type: none"> • Recognises when the landing standard cannot be achieved and implements a decision to perform <u>mishandled landing</u>⁴ • Controls aeroplane • Applies take-off power • Controls aircraft direction while airborne and on the ground • Lifts off at take-off safety speed or establishes climb attitude if airborne • Retracts undercarriage and flap if and when applicable • Performs after-take-off checks.
Range of Variables	
<ul style="list-style-type: none"> • Single- or multi-engine aircraft • Day VFR • Aircraft with nose wheel or tail wheel • Aircraft with or without flaps • Aircraft with fixed or retractable undercarriage • Sealed, gravel or grass runways and taxiways • Propeller/rotor wash and jet blast • Windsocks • Aircraft operated to crosswind limits, minimum assessment to 70% of maximum crosswind component • Limitations, such as those imposed by local noise abatement procedures and curfews. 	
Underpinning Knowledge	
<ul style="list-style-type: none"> • Recognise and respond to conditions leading to a mishandled landing • Calculate landing performance • Recall the crosswind limits for the aircraft type flown • Calculate crosswind components • Interpret windssock indications • Explain causes of loss of control of an aircraft on landing. 	

⁴ 'Mishandled landing' means to recognise an abnormal landing and recover the aircraft to controlled flight. Often associated with a 'go around'

APPENDIX 3 to CAAP 5.59A-1(0)**Training Summary**

Lesson number	Title	Duration Dual	Duration Solo	Assessment
1	Effects of Controls	1.0		
2	Straight and Level (S&L)	1.0		
3	Medium Turns	1.0		
4	Climbing and Descending	1.0		Pre take-off, S&L
5	Stalling	1.0		Pre take-off, S&L, stalls
6	Circuit Introduction	1.0		Stalls
7	Circuits	1.0		
8	Circuits	1.0		
9	Circuits	1.0		Circuits
10	Pre Solo	1.0		Pre solo theory, circuit
11	Solo Circuits		0.3	
12	Circuit Consolidation	0.5		
13	Solo Circuits		0.7	
14	Circuit Consolidation	0.5		
15	Solo Circuits		2.0	
16	Advance Stalls	1.0		Stalls
17	Forced Landings	1.0		Stalls, crosswind
18	Steep Turns	1.0		Various, T/A
19	Pre Training Area Solo	1.0		Various, T/A
20	Training Area Solo		1.0	
21	Short Field Take-off & Landing	1.0		
22	Instrument Flying	1.0 (sim)		
23	Consolidation	1.0		
24	Precautionary Search	1.0		
25	Solo Consolidation		1.0	
26	Consolidation	1.0		
27	Consolidation	1.0		Various
28	Solo Consolidation		1.0	
29	Pre Licence	1.0		Pre license
30	Flight Test	1.0		Licence test
	TOTAL	23.0	6.0	

APPENDIX 4 to CAAP 5.59A-1(0)

Planning Matrix

Day VFR Syllabus	Part 61	Lesson	1	2	3	4	5	6	24	25	26	27	28	29	30	Total hours	Number of Assessments at level 2		
		Flight sequence	Effects of Controls	Straight and Level	Medium Turns	Climbing and Stalling		Circuit Introduction	Precautionary Search	Solo Consolidation	Consolidation	Consolidation	Solo Consolidation	Pre Licence	Flight Test				
		Dual hrs (*=simulator)	1	1	1	1	1	1	1		1	1		1	1			11	
		Solo hrs									1			1					2
		Units/Elements	Assessment				A	A	A			A	A		A			A	13
Block 1 Theory Exams					Phase 1						BAK								
	C1	English communication standard																	
	C1.1	Communicate effectively face to face using clear and precise English	D	M	M	M	M	M		S	M	M	S	2	T		1		
	C1.2	Communicate effectively using voice-only R/T communications using standard aviation phraseology	D	M	M	M	M	M		S	M	M	S	2	T				
1	C2	Manage pre and post flight actions																	
1.1	C2.1	Complete pre and post flight administration	D	M	M	3	3					2		2	T		2		
1.2	C2.2	Perform pre flight inspection	D	M	M	3	3					2		2	T		2		
1.3	C2.2	Certify for pre flight inspection	D	M	M	4	4					3		3	T		0		
2	C3	Operate radio																	
2.1	C3.1a	Use R/T equipment (circuit area)		D	M	M	M	M				2		2	T		2		
	C3.1b	Use R/T equipment (training area)										2		2	T		2		
2.2	C3.2	Maintain R/T equipment			D	M	M	M				2		2	T		2		
	C3.3	Operate transponder										2		2	T		2		

Day VFR Syllabus	Part 61	Lesson	1	2	3	4	5	6	24	25	26	27	28	29	30	Total hours	Number of Assessments at level 2	
		Flight sequence	Effects of Controls	Straight and Level	Medium Turns	Climbing and Stalling		Circuit Introduction	Precautionary Search	Solo Consolidation	Consolidation	Consolidation	Solo Consolidation	Pre Licence	Flight Test			
		Dual hrs (*=simulator)	1	1	1	1	1	1	1		1	1		1	1			11
		Solo hrs									1			1				2
		Units/Elements	Assessment				A	A	A			A	A		A			A
Block 1 Theory Exams					Phase 1						BAK							
9	C4	Manage fuel																
9.1	C4.1	Plan fuel requirements	D	M	M	3	3					2		2	T		2	
9.2	C4.2	Manage fuel system			Da	M	M	M	M	M	M	2	S	2	T		2	
9.3	C4.3	Refuel aeroplane			D, M, 4, 4							3		3	T		0	
11	C5	Manage passengers and cargo																
11.1	C5.1	Brief passengers							D		M	3		3	T		0	
11.2	C5.2	Aid and assist passengers							D		M	3		3	T		0	
	C5.3	Manage cargo							D		M	3		3	T		0	
	C6	Manage flight																
	C6.1	Maintain effective lookout		D	M	M	M	M	M	S	M	2	S	2	T		2	
	C6.2	Maintain situation awareness		D	M	M	M	M	M	S	M	2	S	2	T		2	
	C6.3	Assess situations and make decisions			D	M	M	M	M	S	M	2	S	2	T		2	
	C6.4	Set priorities and manage tasks				D	M	M	M	S	M	M2	S	2	T		1	
	C6.5	Maintain effective communications and interpersonal relationships			D	M	M	M	M		M	2	S	2	T			
	C7	Threat and error management																
	C7.1	Recognise and manage threats		D	M	M	M	3	M	S	M	M		2	T			
	C7.2	Recognise and manage errors		D	M	M	M	3	M	S	M	M		2	T			
	C7.3	Recognise and manage undesired aircraft state		D	M	M	M	3	M	S	M	M	S	2	T		1	
8	A6	Manage abnormal situations																

Day VFR Syllabus	Part 61	Lesson	1	2	3	4	5	6	24	25	26	27	28	29	30	Total hours	Number of Assessments at level 2		
		Flight sequence	Effects of Controls	Straight and Level	Medium Turns	Climbing and Stalling	Circuit Introduction	Precautionary Search	Solo Consolidation	Consolidation	Consolidation	Solo Consolidation	Pre Licence	Flight Test					
		Dual hrs (*=simulator)	1	1	1	1	1	1	1		1	1		1	1			11	
		Solo hrs									1			1				2	
		Units/Elements	Assessment				A	A	A			A	A		A			A	13
	Block 1 Theory Exams			Phase 1								BAK							
8.1	A6.1	Manage engine failure after take-off										2		2	T	2			
8.2	A6.2a	Manage engine failure elsewhere in the circuit (glide app)										2		2	T	2			
	A6.2b	Manage engine failure elsewhere in the circuit (Fire)										2		2	T	2			
8.3	A6.3	Perform forced landing							M	S	M	2	S	2	T	2			
8.4	A6.4	Conduct precautionary search and landing							D		M	2	S	2	T	2			
8.5	A6.5	Manage abnormal situations							M	S	M	2	S	2	T	2			

D = Demonstration
M = Monitor
T = Flight Test (independent assessment)
S = Solo practise
a, b or c = subtask

APPENDIX 5 to CAAP 5.59A-1(0)

LESSON PLAN – Lesson 4 – Climbing and Descending

Pre-flight knowledge

Time	Content	Teaching technique	Student activity	Resources
60 min	<ul style="list-style-type: none"> Long brief on climbing and descending 	Tutorial Including: <ul style="list-style-type: none"> Demonstrations Simulation Questions and answers 	<ul style="list-style-type: none"> Take notes Ask/answer questions Interact 	Briefing room, WB markers, OHP, cockpit diagram, A/C model, company standard briefing notes
45 min	<ul style="list-style-type: none"> Lesson 4 flight brief 	As above	As above	As above
	C1 English communication <ul style="list-style-type: none"> 1.1 Standard aviation terminology (circuit area) 1.2 *Clear and precise English 1.3 *Responds appropriately 1.4 *Reacts to unexpected or non-standard communications 	Monitor during both ground and in-flight training *Assess during both ground and in-flight training		

Flight lesson

Time	Content	Teaching technique	Student activity	Resources
15 min	C2 Pre flight actions. <ul style="list-style-type: none"> 2.1 Administration 2.2 Inspection 2.3 certify for inspection 	Monitor Assess	Perform tasks	Aircraft Headsets Sick bag Area map Checklists
	C4 Manage fuel <ul style="list-style-type: none"> 4.1 Quantity for flight 	Monitor Assess	As above	
	C3 Operate radio <ul style="list-style-type: none"> 3.1 Use R/T equipment (circuit) 3.2 Maintain R/T equipment 	Guide Monitor	As above	
	A1 Control aeroplane on the ground <ul style="list-style-type: none"> 3.1 *Start engine (abnormal) 3.2 Taxi aeroplane 	*Demonstrate Guide Monitor Control	As above	
60 min	A2 Take-off aeroplane <ul style="list-style-type: none"> 4.1 *Pre take-off procedures 4.4 After take-off procedures 	Monitor *Assess	Perform tasks with guidance	
	A1 Control aeroplane in normal flight <ul style="list-style-type: none"> 5.1 +Climb aeroplane 5.2 *Straight and level flight 5.3 +Descend aeroplane 5.4 Turn aeroplane 5.7 +Circuit join 	+Demonstrate Guide Monitor Correct * Assess	Perform tasks with direct guidance	
	C4 Manage fuel <ul style="list-style-type: none"> 4.2 Manage fuel system 	Guide Monitor	Perform tasks with guidance	

Flight lesson (cont'd)

Time	Content	Teaching technique	Student activity	Resources
	C6 Manage flight <ul style="list-style-type: none"> • 6.1 Lookout • 6.2 Situational awareness • 6.3 Assess situations and manage tasks • 6.4 Set priorities and manage 	Demonstrate Monitor	Perform tasks with direct guidance	
15 min	Debriefing <ul style="list-style-type: none"> • Training activities and outcomes achieved against the competency standards • Trainee status and deficiencies if any • Future training and any carryover activities • Record flight details and sign off 	Open discussion Sign off on training record	Open discussion Sign off on training record	Briefing room, WB Markers, OHP, Cockpit diagram,

APPENDIX 7 to CAAP 5.59A-1(0)**CBT Animations – Tutorials****1. Introduction****2. 10 Steps**

This animated tutorial demonstrates the suggested sequence to follow when an organisation is developing its Competency Based Training (CBT) system.

ORGANISATIONAL PLANNING**3. Training Summary**

The training summary provides a clear outline of the proposed training sessions and when assessments are planned to take place. It is beneficial to the student as a map of the training process and particularly valuable as an induction tool for new instructors joining the company. It provides clear information on how the company sets out the lessons for each license, rating, or endorsement.

4. Achievement Record

The achievement record contains all the units and elements of competency, on which the student must be certified as competent before undertaking a flight test for the issue of a license, rating or endorsement.

The achievement record is a good starting point for developing a training plan; this is because it is the fixed point through which all students must pass for the issue of the license, rating or endorsement. Working backwards from the achievement record will provide the necessary flexibility in the training program to accommodate students arriving with some or no previous aviation experience.

5. Planning Matrix

The planning matrix is the key management document that enables the systematic development of a training plan. The planning matrix ensures that all the units and elements of competency from the achievement record are sequenced into the training program.

6. Lesson Plan

The lesson plan provides a clear path as to the content of the lesson, the learning activities planned and how they link to the competency standards.

A lesson plan is required for each lesson that is identified by the planning matrix. The items to be covered in each lesson are taken from the appropriate column in the planning matrix.

STUDENT RECORD SYSTEM**7. Lesson and Assessment Record**

The lesson and assessment record provides clear guidance as to the conduct of the lesson, and acts as a record of the activities that took place.

The lesson and assessment record has many benefits for the student, instructors and the operator as it provides a clear outline of the content in each lesson and how the content relates to the competency standards and the techniques that are used to perform each task. It also specifies the standard that is expected of the student during the different components of the lesson, and last but not least, it acts as a recording tool for recording the student's performance.

8. Achievement Matrix

The achievement matrix is a copy of the planning matrix with the facility to record student performance as they progress throughout the training program.

If used correctly, the achievement matrix captures valuable trend information of the student's progress.

This is beneficial to the student, instructor and the CFI, who are all interested in ensuring that the student is progressing towards achieving competency in all units and elements specified for the licence, rating or endorsement. An important feature of the achievement matrix is that it quickly identifies when a student was measured as competent in a particular unit or element of competency.

9. Achievement Record

The achievement record completes the training program by providing a record of achieved competencies for each unit and element of competency specified for the licence, rating or endorsement.

The achievement record requires certification of competency by both the instructor conducting the assessment and the student verifying that they agree with the assessment, along with the date that the assessment took place. This should match up with the scores on the achievement matrix