



Civil Aviation Advisory Publication

October 2014

This Civil Aviation Advisory Publication (CAAP) provides guidance, interpretation and explanation on complying with the *Civil Aviation Regulations 1988* (CAR) or a Civil Aviation Order (CAO).

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

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

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

CAR 217 Flight Crew- Training and checking organisations

This CAAP will be of interest to:

This Civil Aviation Advisory Publication (CAAP) applies to Air Operator's Certificate (AOC) holders and other organisations who are required to have a training and checking organisation approved under Regulation 217(3) of the *Civil Aviation Regulations 1988* (CAR).

Why this publication was written

This CAAP was written to provide guidance on the:

- Selection, training, and standardisation of flight crew training and checking personnel.
- The maintenance of flight crew training and checking proficiency records.
- The collection, analysis and use of operational and training-related data to improve the focus and effectiveness of training programs.
- Introduce the concept of alternative training and qualification programs or Alternative Training and Qualification Program (ATQP).

Status of this CAAP

This is the first CAAP to be written on this subject. It will be revised and re-issued as an Advisory Circular following the introduction of Part 119 of the *Civil Aviation Safety Regulations 1998* (CASR).

Further information

For further information contact CASA's Flying Standards Branch (Telephone 131 757).

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1. The relevant regulations and other references

- Parts 61, 141 and 142 of CASR 1998
- Parts 91, 119, 121, 133 and 135 (forthcoming) of CASR 1998
- CAR 217
- CAO 82
- CAAP 215-1
- CAAP Safety Management Systems (SMS)-3 Appendix C
- CAAP SMS 4 (0)
- Air Operator's Certificate Manual (AOCM)
- Flight Examiner Handbook (FEH)

2. Acronyms

AOC	Air Operator Certificate
AOCM	Air Operators Certificate Manual
ATQP	Alternative Training and Qualification Program
CAAP	Civil Aviation Advisory Publication
CAO	Civil Aviation Order
CAR 1988	<i>Civil Aviation Regulation 1988</i>
CASA	Civil Aviation Safety Authority
CASR 1998	<i>Civil Aviation Safety Regulations 1998</i>
CTPP	Cyclic Training and Proficiency Program
EASA	European Aviation Safety Agency
EBT	Evidence Based Training
ICAO	International Civil Aviation Organization
KSA	Knowledge, Skills, and Attitudes
MOS	Manual of Standards
SMS	Safety Management Systems

3. Definitions

AIRMANSHIP – The consistent use of good judgement and well developed skills to accomplish flight objectives (International Civil Aviation Organization [ICAO] Definition).

AIR OPERATORS CERTIFICATE MANUAL (AOCM) – Part of CASA's AOC Manuals suite which provides applicants with the information on how to obtain an Air Operator's Certificate.

ALTERNATIVE TRAINING AND QUALIFICATION PROGRAM (ATQP) – A program that allows an operator to provide more effective and flexible recurrent training and checking program for flight crew. An ATQP is a company and type-specific alternative to previous forms of traditional training.

ASSESSMENT – The process of observing, recording, and interpreting individual knowledge and performance against a required standard.

BEHAVIOURAL MARKER – A single non-technical skill or competency within a work environment that contributes to effective or ineffective performance.

BEHAVIOURAL MARKER SYSTEM – An organised set of competency descriptors, collectively representing the domain of non-technical skills required for successful performance in a specified role.

CAR 217 – Describes the requirement for operators to provide training and checking organisations so as to ensure that the operator's operating crew maintain their competency.

CHECK FLIGHT CREW – Check pilots approved under Civil Aviation Order (CAO) 82.0, or check flight engineers approved under CAR 5.41(4)(f).

COMPETENCY –The knowledge, skills and attitudes required for a person to perform a task to a required standard.

COMPETENCY-BASED TRAINING – A structured approach to training and assessment that is directed toward achieving specific outcomes. A person is trained and assessed to meet specified standards that define the knowledge, skills and attitudes required to safely and effectively perform a task.

COMPETENCY STANDARDS – The foundation for competency based training (i.e. knowledge and flight skills include tolerances specified for each syllabus sequence item) required for the privilege of the rating.

CYCLIC TRAINING AND PROFICIENCY PROGRAM (CTPP) – An approved alternative training and qualification program approved under CAR 217. This may be specifically approved to provide relief against individual provisions of Part 61 of CASR. (See also - Alternative Training and Qualification Program)

EVIDENCE BASED TRAINING – Aims to develop core technical and non-technical knowledge, skills and attitudes and align the training content with the actual competencies necessary in the context of modern aviation. ICAO Document 9995—The Manual of Evidence Based Training details this evolving concept and the benefits it offers in training outcomes.

FLIGHT CREW MEMBER – A licensed crew member charged with duties essential to the operation of an aircraft during flight time, and any reference to flight crew has a corresponding meaning. (CASA)

FLIGHT CREW TRAINING AND CHECKING PERSONNEL – Persons involved in the training or checking of flight crew.

FLIGHT EXAMINER – A person holding a Part 61 Examiner Rating as described in regulations 61.1255 to 61.1305. This rating replaces the previous CAR 5.19 delegation.

FLIGHT EXAMINER HANDBOOK (FEH) – Developed by CASA's Flying Standards branch to detail the responsibilities and processes relevant to the duties and conduct of a Flight Examiner.

FLIGHT INSTRUCTOR – A person who is the holder of a Part 61 Flight Instructor Rating as described in regulations 61.1165 to 61.1230.

HUMAN FACTORS – Means the minimisation of human error and its consequences by optimising the relationships within systems between people, activities and equipment. (CASA)

INSTRUCTIONAL SYSTEM DEVELOPMENT – A systematic process of developing a training curriculum, using the principles of competency based training.

INSTRUCTOR – A person who holds a Part 61 Instructor rating as described in regulations 61.1165 to 61.1230.

LINE OPERATIONS SAFETY AUDIT – A program for the management of human error in aviation operations aimed at developing countermeasures to operational errors.

MANUAL OF STANDARDS (MOS) – A document which supports the CASRs by providing detailed technical material such as technical specifications or standards. MOS are legislative instruments and are subject to registration and disallowance under the *Legislative Instruments Act 2003*.

NON-TECHNICAL SKILLS – Means specific human competencies, including critical decision making, team communication, situational awareness and workload management, which may minimise human error in aviation. (CASA)

SIMULATOR INSTRUCTOR – A person who is the holder of a simulator instructor rating as described in regulations 61.1190 to 61.1210.

TECHNICAL SKILLS – The manipulative and knowledge skills a pilot employs while operating an aircraft.

TRAINING AND CHECKING ORGANISATION – The requirements for operators to have an approved training and checking organisation are contained in the current CAR 217. (CAR 217 will be replaced once CASR parts 119, 121, 133 and 135 are introduced. The requirements for training and checking organisations will pass from the older CARs and into the new CASRs).

4. Introduction

4.1 International Civil Aviation Organization (ICAO) has highlighted the need for a sound flight crew training and checking system, with consistent assessment and grading, and well maintained records. ICAO Annex 6 (Part I, Chapter 9, Paragraph 9.3) requires operators to have and maintain appropriate standards and organisational capabilities.

4.2 The AOC holder and CASA need to be assured that flight crew receive the proper training to ensure that they are proficient at their duties. The training should be over a range of knowledge, skills and attitudes (KSAs) to meet normal operational challenges as well as any unanticipated challenges to the safety of flight.

4.3 In this CAAP, CASA provides guidance to AOC holders relating to the:

- qualifications, selection and education of flight crew training and checking personnel
- ongoing development and standardisation of flight crew training and check personnel
- assessment and grading of flight crew proficiency
- data gathering and analysis by the AOC holder and CASA for the oversight and continuous improvement processes of training and checking
- effective record keeping of flight crew training and checking activities to preserve an operational standards history
- content of forms for use as flight crew training and checking records.

4.4 Whilst this CAAP refers to Flight Crew-Training and Checking organisations, some of the principles may offer guidance in relation to training and checking activities concerning other operating crew members.

5. Tests of Competency

5.1 CAR 217 (2) requires that all operating flight crew who are part of a training and checking organisation undergo 'two checks of a nature to test the competency of each member of the operator's operating crew'. These two checks must be completed every 12 months, but not at intervals of less than 4 months.

5.2 A test of competency for flight crew must be carried out to ensure that they can sufficiently carry out normal, non-normal and emergency procedures while operating the aircraft during a flight.

5.3 These tests can be used to satisfy the proficiency check requirements of Part 61 (including the instrument proficiency check).

5.4 A flight check on an air route while carrying passengers is required under the Civil Aviation Orders (CAOs); however, this check cannot be used to test emergency and non-normal procedures, and so cannot alone fulfil the role of a test to check the competency of flight crew under CAR 217(2).

5.5 For RPT operations, the minimum flight checks that should be used to fulfil the requirement to test the competency of flight crew each 12 calendar months is:

- an instrument proficiency check (aircraft or simulator)
- a flight proficiency test (aircraft or simulator); and
- a line check on an air route conducted in an aircraft.

5.6 A flight engineer proficiency test may be conducted by observing the flight engineer supporting the pilots during an instrument rating renewal test or a flight proficiency test, with any additional flight engineer specific normal, non-normal or emergency procedures.

5.7 The Part 61 Manual of Standards (MOS) contains the competency standards for all pilot qualifications.

6. Evidence Based Training

6.1 In addition to successfully and reliably administering the required training and checking functions, training and checking organisations increasingly need to develop a focus on gathering and using training and operational data (i.e. those mentioned in 6.4 below). This is the concept of evidence-based training (EBT) as detailed in ICAO's Document 9995—Manual of Evidence-Based Training.

6.2 The EBT concept aims to identify, develop and evaluate the competencies required to operate safely, effectively and efficiently in a commercial air transport environment while addressing the most relevant threats according to evidence collected in accidents, incidents, flight operations and training.

6.3 EBT in conjunction with an operator's safety management system (SMS) is a critical foundation for the development of ATQPs.

6.4 An array of data sources can provide a detailed insight into the threats, errors and risks encountered in flight operations and their relation to unwanted consequences. Such data sources will typically be a required focus of the safety assurance component of an operator's SMS and may include:

- brain-storming using experienced operational personnel
- development of risk scenarios
- trend analysis
- feedback from training
- flight data analysis programs (FDAP)
- safety surveys and operational oversight safety audits
- monitoring of normal operations
- State investigations of accidents and serious incidents; and
- information exchange systems (similar operators, regulators, etc.).

6.5 The integration of this data (and associated analysis) into the training and checking system will significantly enhance the focus and effectiveness of the entire training and checking program and will form the foundations of SMS continuous improvement activity.

6.6 Ongoing data collection can be developed into a responsive program that can adapt to an operator's changing requirements such as new equipment, new technology or a differing route structure.

6.7 The identification of shortcomings in upset prevention and recovery training (known more commonly as UPRT) is an example where evidence based training has provided the foundation for a redirection of the focus of initial recurrent training programs.

7. Alternative training and qualification programs

7.1 The European Aviation Safety Agency (EASA) introduced regulations and published guidance material for alternative training programs in 2006, using the acronym ATQP. CASA intends to encourage operators to develop ATQP programs utilising EBT as the core element (in place of prescriptive regulatory approaches to training and checking).

7.2 Cyclic programs are a type of ATQP currently approved by CASA under CAR Part 217. These are typically not as advanced as an ATQP/EBT program but may be specifically approved to provide relief against individual provisions of Part 61.

7.3 CASA may approve company and type specific alternatives to previous forms of traditional training. These alternative programs typically build on high levels of capability in collecting, analysing and utilising many forms of training and operational data.

7.4 Much of this data collection capability will be developed within the operator's SMS activities allowing operators to provide more flexible, effective and operator-specific recurrent training and checking programs for its crews.

7.5 This targeted training can enhance performance while reducing costs in the long term by providing relief from certain prescriptive regulations.

8. Flight crew training and checking personnel

8.1 Selection, training and roles

8.1.1 This section gives guidance on the selection and training of simulator instructors and other training and checking personnel. These positions will give accurate and standardised assessments of the competence of the AOC holder's flight crew in such a way that it will help each flight crew member to continue their professional development and keep the AOC holder aware of the safety health of their flight operations group.

8.1.2 Each AOC holder must provide a sufficient number of suitably qualified and experienced training and checking personnel to meet the training and checking needs of the AOC holder's flight operations. This number is reviewed and approved by CASA.

8.1.3 Planning of the number of personnel should make allowance for:

- leave
- sick leave
- promotion

- the introduction of new aircraft types.

8.1.4 Although check flight crew are employed by the AOC holder, the role is the primary means by which CASA can be confident about the safety of flight operations in that organisation.

8.1.5 When determining the structure of the flight crew training and checking group, the AOC holder should complete a full job task analysis for each position.

8.1.6 The AOC holder should carefully consider the skills, tasks, and expectations considered necessary for all training and checking personnel in that operation. The competencies identified by the task analysis should be established in position descriptions. These descriptions should also set out the experience and qualifications considered necessary for each position and be used to select and promote flight crew training and checking personnel.

8.2 KSAs

8.2.1 Flight crew training and check personnel need suitable experience of the aircraft and the type of operation in which the assessment role will be performed. This includes the appropriate aircraft endorsement, instrument rating and instrument endorsements.

8.2.2 Suitable flight crew training and check personnel should have the following high-level skills and knowledge:

- Technical skill for the aircraft and the operating environment so that they are able to maintain sufficient margins of safety when training or assessing in an aircraft;
 - or in the case of simulator instructors, to ensure that the instructor's ability to conduct the training/checking session and operate the Instructor's Operating Station (I.O.S) whilst observing training outcomes, is not degraded.
- Ability to make sound competency assessments and to record this information in a fair and impartial manner.
- Non-technical skills which reflect company policies and procedures. The check flight crew member should be an advocate by example for the non-technical skills supported by the training and checking manual and be able to those skills in flight crew.
- An unbiased attitude towards assessment standards and commitment to the AOC holder's standard procedures, and standards.
- The ability to separate training tasks from checking tasks and to encourage the development of technical and non-technical skills among the operator's flight crew and in the specific flight operations environment.
- The ability to apply the skills of effective briefing and de-briefing to the flight crew training and checking role, including inducting and imbuing new flight crew in the company culture to meet the organisation's flight operation's needs.
- Personal consistency in the flight crew's interaction with other people in the training and checking environment (including the ability to assess the emotional well-being of the flight crew being assessed).
- Capacity to grow with the demands of the organisation, changing technology, and developing knowledge in technical and non-technical assessment and grading practices for that operation.

8.2.3 All internal procedures require certain administrative processes and procedures for the effective and efficient operation of a training and checking organisation. Suitable personnel must be able and willing to ensure that the administrative processes are followed.

8.2.4 Check flight crew may be selected from the ranks of flight crew trainers and then make progress through the various checking roles. This allows an AOC holder to assess a person's abilities before they are selected for training as a check flight crew member.

8.3 Training

8.3.1 The AOC holders will typically be responsible for the training of their training and checking personnel. However, CASA (or the holder of an approval) is responsible for the training and assessment of Part 61 flight examiners (Refer to regulation 61.1290).

8.3.2 A flight examiner must have completed a course of training for the rating that:

- is conducted by CASA or the holder of an approval under regulation 61.040 to conduct the course
- includes the content mentioned in the Part 61 Manual of Standards for the course
- passed the flight test mentioned in the Part 61 Manual of Standards for the flight examiner rating; and
- successfully completed an interview conducted by CASA.

8.3.3 The CASA entry course will establish CASA expectations for examiners in their roles ensuring the competency of flight crew. The course will explain the proper use of an examiner's privileges and responsibilities while working within the CAR 217 structure of their employer. It is also intended to help establish standard practices across all AOC holders with CAR 217 approvals.

8.3.4 In addition to the above, a flight examiner may only conduct a flight test for a flight crew licence, rating or endorsement if the examiner has successfully completed during the following requirements the previous 24 months:

- a professional development program conducted by CASA; or
- an approved course of professional development conducted by the holder of an approval under regulation 61.040 to conduct the course.

8.3.5 Flight crew training and check personnel should be taught the theory and practice of training and assessment as established in the AOC holder's approved training and checking manual.

8.3.6 Each AOC holder's training program should include, at a minimum:

- the AOC holder's recognition of a flight crew's previous training qualifications
- instructional system design
- competency based training
- evidence-based training, data feedback loops (if any)
- Principles and Methods of Instruction (PMI)—Refer to Appendix D of CAAP 5.14-2 Flight Instructor Training (Aeroplane) which includes:
 - lesson preparation
 - presentation
 - discussion
 - questioning

- assessment
- adult learning
- briefing and debriefing
- regulatory knowledge and application
 - knowledge of relevant legislation and advisory and operational publications
 - relationship of a check flight crew member to various CASA requirements
- understanding and applying the information contained in the training and checking manual
 - flight operations structure
 - management of flight operations
 - understanding the competencies making up technical skills
 - understanding human factors (including threat and error management [TEM], crew resource management and other non-technical skills)
 - conducting training and check flights
 - assessing and grading of technical and non-technical skills
 - standardisation between check flight crew
- company training and checking administration
 - company forms
 - company administrative processes
 - company assessment and grading system
 - company pass/fail criteria
 - company repeat policy for exercises or sessions
 - action in the case of a flight crew member being unable to demonstrate competency.

8.3.7 The AOC holder's practical training and checking program must be approved by CASA under CAR 217(3) and tailored to the specific needs of the roles for which the flight crew member is being trained.

8.3.8 Practical training on the aircraft and/or simulator should include:

- observation of assessments being done by an approved, check flight crew member
- observation of training being done by a simulator instructor
- management of the simulator
- exercises in the simulator
- management of practice emergency and non-normal procedures
- right-hand seat training if required
- standardisation training by the flight operations group
- checks conducted by the trainee and observed by another check flight crew member
- a final approval, with the AOC holder's CASA approved check flight crew member, or a CASA Flying Operations Inspector (FOI).

8.3.9 Applications for approvals and applicable ratings should be submitted to CASA by following the procedures and using the forms set out in the Volume 2 of the AOCM.

8.3.10 Under CAR 217(4), the crew members fulfilling the positions listed in the AOC holders training and checking organisation do not need to be flight instructors in order to fulfil the roles assigned to them; however, approvals are given by CASA on the basis that they have completed the operator's approved internal instruction training before an application is lodged for the delegation or approval.

8.3.11 Each organisation needs to determine how many flight crew training and checking personnel it requires grouped in a manner that best meets the needs of each AOC holder. Some AOC holders assign specific names or titles to these groupings. While the names may vary, it is essential that each position, and the roles and responsibilities assigned to each position, are clearly set out in a position description, and that description included in the training and checking manual required under CAR 217 (3).

8.3.12 Flight crew training and checking personnel are approved to work for that AOC holder, as well as any organisation for whom that AOC holder may perform training and checking functions. They may not function as a check flight crew member for any other organisation or in any other capacity, unless they are specifically approved.

8.3.13 Smaller CAR 217 organisations may have a small number of check flight crew who have the delegations and authority to do all of the functions. In this case, the check flight crew member may commence at a minimum level (for example, line checks only), and gradually add skills and approvals over time to be able to complete the full task (for example, examiner rating for Command Instrument Rating [CIR] or proficiency checks).

8.3.14 Larger CAR 217 organisations may have check flight crew who do some of the functions only, the whole flight crew training and checking group combining to perform all the functions.

8.3.15 In larger organisations a small number of check flight crew may be approved to train, test and recommend the flight crew check personnel within that organisation on behalf of CASA.

8.3.16 The design and administration of this aspect of the training and checking organisation has to be approved by CASA, and will depend on the needs of the organisation, and how effectively and efficiently the role can be administered. Once these roles within the CAR 217 organisation are approved by CASA, they must be adhered to, or seek change through CASA for re-approval.

8.4 Functions of check personnel

8.4.1 Flight crew check personnel should follow the training and checking practices set out in the AOC holder's approved training and checking manual. It is essential that the AOC holder develops and maintains a set of standard operating procedures for use by flight crew check personnel and reinforces the use of those procedures through the training and oversight of checking personnel.

8.4.2 The standard required to be observed by the flight crew check personnel is the standard described in the AOC holder's operations manual.

8.4.3 The proper maintenance of pilot training records is essential to the sound management of a training and checking system. Flight crew check personnel should be trained and monitored in the correct method of reporting and recording the results of training and checking activity.

8.4.4 Each AOC holder should have a regular program of internal audits for their flight crew check personnel to ensure that their assessment standard remains consistent. This internal program should involve scheduled observation of the flight crew check personnel performing their duties.

8.4.5 Renewal of flight crew check qualifications should be in accordance with the requirements of their instrument of approval or delegation.

8.4.6 Renewal of a flight crew check person's approval or delegation by the AOC holder's approved flight operations managers, or by CASA, should be planned well in advance of the expiry of the instrument of approval or delegation.

8.4.7 Flight crew check personnel should be rostered adequate hours for non-training line flying, across a reasonable spread of the duties for which they are approved. This is to ensure that skills in all areas of their approval remain well exercised so that an even standard will be maintained across all approvals.

8.4.8 Particular attention should be applied to the practice and integration of non-technical skills into the flight crew personnel roles.

8.4.9 Simulator instructors should have regular access to cockpit experience for the aircraft they train on, in the form of supernumerary flights.

8.5 Standardisation

8.5.1 Modern systems gather and analyse data from training and checking activities to produce a picture of the operational safety health of individual flight crew and the flight operations group as a whole. The effectiveness of data gathering depends on the accuracy of the information fed into the database. This is controlled by the accuracy and consistency of the assessors and the validity of the events used for assessment.

8.5.2 The purpose of a standardisation program is to improve consistency in the assessments made by all flight crew training and check personnel. This will give the AOC holder a reliable picture of the safety standard of their flight crew and provide evidence to show those areas where more training is needed. In the long term, it is anticipated that this will lead to more consistent standards across the industry.

8.5.3 Without this standardisation the subjective nature of each individual check flight crew's judgment makes it unlikely that two check flight crew will assess the same crew performing the same task/activity in a like manner.

8.5.4 Check pilots holding the flight examiner rating must attend a CASA Check Pilot Entry Course, and then attend the CASA Professional Development Program (PDP) for flight examiners at regular intervals. This CASA program is designed to commence the standardisation process at the earliest stage of check pilots' training, and develop it throughout their careers.

8.5.5 The principles of flight crew check personnel standardisation should be used at all levels of assessment, but to a degree that relates to the size and scope of the flight operation.

8.5.6 Standardisation training may be achieved by using presentations of scripted events from the AOC holder's assessment program. These presentations will use the most appropriate form of media and should contain variations from standard procedures and specific observed behaviours, both positive and negative.

- The presentations are assessed by a group of very experienced check flight crew. The group would discuss and agree on the grades that are applied to the various events shown in the presentations. The result of that assessment is used to establish a base standard for training and standardisation.
- These presentations would then be shown to trainee check flight crew, who will use the company grading sheets to assess and grade each event. Analysis of the results will provide a measure of the accuracy of the assessments made by the trainee flight crew check personnel.

8.5.7 Reliability is made up of two other measures, the first is sensitivity (see further reading section and Training for Inter-Rater Reliability—Baselines and Benchmarks).

- Sensitivity is a measure of how the assessor's mark follows the changes in performance of the various events. It indicates that the assessor's grading of each event will follow the standard for that event. In other words, while the assessor may not give the same mark as the standard, the results given for each event will vary from the standard by a similar amount.
- This may be quantified and can be called 'Rater-Referent Reliability' (RRR) and is a measure of how closely an assessor agrees with the standard marks (the 'gold standard') a group of experts have established for the scripted events.
- 'Inter-Rater Reliability' (IRR) is a sensitivity measure of how closely a group of raters agree with each other. This does not refer to a standard grading, but measures the results of the assessors' gradings against one another.

8.5.8 The other reliability measure is accuracy with which the trainee matches the mark allocated for the standard assessments. It is calculated by averaging the absolute deviations between the assessor's grade, and the standard grade, for each event. The smaller the deviation, the more accurate the assessments.

8.5.9 Accuracy also includes congruency, which is a measure of how consistent the assessor's distribution of grades is with the distribution of the standard gradings established from the 'gold standard' videos by the expert group.

8.5.10 While reliability can show how reliable the assessments are, it should also be determined that the process is measuring what is intended to be measured, and that the data gathered from this is suitable for the purpose. This determines the validity, and therefore the quality, of the data.

8.5.11 The results of this analysis are given to the individual check flight crew members. Through self-review and guidance from flight operations management, standardisation can be improved and maintained over a period of time.

8.5.12 In addition to this, the data gathered from actual assessments of line operations crew can be used to assess the consistency of marking across the flight crew, and individual check flight crew members are compared to their fellow crew members to measure their assessing consistency in comparison to the group.

8.5.13 The method of gathering the data is usually a form (either hard copy, or direct entry to a computer system) that is completed by the assessor entering a grade for various events. The method used to complete the grading for each event should be set out for the assessor in a series of 'word pictures' that describe the standard, or the behaviours to be observed during the assessment. These word pictures should form part of the AOC holder's assessment and grading system.

8.5.14 The flight operations management team should hold regular meetings of flight crew check personnel and use flight operations communications to provide guidance to gather and assess feedback relating to flight crew check personnel and their use of the system.

8.5.15 Refer to CAAP 215-1 for additional information on the development of an operations manual (including a training and checking manual).

9. Flight crew training and proficiency records

9.1 The collection, storage, analysis, use and security of training data and records is a critical part of the safe, efficient and robust operation of a successful training and checking organisation.

9.2 The increasing use of electronic data collection and management systems does not lessen the need for high quality records management. This will be especially true during periods where hard copy and electronic systems are running in parallel and where historic hard copy data is being transferred into electronic format.

9.3 It is very difficult for an organisation to adequately fulfil both the letter and spirit of the requirements of their SMS and to embrace EBT if its data and records management processes are flawed.

9.4 Shortcomings can occur in many areas, for example:

- records that do not contain all the information required by regulation
- incomplete or poorly completed training forms
- incomplete training histories
- an inconsistent and poorly managed approach to the maintenance of pilot training records
- undocumented reasons for the cessation of employment of pilots, sometimes after a training or checking issue
- out of date forms, inadequate stock, use of 'personal stocks' or non-standard company forms held by individual check pilots.

9.5 Deficiencies such as these make it difficult to understand the training history of many pilots. It is also hard to follow the processes that may have taken place to remedy training difficulties throughout a pilot's career and to see what has been done when a pilot experiences continual difficulties maintaining the standard required by that AOC holder's operations manuals.

9.6 Furthermore, if a pilot requires ongoing training support to maintain the standard required by the operations manual, it may not be possible for the company or CASA to monitor and follow that support.

9.7 Appendices to the CAOs provide guidance to setting up the files required under CAR 217. These are set-out in:

- clause 2.4 of Appendix 1 to CAO 82.1
- clause 5 of Appendix 2 to CAO 82.3
- clause 5 of Appendix 2 to CAO 82.5

9.8 The appendices also include the required employment history to be kept on file, so as to help establish a standard practice throughout the industry.

9.9 The AOC holder should assign the responsibility for maintaining flight crew files and records to a position or person, with back-up support for leave, promotion and unplanned resignation. This information should be included in the operations manual.

9.10 The designated person(s) should have adequate resources and management support to design and document an administrative process to:

- control the collection of all flight crew related records

- verify that all records are collected and checked to be correct and complete
- return incorrect and incomplete records and forms to instructors, flight crew training and check personnel and the chief pilot's delegate for correction
- ensure that all completed training and proficiency forms are available for review by flight operations management
- control the filing / scanning of records (either scanned or database) into each file
- provide regular reports of flight crew recency, currency etc.
- ensure that correct and up to date information is available for crew planners and schedulers
- use data from these proficiency records to measure the ongoing health of the flight operations training and proficiency program
- conduct regular audits of aircrew files and records

9.10.1 The operations manuals or training and checking manuals should include instructions to all flight crew training and checking personnel on the correct method of:

- completing the forms
- handling and submission of forms
- replacing the stock of redundant forms when new ones are issued
- checking the currency and validity of forms they are using (and not to maintain a personal store of forms).

9.11 Each flight crew member should have a file which gathers the information together under the sub-sections of:

- personal records
- administrative records
- training and proficiency records.

9.12 Personal Records

9.12.1 The personal records section should at least hold the following information:

- personal details:
 - name
 - address
 - phone and email contacts
 - next of kin and their contact details
 - passport details
 - ARN
 - ASIC details
 - company ID card details
- application for position in the organisation
- copies of pre-employment references
- selection process, interview, tests and results
- a summary of qualifications and experience when commencing employment
- induction program with completed induction checklist
- correspondence between the AOC holder and the individual

- commendations
- disciplinary actions
- reviews of personal performance
- promotions
- resignation / discharge
- post-employment review.

9.13 Administrative Records

9.13.1 The administrative records section should, at a minimum, hold the following information:

- flight crew licence and updates (as required)
- medical renewals with copies of up to date certificates
- aircraft endorsements
- instrument rating, endorsements and renewals
- paragraph 12.4 of CAO 20.11 certificates to include dates for:
 - ditching procedure in water (wet)
 - land emergency evacuation procedure
- dangerous goods training certificates
- training flight crew approval notices
- check flight crew approval and delegation instruments
- low visibility competency certificates, including:
 - Special Authorisation (SA) Category I and II
 - Category II and III
 - Head-up Display (HUD)
 - autoland approvals and currency
- route endorsements and recency
- Land and Hold Short Operations (LAHSO) recency
- Precision Runway Monitoring (PRM) recency
- other competency, currency or recency information relating to particular operational approvals and authorisations (such as specific approach approvals and Cruise Relief Co-Pilot)

9.14 Training and Proficiency Records

9.14.1 The training and proficiency records section should contain the following information. This section should also include recommendations for action by the flight operations training group following a failure to maintain the standard required by the operations manual. Evidence of due process following failure to maintain a standard should also be included in the file, including:

- all ground school, simulator, flight trainer and aircraft endorsement training and checks
- induction flight training devices, simulators and aircraft intake programs
- line training, progress checks and cleared to line checks
- proficiency checks and instrument rating renewals in flight training devices, simulators and aircraft
- cyclic training and proficiency program (CTTP) records
- line or route checks in aircraft

- recurrent training records
- route endorsement records
- flight crew training and check personnel training and competency tests
- standards reviews
- remedial training
- further endorsement training and checking
- cruise relief training
- upgrade to command.

9.14.2 All flight crew training and proficiency records should be stored in chronological order so that it is easy to review the completeness of each record and file, and to verify that the training, and any remedial training, has been completed successfully.

9.14.3 All training and checking records for flight crew should be retained for 7 years after the flight crew member leaves the AOC holder's organisation.

9.15 Management systems should also be established in the operations manual to control the design, amendment, approval and distribution of training and checking forms (see sample forms in Appendix A). Responsibility and authority for the management of each form or group of forms should be documented in the operations manual. Each form should have an identification assigned to it and a date when it became active.

9.16 Header section should capture:

- date
- name or description of training or check
- flight crew name and ARN
- flight crew training or check personnel name and ARN
- aircraft registration / simulator designation
- flight time for exercise
 - total flight time
 - day and night flight time
 - instrument flight time.

9.17 The body of form should provide space to include:

- details of individual exercises, tests or events
- number of times each exercise, test or event is attempted
- result for each successful exercise, test or event
- comments on each exercise, test or event
- grading and reason codes for each exercise, test or event.

9.18 The footer section should capture:

- overall result of training or proficiency test
- remarks or comments
- recommendation for next training or check training activity
- signature space for training or check personnel
- signature space for flight crew member to acknowledge sighting of a report

- name and signature of chief pilot or designate who reviews the result
- check box to show that result and form has been reviewed by the chief pilot or designate
- comments by chief pilot or designate
- any planned remedial training
- certification that data has been entered, form scanned and/or filed.

9.19 Typical types of forms to be provided include:

- commencing employment audit forms
- ground schools (various)
- aircraft endorsement or conversion form
- cadet training forms
- multi crew co-ordination pilot training and familiarisation
- line supernumerary experience forms
- line training form
- flight check on a route (clearance to line check)
- flight check on a route (recurrent line check)
- simulator flight proficiency test
- aircraft flight proficiency test
- simulator CTP forms (various)
- right hand seat training / proficiency forms
- instrument rating issue or renewal forms
- cruise relief training forms
- command training
- low visibility training forms
- training forms for various approvals
- dangerous goods training forms
- CAO 20.11 assessment forms
- recurrent training forms
- command assessment
- flight crew training personnel training forms
- flight crew check personnel training forms
- flight crew check personnel renewal forms
- leaving employment audit form
- other forms as required (for example as relief PIC, and relief co-pilot)

Executive Manager
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Appendix A: Example of Forms

Read in conjunction with CAAP SMS-3, Appendix C.

A.1 Simulator Assessment Form

Captain / First Officer Name: _____	ARN: _____	Staff Number: _____
Check Pilot: _____	ARN: _____	A/C Type: _____
Other Crew: _____	ARN: _____	Date: _____

Cyclic No. _____	RHS <input type="checkbox"/>	Revalidation <input type="checkbox"/>	Command Progress Check <input type="checkbox"/>	
Simulator No: _____	Other Check _____			

	N/A	RPT	Grading					Reason Code
			1	2	3	4	5	
1. Pre-Flight Planning and Preparation								
2. Take off: Crosswind: kts. Visibility m								
3. Rejected Take off								
4. Engine Failure after V ₁								
5. Initial climb: Type								
6. Descent Planning								
7. Visual Approach : Type								
8. Instrument Approach (1): Type								
9. Instrument Approach (2): Type:								
10. Go-Around All engines <input type="checkbox"/> OEI <input type="checkbox"/>								
11. Approach and Landing: All engines <input type="checkbox"/> OEI <input type="checkbox"/> Visibility m								
12. Low Visibility Operations: Type:								
13. Support Duties (PNF)								
14. Systems Knowledge								
15. Standard Operating Procedures								
16. Minimum Equipment List								
17. Emergency / Non Normal Procedures								
18. Command (Captain)								
19. Command Potential (First Officer)								
								Element
20. Communication and Teamwork								
21. Leadership and Management								
22. Situation Awareness								
23. Decision Making								

A.2 Line Operations Assessment Form

Captain / First Officer Name: _____	ARN: _____	Staff Number: _____
Check Pilot: _____	ARN: _____	A/C Type: _____
Other Crew: _____	ARN: _____	Date: _____

Annual Line Check: <input type="checkbox"/>	Clearance to Line Check <input type="checkbox"/>	
Aircraft Reg: _____	Other Check _____	

Route:	N/A	RPT	Grading					Reason Code
			1	2	3	4	5	
1. Pre-Flight Planning								
2. Ground handling (Pre / Post – Flight / Taxying)								
3. Takeoff : Crosswind: kts / Visibility: m								
4. Initial climb. Type:								
5. Cruise								
6. Descent Planning								
7. Visual Approach : Type								
8. Circling Approach								
9. Instrument Approach (1): Type								
10. Instrument Approach (2): Type								
11. Landings: Crosswind: kts / Visibility								
12. Support Duties (PNF)								
13. Systems Knowledge								
14. Standard Operating Procedures								
15. Minimum Equipment List								
16. Emergency / Non Normal Procedures								
17. Command (Captain)								
18. Command Potential (First Officer)								

	N/A	RPT	Grading					Reason Code
Element			1	2	3	4	5	
19. Communication and Teamwork								
20. Leadership and Management								
21. Situation Awareness								
22. Decision Making								

Appendix B: Further Reading

The Importance of Quality Data in Evaluating Aircrew Performance. Peder J. Johnson & Timothy E Goldsmith

Training for Inter-Rater Reliability: Baselines and Benchmarks. Donna M Williams, Robert W Holt, Deborah A Boehm-Davis

ICAO Document 9995: Manual of Evidence Based Training

ICAO Document 9841: Manual on the Approval of Training Organisations

ICAO Document 9868: Training

ICAO Document 10011 Manual on Aeroplane Upset Prevention and Recovery Training (in draft)

IATA Evidence-based Training Implementation Guide, July 2013

UK CAA Standards Document 80_Version 1, ATQP, Industry Guidance

EASA Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Part ORO

Federal Aviation Administration (FAA) FAR 121-366. Qualification, Service, and Use of Crewmembers and Aircraft Dispatchers