



TTCAA Advisory Circular

Subject: DEVELOPING ATO TRAINING AND PROCEDURES MANUALS
TTCAA Advisory Circular TAC-037
Date: 06/04/05

PURPOSE

1. The purpose of this TTCAA Advisory Circular (TAC) is to give guidance on the development of a Training and Procedures Manual for an ATO as required by TTCAR No.9.

GENERAL

2. (1) The Training and Procedures Manual (TPM) describes the way an Approved Training Organization (ATO) conducts its activities. It is therefore an essential document for the operation of an ATO. The provision of a TPM for the use and guidance of personnel concerned is required by Annex 1 To The Convention On International Civil Aviation (Annex 1) and by TTCAR No.9:5(2)(b)(i) and No.9:Schedule 1.

(2) The TPM provides ATO staff with clear guidance on the policy of the ATO as well as the procedures and processes which are used by management and line personnel to provide training. It is also an essential document for the licensing inspectors and other TTCAA staff involved in Licensing functions. During the approval process, it allows the TTCAA inspectors an opportunity to evaluate the way a prospective ATO plans to comply with existing regulatory requirements and accepted practices. Once the training organization is functioning as an ATO, a large part of the surveillance activities of the TTCAA will be to ensure that it is functioning as specified in the TPM.

GENERAL CONSIDERATIONS

3. (1) The TPM may be published in separate volumes or it may be combined into one manual. When published as separate manuals, it is important that the Training Manual and the Procedures Manual are consistent with each other, and also consistent with TTCAR No.1 and No.9, other relevant TTCARs, manufacturer requirements and the principles of human factors. It is also necessary to ensure consistency across all departments within the organization as well as consistency in use of the manual (s).

(2) An integrated approach, recognizing operational documents as a complete system, is the key to success. This concept was introduced in ICAO Annex 6 and TTCAR No.3:5 in reference to a flight safety document system for which guidelines are presented in TAC-042.

(3) The following guidelines are intended for personnel involved in the design, development, maintenance or review of a TPM and are guided by the general requirements of a flight safety document system as expressed in TAC-042.

Contents

4. The subject content of the TPM is spelled out in general terms in TTCAR No.9:Schedule 1. More specifically, a TPM should contain the following chapters under the Training Section and the Procedures Section as shown:

- (a) The Training Manual section of the TPM should state the standards, objectives and training goals of each phase of training for which the students are required to comply under the following Chapter headings:
 - (i) Chapter 1 – The Training Plan;
 - (ii) Chapter 2 – Briefing and Air Exercises;
 - (iii) Chapter 3 – Synthetic Flight Training;
 - (iv) Chapter 4 – Theoretical Knowledge Instructions.
- (b) The Procedures Manual of the TPM should state the essential safety related operational information designed for everyday use by flight instructors and students under the following Chapter headings:
 - (i) Chapter 1 – General;
 - (ii) Chapter 2 – Technical;
 - (iii) Chapter 3 – Route;
 - (iv) Chapter 4 – Staff Training.

Organizing The Manual

5. A TPM should be organized according to criteria relating to information, importance and use. The information should be structured and sequenced so that users can access it easily. These principles will help determine whether to issue the manual as a single document or as separate manuals. When the TPM is organized as separate manuals there should be a master index to help locate information included in each of the separate manuals. The master index should be placed at the front of each manual.

Design

6. (1) The structure of the manual should be easy to understand, appropriate for the information documented and clearly identified through headings and other formatting devices. The document structure should be identified at its beginning by explaining organizing elements such as headings, the numbering system, main parts of the document and other sources of coding or grouping.

(2) Precise language should be used wherever possible. Significant terms for common items and actions should be maintained throughout the manual. Terms must be clear and easily understood.

(3) The manual should be internally consistent with the training organization's philosophy, policies, procedures and processes.

(4) Writing style, terminology, formatting, and use of graphics and symbols should be consistent throughout the document. This includes the location of specific types of information and consistent use of units of measurement and codes.

(5) The manual should include a glossary of terms, acronyms, abbreviations and associated definitions. The glossary should be updated on a regular basis to ensure access to the most recent terminology.

(6) The revision process should be considered when designing the manual for ease of amendment and distribution.

(7) The TPM should comply with the requirements of the ATO's Quality Assurance System.

Validation

7. (1) The TPM should be reviewed and tested under realistic conditions before its use. The validation process should include using the critical aspects of the information contained in the manual to verify its effectiveness. Routine interaction among groups within the organization should be included in the validation process.

(2) A final review of the manual should ensure that all required topics have been addressed with an appropriate level of detail for users. The final review should also confirm compliance with safety regulations, manufacturers' recommendations and the organization's philosophy, policies, procedures and processes.

Distribution

8. The ATO should monitor use of the TPM after its release. This will ensure appropriate and realistic use of the manual, based on the operational environment, in a way that is operationally relevant and beneficial to the personnel for whom it is intended. This monitoring should include a formal feedback system to obtain input from principal users of the manual and other persons who would be affected by a new or revised policy, procedure or processes.

Amendments

9. (1) The ATO should develop an effective information gathering, review, distribution and revision control system to process information obtained from all sources relevant to the organization. Sources include, but are not limited to the CAA, civil aviation regulations, manufactures and equipment vendors.

Note - Manufacturers provide information for the operation of specific aircraft that emphasize the aircraft systems and procedures under conditions that may not fully match the requirements of the training organization. Training organizations should ensure that such information meets their specific needs and those specified by the CAA.

(2) The ATO should develop an information review, distribution and revision control system to process information resulting from changes that originate within the organization. This includes changes -

- (a) In the organization's policies, procedures and practices;
- (b) In response to operating experience;
- (c) To the scope of training provided;
- (d) To the content of training programmes;
- (e) Resulting from the installation of new equipment;
- (f) To an approval document or operating certificate;
- (g) For the purpose of maintaining standardization.

(3) The TPM should be reviewed in association with other operational documents that form the ATO's flight safety documents system:

- (a) On a regular basis (at least once a year);
- (b) After major events such as mergers, acquisitions, rapid growth, downsizing, etc.;
- (c) After technology changes, e.g.: the introduction of new equipment; and
- (d) After changes in safety regulations.

(4) Permanent changes to the TPM should be communicated through a formal amendment process. The manual should be amended or revised as necessary to ensure the information contained is kept up-to-date.

(5) Distribution of amendments and revisions should include a tracking system. The tracking system should include some form of log combined with a procedure to ensure all amendments are furnished promptly to all organization or persons to whom the manual has been issued.

COMMENTS INVITED

10. Comments should be invited, giving the title and address of the recipient of these comments and a statement that comments would be reviewed for consideration in the development of revisions to the manual.

Ramesh Lutchmedial
Director General of Civil Aviation

ATTACHMENT: Example Training And Procedures Manual (Construction)

EXAMPLE TRAINING AND PROCEDURES MANUAL (CONSTRUCTION)

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EXAMPLE CONSTRUCTION OF A TRAINING AND PROCEDURES MANUAL

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SECTION I – THE TRAINING MANUAL

CONTENT OF THE TRAINING MANUAL

CHAPTER 1

THE TRAINING PLAN

1. This chapter shall include the subject titles shown, containing information as described in the content column.

Subject Title	Content
1. The Aim (Objective) Of The Course	<p>A statement of what the student is expected to do as a result of the training, and the level of performance to be obtained.</p> <p><i>Example:</i> <i>The aim of the Private Pilot Licence (PPL) – Aeroplane (A) course is to provide theoretical and practical training to enable students to gain a Trinidad and Tobago CAA PPL licence with ASEL category and class ratings and to provide them with the foundations on which they may operate aeroplanes in a safe and competent manner in compliance with the Trinidad and Tobago Civil Aviation Regulations (TTCARs)</i></p>
2. Pre-Entry Requirements	<p>Minimum Age, Flying Experience, Educational Requirements, Language And Medical Requirements.</p> <p><i>Example:</i> <i>In compliance with TTCAR No.1:30, PPL (A) students must meet the following requirements:</i></p> <p><i>(a) Be at least 17 years of age at the commencement of the course;</i> <i>(b) Demonstrate the ability to read, speak, write and understand the English language to the level of proficiency required by TTCAR No.1:30;</i> <i>(c) Possess a current Class 2 medical certificate issued in accordance with TTCAR No.1:Part VIII.</i></p>
3. Credit For Previous Experience	<p>The ATO's policy for granting a candidate credit should be stated.</p> <p><i>Example:</i> <i>(1) When a student transfers from one ATO to another, course credits obtained in the previous course of training may be credited in full or in part by the receiving ATO. The receiving ATO should determine the amount of credits to be allowed by giving the student a flight check or written test or both. A student shall not be credited with more training by the receiving ATO than was credited at the ATO from which the student transferred.</i></p> <p><i>(2) A student may be credited with not more that 50 percent of the curriculum requirements for knowledge and experience gained in other than an ATO.</i></p>
4. Training Curricula	<p>The courses offered by an ATO. A set of courses depicting total flight (synthetic or actual) and/or theoretical knowledge training syllabi.</p> <p><i>Example:</i> <i>1. The Private Pilot – Aeroplane course is presented as follows:</i> <i>(a) The PPL (A) flying and synthetic flight syllabus hours are at Annex A</i> <i>(b) The PPL (A) flying and synthetic flight syllabus content is at Annex B</i> <i>(c) The PPL (A) Theoretical knowledge syllabus is at Annex C</i></p> <p><i>2. Each ground or flight lesson should state:</i> <i>(a) The aim of each lesson / flight</i> <i>(b) The length of each lesson / flight</i> <i>(c) Lesson / flight exercise content</i> <i>(d) The completion standard</i></p>

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Subject Title	Content
5. The Time Scale (Duration Of The Course) And Scale (Timetable) In Weeks, For Each Curriculum	<p>Arrangements of the course and the integration of curricula time. Course time parameters listed in an ATO's training syllabus may be expressed in either maximum or minimum times. For example, a College or University holding an ATO certificate and offering an aviation degree programme involving flight training may integrate its academic and flight training curriculum with the semester system. The training timetables therefore would be published in terms of the number of weeks in each semester and would be expressed in terms of maximum time scales. In contrast, a Flight School conducting training under an ATO certificate would typically publish time scales as required by civil aviation regulations for each curriculum offered, usually expressed in terms of minimum flight hours.</p>
6. Training Programme	<p>(1) General Arrangements. The training manual should state the general arrangements (schedules) of the daily and weekly plan for flying; ground training and synthetic flight training.</p> <p>(2) Bad Weather Constraints (Limitations). Example: the training manual should state the minimum ceiling visibility and wind velocities for local flights and specific weather minimums for cross-country flights should be stated.</p> <p>(3) Programme Constraints. Restrictions should be included and expressed in terms of maximum student training times, (flying, theoretical knowledge, synthetic trainer) e.g. per day/week/month.</p> <p>(4) Duty Periods. Restrictions in respect of duty periods for students should be documented. A duty period should be defined, for example: A duty period commences from the time of reporting for training at the College or Flight School and terminates at the time of being released.</p> <p>(5) Duration of Flights. Duration of dual and solo flights at various stages of training should be documented.</p> <p>(6) Maximum Flying Hours. Maximum flying hours in any day/night should not exceed TTCAR limitations and should be documented, for example: A student shall not exceed 5 hours flying in any 24-hour period.</p> <p>(7) Maximum Training Flights. Maximum number of training flights in any day/night should be documented, for example: A student shall not be authorized for more than 4 flights or 5 hours flying, whichever occurs first, in any 24 hour period.</p> <p>(8) Minimum Rest. Minimum rest period between (flight) duty periods may not be less than TTCAR limitations and should be documented, for example: A flying duty period shall be preceded by a rest period of at least 10 hours.</p>
7. Training Records	<p>(1) Rules for security of records and documents. ATO applicants shall describe the method of securing training records, where they are retained, which personnel have access and who has overall responsibility for their security. A backup system of records should also be developed to ensure continuity in the event of a major disaster.</p> <p>(2) Attendance records. The ATO's policy for ensuring the accuracy of attendance records is normally documented in the duties and responsibilities of the Chief Ground and Flight Instructors.</p> <p>(3) The form of training records to be kept.</p>

<p>7. Training Records Cont.</p>	<p><i>Some examples might be:</i></p> <ul style="list-style-type: none"> (a) <i>A record of the personal details of each student</i> (b) <i>Flying and synthetic flight training record</i> (c) <i>Theoretical knowledge training record</i> (d) <i>Flying and synthetic flight training hours record</i> (e) <i>Medical records</i> (f) <i>Absence reports</i> (g) <i>Training reports</i> (h) <i>Special reports</i> <p>(4) Persons responsible for checking records and students' log books. This might be assigned to the Chief Flight/Ground Instructor (s).</p> <p>(5) The nature and frequency of records checks. The ATO applicant shall determine and document this policy.</p> <p>(6) Standardization of entries in training records. Each ATO applicant shall develop documentation that specifies the information that must be recorded in student training records.</p> <p>(7) Rules concerning log book entries. Each ATO applicant shall develop documentation that specifies the information that must be recorded in pilot log books.</p>
<p>8. Safety Training</p>	<p>(1) Individual responsibilities. For example: The Head of Training should be responsible for the overall safety of the ATO. The Chief Flight Instructor should be responsible to the Head of Training for flight safety and flight safety training. He may delegate this function to a Flight Safety Officer who will be responsible for the day-to-day management of flight safety matters. The Chief Ground Instructor should be responsible for the safety of training given in ground school and for instilling safety awareness in ground school personnel.</p> <p>(2) Essential exercises. These are the pre-requisite procedures and manoeuvres required for each phase of flight training. For example: In the case of pre-solo student pilots, the ATO should develop policy stipulating that drills student pilots shall have completed all standard flight exercises prior to the first solo flight. Similar statements would be appropriate as a condition for a stage check recommendation or a recommendation for a skill test.</p> <p>(3) Emergency drills. These drills vary with the types of courses offered by the ATO. Although not all inclusive, the following emergency are normally associated with a wide variety of flying courses:</p> <ul style="list-style-type: none"> (a) Fire on the ground; (b) Engine failure after takeoff; (c) Fire in the air; (d) Engine failure in the air; (e) Avionics failure. <p>(4) Dual checks (frequency at various stages). These are frequently called Stage Checks and are used to evaluate specific areas of student knowledge and skill at programmed intervals in a course of instruction. The ATO's policy should require this check to be given by a qualified instructor other than the student's regular instructor.</p> <p>(5) Requirement before first solo day/night/navigation etc. ATO applicants should document these requirements including prohibited manoeuvres.</p>

Subject Title	Content
<p>9. Checks And Tests.</p>	<p>(1)Flying: Progress checks and skill tests. ATO applicants should document in each flying course the standards applicable to flying progress checks and skill tests.</p> <p>(2) Knowledge: Progress tests and knowledge tests. Informal progress checks in individual subjects should be conducted throughout each course to reinforce learning and to identify any areas of weakness. Students' level of theoretical knowledge should be formally examined. The examinations may take the form of mock CAA examinations.</p> <p>(3)Authorization for test. A student's preparedness to take a knowledge or skill test should be documented by an authorized instructor on the appropriate CAA application form in accordance with procedures outlined in the ATO's Training Manual.</p> <p>(4)Refresher training before retest. Rules concerning refresher training requirements before any retest should be included.</p> <p>(5)Test reports and records. Procedures should be established requiring the Chief Flight Instructor and Chief Ground Instructor to periodically review test reports and training records to ensure that they meet their intended purpose and reflect any changes required by the CAA licensing authorities.</p> <p>(6)Test Procedures - Procedures should be established for –</p> <ul style="list-style-type: none"> (a) Test paper preparation, type of question and assessment, standard required for 'Pass'. (b) Question analysis and review and for raising replacement papers. (c) Retesting after failure and including policy regarding refresher training before the retest.
<p>10. Training Effectiveness</p>	<p>(1)Responsibilities. ATO applicants should document in the Training Manual–</p> <ul style="list-style-type: none"> (a) The individual responsibilities of - <ul style="list-style-type: none"> (i) The Head of Training (ii) The Chief Flight Instructor (iii) The Chief Ground Instructor (iv) The Academic Instructors (v) The Chief Synthetic Flight Trainer Instructor (vi) The Flight Instructors (b) Procedures - <ul style="list-style-type: none"> (i) Procedures should be established for performing a General Assessment of student performance that will enable the student to recognise clearly any shortcomings and to facilitate enhancement of the student's rate of learning. (ii) Procedures should be established to enable liaison between departments. (iii) Procedures should be established for the identification of unsatisfactory progress (individual students). (iv) Procedures should be established that prescribe actions to correct unsatisfactory progress. (v) Procedures should be established for changing instructors. (c) The ATO should state the maximum number of instructor changes per student. (d) The ATO should establish a quality system and an internal feedback system for detecting training deficiencies. (e) The ATO applicant should establish procedures for suspending a student from training.

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Subject Title	Content
10. Training Effectiveness Cont.	<p>(f) The ATO applicant should establish disciplinary procedures.</p> <p>(g) The ATO applicant should establish reporting and documentation procedures.</p>
11. Standards And Level Of Performance At Various Stages	<p>(1) Individual responsibilities. ATO applicants shall specify those personnel having responsibility for ensuring the standardization of all flight and synthetic trainer instructors.</p> <p>(2) Standardization requirements and procedures. ATO applicants shall establish procedures to ensure the standardization of all flight and synthetic trainer instructors.</p> <p>(3) Application of test criteria. The Training Manual should specify that the Skill Test Standards published by the CAA define the criteria to be used during the conduct of flight instructor standardization checks and pilot skill tests.</p>

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**CHAPTER 2
BRIEFING AND AIR EXERCISES**

1. This chapter shall include the subject titles shown, containing information as described in the content column.

Subject Title	Content
1. Training Exercises	A detailed statement of the content of each air and if applicable synthetic trainer exercise (manoeuvres and procedures) to be taught, arranged in the sequence to be flown/conducted, including the aim of the exercise (the objective), performance level to be achieved (the standard) and exercise duration. See Appendix 1 and 2.
2. Air Exercise Reference List	An abbreviated list of the above exercises giving only main and sub-titles for quick reference, and preferably in flip-card form to facilitate daily use by instructors, see Appendix 3.
3. Course Structure	An outline describing the following, see Appendix 4: (a) A statement of how the course will be divided into phases, (b) How the air exercises will be divided between the phases (c) How the air exercises will be arranged to ensure they are completed in the most (d) Suitable learning sequence (e) Indication that essential (emergency) exercises will be repeated at the correct frequency (f) The curriculum hours for each phase and for groups of exercises within each phase, and (g) When progress tests are to be conducted.
4. Course Structure Integration Of Curricula	For those ATO applicants seeking integrated courses of training (usually colleges and universities having aviation degree programmes) the manner in which - (a) Theoretical knowledge, (b) Synthetic flight training and (c) Aircraft flight training will be integrated, so that as the flight training exercises are carried out, students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and synthetic flight training.
5. Student Progress	ATO applicants shall include a brief but specific statement of what a student is expected to be able to do and the standard of proficiency he must achieve before progressing from one phase of air exercise training to the next. Include minimum experience requirements in terms of hours and satisfactory exercise completion before significant exercises such as night flying, or before advancement to the next phase.
6. Progress Tests	Satisfactory completion of each phase of air exercise training should be determined through progress testing. Progress tests should be developed for each course submitted by an ATO applicant that include instructions for facilitating the conduct and documentation of the examinations.

Subject Title	Content
7. Instructional Methods	<p>ATO applicants shall include in the training manual policy requiring pre-and post-flight briefings, adherence to curricula and training specifications.</p> <p><i>Example:</i></p> <p>(a) Preparatory instruction: <i>Group briefings (when appropriate) on relevant subjects will take place as indicated in the flight-training syllabus.</i></p> <p>(b) Pre-flight briefing: <i>Each student shall be briefed, before every flight, on the content of the lesson, or practice, and on the instructor's expectations of the student.</i></p> <p>(c) Air exercise: <i>This is a recommended series of procedures and manoeuvres, which detail appropriate demonstrations. Included will be airmanship considerations, speeds, power settings and flight attitudes. It will include airwork, and a chance for the student to ask questions followed by his/her practice.</i></p> <p>(d) Post flight discussion: <i>Each student shall be de-briefed after every flight. After a lesson, his performance will be assessed and, if appropriate, the student will be counselled on areas of under-performance and instructed on ways to improve his level of achievement.</i></p>
8. Glossary Of Terms	<p>Each Training Manual submitted by an ATO applicant shall contain a Glossary of Terms defining the essential concepts regularly communicated in each course, see Appendix 5.</p>

CHAPTER 3 SYNTHETIC FLIGHT TRAINING

1. ATO applicants wishing to offer flight-training courses using Synthetic Flight Trainers (SFTs) should arrange the structure of each course submitted to the CAA as in Chapter 2, Briefing And Air Exercises.

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**CHAPTER 4
KNOWLEDGE INSTRUCTION**

1. ATO applicants wishing to offer knowledge courses should arrange the structure of each course submitted to the CAA as in Chapter 2, Briefing And Air Exercises.

Subject Title	Content
1. Structure of the Theoretical Knowledge Course.	A statement of the structure of the course, including the general sequence of the topics to be taught in each subject, the time allocated to each topic, the breakdown per subject and an example of a course schedule. Distance learning courses should include instructions on the material to be studied for individual elements of the course.
2. Lesson Plans	Individual knowledge instruction lesson plans shall identify the specific training aids available for use.

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SECTION 2
THE PROCEDURES MANUAL
CHAPTER 1
GENERAL SECTION

1. This chapter shall include the subject titles shown, containing information as described in the content column.

Subject Title	Content
1. A List And Description Of All Volumes In The Procedures Manual	<p>These may include but are not limited to:</p> <ul style="list-style-type: none"> (a) Aircraft Flight Manuals (AFM) (b) Rotorcraft Flight Manuals (RFM) (c) Pilot's Operating Handbook (d) Safety Procedures Manual (e) Minimum Equipment Lists (MEL) (f) Avionics Equipment Operating Manual (g) Operating Manuals
2. Administration (Function And Management)	<p>At a minimum this would include company contact details, an organizational chart and the names and positions of the staff, including their qualifications as appropriate to the size and complexity of the ATO. For example, the staff representative of a large Training Organization might include but is not limited to:</p> <ul style="list-style-type: none"> (a) Head of Training (b) Deputy Head of Training (c) Chief Ground Instructor (d) Quality manager (e) Chief Flight Instructor (f) Flight Instructors (g) Synthetic Flight Instructors (h) Theoretical Knowledge Instructors (i) Type Rating Examiner (s) (j) Training Administrator
3. Responsibilities Of Management And Administrative Staff	<p>(1) The management structure shall ensure supervision of all grades of staff by persons having the experience and qualities necessary to ensure the maintenance of high standards. A Head of Training (HT) shall be nominated. The HT's responsibilities shall include ensuring that the ATO operates in compliance with relevant TTCARs. This person is directly responsible to the CAA. The ATO shall have adequate personnel necessary to accomplish the training objectives. The duties of each instructor shall be identified and documented.</p> <p><i>Examples:</i></p> <p>Although not all inclusive, the following examples describe the type of duties and responsibilities that may be included in an ATO procedures manual for a large ATO:</p> <p>(1) Head Of Training (HT). <i>The Head of Training reports to the Accountable Manager. However, he is directly responsible to the CAA for full compliance with all relevant TTCAR requirements. The HT is responsible for –</i></p> <ul style="list-style-type: none"> (a) <i>Ensuring that the highest standards of safety are maintained throughout the ATO.</i> (b) <i>Ensuring that the ATO is in compliance with the general requirements of the relevant TTCARs.</i> (c) <i>Ensuring that there are adequate numbers of suitably qualified training staff available to undertake the required training tasks.</i>

3. Responsibilities Of Management And Administrative Staff Cont.

- (d) *Ensuring that the quality and standard of training given by the training staff complies with specific requirements of the relevant TTCARs.*
- (e) *Ensuring that the highest standards of discipline within the ATO are maintained.*
- (f) *Recruitment of training personnel.*
- (2) **Deputy Head Of Training (DHT).** *The Deputy Head of Training reports to the Head of Training. The holder of the post of DHT -*
 - (a) *Will act as HT during the absence of the HT.*
 - (b) *Is responsible for the administration of the Training Organization under the direction of the HT.*
 - (c) *Will coordinate with the Quality Manager on matters concerning the Quality Plan.*
- (3) **Chief Flight Instructor (CFI).** *The Chief Flight Instructor reports to the Head of Training. He is required to hold a professional pilot licence and rating(s) related to the flying training courses he may conduct and a type rating instructor rating for any aeroplane on which he may instruct. The CFI is responsible for -*
 - (a) *The maintenance of the highest standards of safety, under the direction of the HT.*
 - (b) *Maintenance of the currency of personal licences and ratings, including medical fitness in order to conduct his/her assigned duties. In particular for ensuring that any approvals granted by the CAA are valid before conducting any training which require him/her to exercise the privileges of that approval.*
 - (c) *Advising the HT on all flying training matters as required.*
 - (d) *Preparation of all course syllabi to comply with TTCAR requirements*
 - (e) *Planning all airborne training and the scheduling as required.*
 - (f) *Monitoring the Standard Operating Procedures (SOPs) in use and for recommending revisions to SOPs to the DHT as necessary.*
 - (g) *Scheduling Instructors as necessary to ensure that the ATO training programmes are conducted in accordance with the established practices and procedures.*
 - (h) *Discipline and administration of the Flight Training department, under the direction of the HT.*
 - (i) *Preparation of Flight Test schedules as required.*
 - (j) *Liaison with the maintenance department or contractor(s) on all training aircraft maintenance matters.*
 - (k) *Liaison with the synthetic flight training organizations under contract with the company on future course planning issues.*
 - (l) *Liaison with the Quality Manager on matters concerning the Quality Plan.*
- (5) **Chief Ground Instructor (CGI).** *The Chief Ground Instructor reports to the Head of Training. The CGI is responsible for –*
 - (a) *Preparation of all course syllabi in compliance with TTCARs No.1 and No.9.*
 - (b) *Advising the DHT on theoretical training matters as required.*
 - (c) *Preparation of all course notes to be used by the instructors.*
 - (d) *Preparation of all course notes to be used by the trainees.*
 - (e) *Revision of instructor and trainee notes as required.*

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Subject Title	Content
<p>3. Responsibilities Of Management And Administrative Staff Cont.</p>	<p>(f) <i>Recommending to the DHT Lecturers considered being suitable for promotion.</i></p> <p>(g) <i>Discipline and administration of the Ground School department, under the direction of the DHT.</i></p> <p>(h) <i>Preparation of work schedules and rosters for all staff in the Ground School department.</i></p> <p>(i) <i>Organizing and preparing trainees for theoretical examinations as required by the Authority.</i></p> <p>(j) <i>Liaison with the Authority on theoretical training matters.</i></p> <p>(k) <i>Liaison with the Quality Manager on matters concerning the Quality Plan.</i></p> <p>(6) Quality Manager (QM). <i>The Quality Manager reports to the Head of Training. The reporting line for the Quality Manager depends upon the Quality Policy of the individual ATO. In this case the QM is shown as reporting directly to the HT but this could be amended to Accountable Manager, Managing Director etc. The Quality Manager is responsible for -</i></p> <p>(a) <i>The overall function of the ATO quality policy.</i></p> <p>(b) <i>The implementation and monitoring of quality policy.</i></p> <p>(c) <i>Requesting remedial actions related to quality policy.</i></p> <p>(d) <i>Ensuring that directives issued by the HT (or Accountable Manager/ MD etc) are carried out.</i></p> <p>(e) <i>Organization of the Quality Audit under the direction of the HT.</i></p> <p>(7) Ground Instructors (GIs). <i>Theoretical knowledge instruction shall be conducted by authorized ground instructors having appropriate experience in aviation and knowledge of the aircraft concerned. GIs report to the Chief Ground Instructor. GIs are responsible for -</i></p> <p>(a) <i>Preparation of lecture notes for trainees, under the direction of the CGI</i></p> <p>(b) <i>Presentation of lectures as directed by the CGI</i></p> <p>(8) Flight Instructors (FIs). <i>A (FI) reports to the Chief Flight Instructor. He is required to hold a professional pilot licence and rating(s) related to the flying training courses he may conduct and an instructor rating or authorization issued in accordance with TTCAR Part 2 relevant to the course being conducted. Each Flight Instructor is responsible for:</i></p> <p>(a) <i>Maintenance of the highest standards of safety during all stages of flight</i></p> <p>(b) <i>Maintenance of the currency of personal licences and ratings including medical fitness in order to conduct his/her assigned duties. In particular for ensuring that any approvals granted by the Authority are valid before conducting any training which require him/her to exercise the privileges of that approval.</i></p> <p>(c) <i>Conducting flight training as directed by the CFI</i></p> <p>(d) <i>Assisting the CFI in the preparation of course programmes to comply with TTCAR requirements</i></p> <p>(e) <i>Assisting the CGI with classroom presentations when required</i></p> <p>(9) Instructors For Synthetic Flight Training. <i>An instructor for synthetic flight training reports to the Chief Flight Instructor. He is required to hold or have held a Professional Pilot Licence and have instructional experience appropriate to the training course. He must hold CAA authorization to conduct synthetic flight training. Each Synthetic Flight Training Instructor is responsible for:</i></p>

Subject Title	Content
3. Responsibilities Of Management And Administrative Staff Cont.	<p>(a) Maintenance of the highest standards of safety during all stages of synthetic flight training</p> <p>(b) Maintenance of the currency of personal licences/authorizations/ratings in order to conduct his/her assigned duties. In particular for ensuring that any approvals granted by the CAA are valid before conducting any training which require him/her to exercise the privileges of that approval.</p> <p>(c) Conducting synthetic flight training as directed by the CFI</p> <p>(d) Assisting the CFI in the preparation of course programmes to comply with TTCAR requirements</p> <p>(e) Assisting the CGI with classroom presentations when required</p> <p>(10) Licensing Examiner (LE). A LE reports to the Head of Training. He is required to hold a professional pilot licence and rating(s) related to the flying training courses he may conduct. The LE must be approved by the CAA and is responsible for:</p> <p>(a) Maintenance of the highest standards of safety during all stages of flight</p> <p>(b) Maintenance of personal licences and ratings current, including medical fitness, in order to conduct his assigned duties. In particular for ensuring that any approvals granted by the CAA are valid before conducting any examining which require him/her to exercise the privileges of that approval.</p> <p>(c) Conducting flight examining as directed by the CFI. Such examining may only be conducted while exercising the privileges granted by the CAA.</p> <p>(11) Training Administrator. The Training Administrator reports to the Head of Training and is responsible for:</p> <p>(a) All matters concerning the administration of the ATO and to advise the HT as required.</p> <p>(b) Preparation of flight training documentation as required by the CFI</p> <p>(c) Maintenance and retention for the requisite periods of the training records of the training staff and of the trainees</p> <p>(d) Keeping the HT informed of ATO staffing requirements</p> <p>(e) Liaison with the CFI and the CGI to prepare and publish the respective schedules for the training staff</p> <p>(f) Administration staff discipline and recruitment, under the direction of the HT</p> <p>(g) Liaison with the Quality Auditor on matters concerning the Quality Plan</p> <p>(h) General office management of the ATO</p>
4. Student Discipline And Disciplinary Action	<p>The ATO should consider at least the following factors for inclusion in the Procedures Manual when developing policy affecting student conduct:</p> <p>(a) Students reporting on time for ground and flight training.</p> <p>(b) Students' completion of all preparations necessary for the next element of training.</p> <p>(c) The process to be used for breaches of required student conduct.</p> <p>(d) The responsibilities of the Chief Flight Instructor and the Head of Training in matters concerning student conduct.</p>
5. Approval/Authorization Of Flights	<p>The ATO should consider at least the following factors for inclusion in the Procedures Manual when developing policy affecting approval or</p>

Subject Title	Content
5. Approval/Authorization Of Flights Cont.	authorization of flights: (a) Criteria for dual and solo flights (b) Criteria for acting as pilot-in-command (c) Persons having authority to approve or authorize flights
6. Preparation Of Flying Programme (Restriction Of Aircraft In Poor Weather)	The ATO should consider at least the following factors for inclusion in the Procedures Manual when developing policy affecting the preparation of the flying programme: (a) Identification of the person responsible for publishing the daily flying programme (schedule). (b) Identification of the person responsible for supervising the daily flight programme and monitoring the weather and air traffic situation (this person should be trained and qualified in the duties of a training-flight dispatcher).
7. Command Of Aircraft	When developing policy that authorizes a pilot to act as pilot-in-command of ATO aircraft, the training organization should consider at least the following factors for inclusion in the Procedures Manual: (a) The appropriate licence, rating or authorization required for the specific flight (b) Rest, duty and flight time limitations for the duration of the flight (c) Applicable licence currency requirements
8. Responsibilities Of Pilot In Command	When developing policy that authorizes a pilot to act as pilot-in-command of ATO aircraft, the training organization should consider at least the following factors affecting PIC responsibilities for inclusion in the Procedures Manual: (a) TTCAR No.2:46(6), which stipulates that the PIC is responsible for the operations and safety of the aircraft and for the safety of all persons on board during flight. (b) TTCAR No.2:46(6) which specifies duties and responsibilities of the PIC which includes the safety of all persons and cargo on board. TTCAR No.2:46(7) stipulates that the PIC may deviate from rules, operational procedures and methods in the interest of safety.
9. Carriage Of Passengers	When developing policy affecting the carriage of passengers the training organization should consider at least the following factors for inclusion in the Procedures Manual: (a) Prohibiting the holder of a student pilot authorization from carrying passengers during solo flight. (b) Allowing authorized observers to be carried on dual instructional flights.
10. Aircraft Documentation	When developing policy pertaining to the carriage of proper aircraft documentation the training organization should consider at least the following factors for inclusion in the Procedures Manual: (a) Pilot pre-flight actions (b) The provisions of TTCAR No.2:11 "Documents required on board an aircraft".
11. Retention Of Documents	When developing policy pertaining to retention of documents the training organization should consider the two years retention requirements stipulated in TTCAR No.9:22 Record Keeping Requirements, for inclusion in the Procedures Manual, including - (a) Details of training given to individual students; (b) Detailed and regular progress reports from instructors including assessments, and regular progress tests and examinations;

Subject Title	Content
11. Retention Of Documents Cont.	Personal trainee information, e.g. names, course, certificates held, expiry dates of medical certificates, if applicable, ratings, etc.; and (c) A record of each instructor that indicates qualifications and compliance with TTCAR No.1 and No.9.
12. Flight Crew Qualification Records (Licences And Ratings)	When developing policy pertaining to flight crew qualification records, the training organization should consider at least the following factors for inclusion in the Procedures Manual: (a) The record keeping requirements of TTCAR No.9:22 (b) The general licensing requirements of TTCAR No.1 and No.9; (c) The flight crew qualification requirements of TTCAR No.9 Schedule 3.
13. Revalidation (Licences, Ratings And Medical Certificates)	When developing policy pertaining to the revalidation of licences, ratings and medical certificates, the training organization should consider at least the flight crew validation requirements stipulated under TTCAR No.1:154-158 for inclusion in the Procedures Manual.
14. Flight Duty And Rest Periods For Flight Instructors And Students	(1) Pilots should be aware of the increased risks of working when fatigued, see Appendix 7. Staff and students are likely to become more fatigued if operating during the extremes of cold or heat and humidity. On the ground there is an increased probability of mistakes in planning; in the air, judgment and concentration may be degraded. Staff and students should ensure that they achieve adequate rest to prepare them for their duties. The following is an example of how an ATO might arrange policy pertaining to flight, duty and rest limitations for flight instructors and students for inclusion in the Procedures Manual: <i>Example</i> (1) Duty Period. <i>A duty period commences from the time of reporting for work at the training organization and terminates at the time of being released. The duty period would not normally exceed 10 hours continuous duty but may be extended to a period of 12 hours provided a rest period of 4 hours is included. When night flying is programmed (scheduled) the maximum duration of an uninterrupted duty period, which continues from day into night, shall not exceed 8 hours. The normal working week will be Monday to Friday, but weekend working will be programmed if necessary to remedy delays due to weather, student sickness or technical problems.</i> (3) Rest Periods. <i>A flying duty period shall be preceded by a rest period of at least 10 hours. A minimum of 8 hours rest shall precede a non-flying duty period.</i> (4) Flying Duty Limitations: (a) Flight Instructors. <i>The number of flying hours completed by staff shall not exceed 8 in any duty period. The maximum number of instructional flights in a duty period shall not exceed 5, with the provision that 2 flights of fewer than 30 minutes may be counted as one flight.</i> (b) Students. <i>A student shall not be authorized for more than 4 flights or 5 hours, whichever occurs first, in a duty period. A student shall not fly as pilot-in command on the fourth flight of a duty period. Dual to solo exercises, when the student does not leave the aircraft, may be counted as one flight. A student shall not fly more than 4 solo hours per duty period.</i>

Subject Title	Content
14. Flight Duty And Rest Periods For Flight Instructors And Students Cont.	<p>(5) Cumulative Duty and Flying:</p> <p>(a) Flight and Ground Instructors. <i>An instructor's total weekly duty hours averaged over any 4 consecutive weeks shall not exceed 50. A flight instructor shall not exceed 80 hours of flying instruction in any 28-day period or 900 hours flying in any 12 consecutive calendar months. A ground instructor shall not exceed 23 teaching hours in any week or an average of 18 teaching hours per week over any 12-month period. These figures should be taken to include all classroom contact time.</i></p> <p>(b) Students. <i>A student's total duty hours shall not exceed 48 in any one-week. He shall not work more than two six-day weeks in any 4-week period without the prior written approval of the Chief Flight Instructor. Additionally he will not report for duty for more than six consecutive days. A student shall not exceed 5 hours flying in any 1 day, 15 hours flying in any consecutive 5-day period, 50 hours flying (including synthetic flight) in any consecutive 28 days, or 130 hours (including synthetic flight) in any consecutive 90 days.</i></p>
15. Pilot's Log Books	<p>(1) The Procedures Manual should include information that needs to be recorded in flight instructor and student's logbook for each flight. Flight instructors and students should record the details of each flight in a pilot logbook. The following information is typically recorded:</p> <p>(2) Personal Details:</p> <p>(a) Name and address of logbook holder</p> <p>(3) For Each Flight:</p> <p>(a) Name of PIC</p> <p>(b) Date of flight</p> <p>(c) Place and time of departure and arrival</p> <p>(d) Type of aircraft and registration identification</p> <p>(4) For each synthetic flight trainer session:</p> <p>(a) Type and qualification number of flight trainer</p> <p>(b) Synthetic flight trainer instruction</p> <p>(c) Date</p> <p>(d) Total time of session</p> <p>(5) Pilot function:</p> <p>(a) Solo</p> <p>(b) PIC</p> <p>(c) Co-pilot</p> <p>(d) Dual Instruction</p> <p>(e) Flight instructor</p> <p>(6) Brief details of the training undertaken</p> <p>(a) Total time of flight, day or night</p> <p>(b) Instrument flight time, simulated or actual</p> <p>(7) Navigation/Cross-country</p>
16. General Flight Planning	<p>When developing policy pertaining to general flight operations planning, the training organization should consider developing procedures for the following for inclusion in the Procedures Manual:</p> <p>(a) Assessing and restricting the flying programme if necessary commensurate with poor weather, aerodrome, or air traffic conditions.</p> <p>(b) Monitoring all solo flying.</p> <p>(c) Providing airborne pilots with technical and operational advice when requested</p>

Subject Title	Content
17. Safety	<p>Responsibility. The Head of Training has overall responsibility for the safety of activities conducted by the ATO. The Chief Flight Instructor, who is responsible to the Head of Training for flight safety and flight safety training, may delegate this safety function to a Flight Safety Officer who will be responsible for the day-to-day management of safety matters. The duties of an ATO Flight Safety Officer usually involve the following and should be included in the Procedures Manual:</p> <ul style="list-style-type: none"> (a) Providing a focus for the improvement of flight safety awareness (b) Identifying areas of flight safety concern and recommending appropriate action (c) Preparation and dissemination of information on flight safety and aircraft safety equipment (d) Organizing flight safety meetings (e) Processing flight safety reports
18. Equipment	<p>The Procedures Manual should include information on equip that must be carried in an aircraft used for training. The aircraft used for flight training should carry at least the following safety equipment stowed securely in the correct position and accessible by the crew:</p> <ul style="list-style-type: none"> (a) Hand fire extinguisher (b) First aid kit (c) Flashlight on night flights
19. Aircraft Fuelling	<p>The Procedures Manual should include procedures and precautions for aircraft fuelling which should include the following:</p> <ul style="list-style-type: none"> (a) Only qualified personnel should carry out aircraft fuelling operations. (b) During fuelling, at least the following precautions should be observed: <ul style="list-style-type: none"> (i) No smoking, within 50 ft of the aircraft, fuel truck or fuel pumps (ii) Fire fighting equipment to be at hand (iii) Aircraft should be grounded (iv) All crew and passengers should be disembarked
20. Radio Listening Watch	<p>During flight operations, flight instructors and students should maintain a listening watch at all times on the appropriate ATC frequency, details of which should be included in the Procedures Manual.</p>
21. Hazards	<p>The ATO should develop safety procedures relevant to operational hazards for inclusion in the Procedures Manual, such as:</p> <ul style="list-style-type: none"> (a) Loose articles in the aircraft (b) Smoking (c) Cell phones (d) Birds nests in engine cowlings (e) Winter operations (f) Aircraft wake turbulence
22. Accident and Incident Reporting	<p>The ATO should develop procedures compatible with civil aviation regulations for the reporting of aircraft accidents and incidents for inclusion in the Procedures Manual (See TCAR No.2:67-74).</p>

CHAPTER 2
TECHNICAL

1. This chapter of the Procedures Manual should contain technical information for each type of aircraft operated by the ATO under the following Subject areas;

Subject Title	Content
1. Aircraft Descriptive notes	<p>The Procedures Manual should contain information on at least the following systems and limitations for each type of aircraft operated by the training organisation:</p> <ul style="list-style-type: none"> (a) Airframe (b) Airspeed and Powerplant limitations (c) Avionics (d) Electrical (e) Engine (f) Flight controls (g) Fuel (h) Hydraulic (i) Instrument panel (j) Landing gear system (k) Propeller (l) Mass and Centre of Gravity Limitations.
2. Aircraft Handling	<p>The aircraft handling section of the Procedures Manual provides a wide range of practical information of importance to both students and instructors. For example, the aircraft handling section should address at least the aircraft checklists, aircraft limitations, and the aircraft maintenance and technical logs, and may address any or all of the following additional subjects as they apply to a particular aircraft:</p> <ul style="list-style-type: none"> (a) Turns after takeoff (b) Aerobatics and other unusual manoeuvres (c) Practice forced landings (d) Regulations applicable to low flying (e) Instrument flying – actual and simulated (f) Go-around action (g) Refuelling procedures, and (h) Practice in asymmetrical flight
3. Emergency Procedures	<p>The ATO should reference the emergency procedures specified by the aircraft manufacturer in the Aircraft Flight Manual or Pilot's Operating Handbook.</p>
4. Radio And Navigation Aids	<p>The ATO should describe the communications and navigation capabilities of its aircraft.</p>
5. Allowable Deficiencies	<p>(1) Here, the ATO should identify each aircraft having a Minimum Equipment List (MEL) approved by the TTCAA, including some general guidance on its use. For those aircraft without an MEL, the ATO should provide general guidance on items of equipment that may be deficient without affecting the airworthiness status of the aircraft.</p> <p>(2) In general terms, inoperative instruments and equipment that are not:</p> <ul style="list-style-type: none"> (a) Part of an aircraft's VFR-day Type Certificate; (b) Required by the aircraft's equipment list; (c) Required for the kind of operation being conducted; or (d) Required by an airworthiness directive are the types of items that may be deficient or inoperative without affecting the airworthiness of the aircraft.

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CHAPTER 3

ROUTE

1. This chapter shall include the subject titles shown, containing information as described in the content column.

Subject Title	Content
1. Performance	The pilot-in-command shall ensure that having given consideration to reported and forecast meteorological conditions, aerodrome criteria and aircraft mass, the aircraft can perform safely the take-off, route and landing manoeuvres. The relevant performance data should be extracted from the appropriate Aircraft Manual.
2. Regulatory Requirements	When developing policy pertaining to aircraft performance, the training organization should consider the provisions of: (a) TTCAR No.2:106(2); (b) TTCAR No.2:107 (c) TTCAR No.2:108
3. Flight Planning And Loading	Comprehensive pre-flight planning reflecting the route to be flown, en route weather, and destination and alternate weather conditions, is essential for the safe execution of a proposed flight. It is the responsibility of the pilot in command to ensure that the aircraft is correctly loaded and balanced for all stages of flight. The mass and balance limits and procedures shown in each aircraft flight manual are to be complied with. Training organizations shall describe the procedures to be used for developing the: (a) Route Plan; (b) Fuel Plan; (c) Loading Plan; (d) Performance Plan.
4. Weather Minima	Training organizations shall describe the basic weather minima for flight instructors and students at various stages of training consistent with the provisions of TTCAR No.2.
5. Training Routes And Areas	ATOs shall identify the training routes to be used for navigation (cross country flights), the areas used for practicing air exercises and all aerodromes approved for student use by the training organization. Operating procedures for flight training conducted within those areas should also be documented in the ATO's Procedures Manual.

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CHAPTER 4

STAFF TRAINING

APPOINTMENTS OF PERSONS RESPONSIBLE FOR STANDARDS AND/OR COMPETENCE OF FLYING STAFF

1. The training organization shall identify the person responsible for the standardization and competence of the flying staff. Depending on the size and scope of the ATO, this person may be the Chief Flight Instructor or one or more staff instructors appointed by the Chief Flight Instructor as Standardization instructors.

Subject Title	Content
1. Initial Training	Each training organization shall develop an initial training syllabus for the training of flight instructors consisting of both ground and flight training in at least the areas outlined under TTCAR No.1, giving a review of the flight instructor areas of operation relevant to the flight training syllabi the flight instructor is assigned to teach.
2. Refresher/ Standardization Training	The ATO should require all flight instructors to fly with a standardization instructor at least annually for the purpose of evaluating each instructor's continued conformance with the CAA approved operating procedures and air exercises conducted by the training organization. A reasonable amount of flight time should be allocated for staff refresher and standardization training if required.
3. Proficiency Checks	Flight instructors that have not flown an aircraft in 30 days or more should be required to accomplish a proficiency check with a flight instructor in current status before commencing duty.
4. Upgrade Training	Upgrade progression for flight instructors is typically from single engine training to multi engine training to instrument training to type rating training, with each type of training requiring an upgraded level of flight instructor knowledge, skill and experience. ATO's should require flight instructors to accomplish the training organization's upgrade training syllabus as appropriate to the type of equipment or operation to which the flight instructor will be upgrading.
5. ATO Staff Standards Evaluation	The Head of Training should carry out regular flight and ground checks on all active and qualified flight instructors in order to determine their level of competency and uniformity of standardization. He may delegate this duty to the Chief Flight Instructor or qualified standardization instructor only.

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APPENDIX 1
SAMPLE PPL (A) TRAINING EXERCISE
(Example From An ATO's Training Manual)

PHASE ONE - SOLO FLIGHT 9 HOURS DUAL, 1 HOUR SOLO

AIM. The student will be instructed in the flying procedures and skills necessary for accomplishing the first solo flight.

PHASE ONE COMPLETION STANDARDS. The phase will be completed when the student satisfactorily passes the Phase One Progress Test and is able to conduct solo flights safely.

FLIGHT EXERCISE No. 1 (1 HOUR DUAL).

AIM. The student will be familiarized with the training aeroplane, its operating characteristics, cabin controls, instruments, and systems, preflight procedures, use of checklists, and safety precautions to be followed. The student will be instructed in basic flight manoeuvres.

CONTENT:

Preflight discussion.

Introduce -

- (a) Purpose of preflight checks and visual inspections;
- (b) Apron (preflight) inspection and aircraft servicing;
- (c) Importance of using a checklist;
- (d) Starting engine and runups;
- (e) Basic radio procedures;
- (f) Taxiing;
- (g) Pretakeoff checklist;
- (h) Takeoff (normal or crosswind);
- (i) Traffic pattern departure;
- (j) Local flying area familiarization;
- (k) Straight and level flight (VR and IR);
- (l) Shallow and medium bank turns (VR and IR) in both directions;
- (m) Collision avoidance;
- (n) Traffic circuit entry;
- (o) Ground safety;
- (p) Postflight procedures;
- (q) Cockpit management;
- (r) Postflight critique and preview of next lesson.

Note: *The notation "VR and IR" is used to indicate manoeuvres to be performed by both visual and instrument references during the conduct of integrated flight instruction.*

COMPLETION STANDARDS. At the completion of this lesson, the student should be able to, with instructor assistance, conduct an aeroplane preflight, use the aircraft checklists, perform an engine run-up, maintain altitude within ± 200 feet in straight and level flight and in turns, control aircraft heading within $\pm 20^\circ$, and display an understanding of ground safety.

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APPENDIX 2
SAMPLE TYPE RATING COURSE TRAINING EXERCISE
(Example From An ATO's Training Manual)

SIMULATOR EXERCISE 2.

AIM: The instructor for synthetic flight training will revisit the process for determining aircraft performance and discuss with the trainee each flight manoeuvres to be covered in the aircraft simulator during this period.

METHODS AND MATERIALS: A B-727 flight simulator appropriately qualified and approved by the CAA for training and testing pilots in the aeroplane type rating requirements of TTCAR No.1.

MANOEUVRES

Engine Starts	VOR Approach
Low Visibility Takeoff	Manual Reversion Flight and Landing
Rejected Takeoff	Zero Flap Landing
Area Departure	ILS – Flight Director and Raw Data
Specific Flight Characteristics	ADF Approach
Climb to FL 350	Landing
Rapid Depressurization	Taxi & Parking
Emergency Descent	Shutdown

ABNORMAL SYSTEM PROCEDURES

B Hydraulic pump overheat	Wing Body Overheat
Loss A System quantity	Manual Gear Extension
Loss B System pressure	Alternate Flaps Ext.
Pack Trip Off	

EMERGENCY SYSTEM PROCEDURES

APU Fire	Runaway Stabilizer
Engine Relight procedures	Manual Reversion
Rapid Depressurization	

COMPLETION STANDARDS: Successful completion of the exercise is indicated when the student exhibits a working level of flying skill and displays knowledge of the elements related to the procedures and manoeuvres listed above.

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APPENDIX 3
AIR EXERCISE REFERENCE LIST – TYPE RATING COURSE
(Example From An ATO's Training Manual)

Exercise 1	Introduction and Familiarisation
Documents:	Performance Manual, Speed Card
SOPs:	Standard Calls, Use of Checklists, and Allocation of Duties
Procedures:	Pre Take-off Take-off and Climb - Normal Cruise - Level Flight, Turns, and Steep Turns Descent and Initial Approach Approaches - Radar Vektored ILS/DME Landing - Normal Post-landing
Exercise 2	Aircraft Handling
Documents:	As Ex 1
SOPs:	As Ex 1
Procedures:	Pre Take-off Take-off and Climb - Normal Cruise - controls and stability, low/high speed cruise, stalling and stall recovery, Dutch roll, and overspeed warning. Descent and Initial Approach Approaches - STAR to Procedural ILS/DME Go-around and standard missed approach Landing - Normal Post-landing
Exercise 3	Orientation and Tracking
Documents:	As Ex 1
SOPs:	As Ex 1
Procedures:	Pre Take-off Take-off and Climb - Normal, followed by SID Cruise Descent and Initial Approach - STAR and holding Approaches - NDB/DME and LLZ/DME approaches Go-around and standard missed approach Landing - Normal Post-landing

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APPENDIX 4
COURSE STRUCTURE - GENERAL
(Example From An ATO's Training Manual)

Structure of the Course

The course is arranged in 3 phases and comprises 40 total curriculum hours of flight training, which includes 1 hour of synthetic flight training.

Course Phases

The Phases are set to change at points when the student's absorption of training can best be measured in order to assess his fitness to progress to the next phase of training. Each phase concludes with a progress test conducted by an authorized instructor other than the student's regularly assigned instructor. The final progress test is to determine that the student has acquired the knowledge and skill required of the holder of a PPL (A) licence using the TTCAR No.1 PPL (A) Skill Test Standard as a guide.

TRAINING PHASES	1	2	3			Hours
Total Dual	9.0	11.0	5.0			25.0
Total Solo	1.0	5.0	9.0			15.0
Total Dual Day	8.0	2.0	3.0			13.0
Total Dual Night		5.0				5.0
Total Solo Day	1.0	2.0	2.0			5.0
Total Dual Nav.		3.0				3.0
Total Solo Nav.		3.0	7.0			10.0
Total Synthetic			1.0			1.0
Dual Prog Test	1.0	1.0	1.0			3.0
TOTAL COURSE	10.0	16.0	14.0			40.0

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APPENDIX 5
GLOSSARY OF TERMS
(Example From An ATO's Training Manual)

Category (of Aircraft)	Categorization of aircraft according to specified basic characteristics, e.g. Aeroplane, helicopter, free balloon.
Conversion (of a license)	The issue of a Trinidad and Tobago pilot licence on the basis of a license issued by another ICAO member State.
Co-Pilot	“Co-Pilot” means a pilot operating other than as a pilot-in-command of an aircraft for which more than one pilot is required under the aircraft type certificate, or the operational regulations under which the flight is conducted, but excluding a pilot who is onboard the aircraft for the sole purpose of receiving flight instruction for a license or a rating.
Dual instruction time	Flight time or instrument ground time during which a person is receiving flight instruction from a properly authorized instructor.
Flight time	The total time from the moment an aircraft first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.
Instrument time	Instrument flight time or instrument ground time.
Instrument flight time	Time during which a pilot is controlling an aircraft in flight solely by reference to instruments.
Instrument ground time	Time during which a pilot is receiving instruction in simulated instrument flight in synthetic training devices (STD's).
Multi-crew co-operation	The functioning of the flight crew as a team of co-operating members led by the pilot-in-command.

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APPENDIX 6 TPM CHECKLIST

The TPM should include the following items as far as they are appropriate to the type of the training to be provided, i.e. Flight Crew Licensing Courses, Aircraft Maintenance Technician Courses, Etc. This form may be used as an applicant's compliance statement & CAA inspector Checklist

ATO Reference No.		Names of Inspector(s)		Type of Operation		Tracking No.		
Date Accomplished				Operator/Applicant		Activity Code		
Location	Name of Accountable Manager		Name of Head of Training		Action*			
				S	U	Ap	Ac	F
*Action Codes: S=Satisfactory; U=Unsatisfactory; Ap= Approved; Ac=Accepted; F=Follow-up								
Subject				Page-Paragraph	YES	NO	N/C	N/A
GENERAL GUIDELINES								
Are the following satisfactory:								
1. Preamble relating to use and authority of the TPM?								
2. Table of contents?								
3. Amendment, revision and distribution:								
(a) Procedures for amendment?								
(b) Amendment record page?								
(c) Distribution list?								
(d) List of effective pages?								
4. Glossary of significant terms and definitions?								
5. Description of the structure and layout of the manual, including:								
(a) Various parts, sections, their contents and use?								
(b) The paragraph numbering system?								
6. Description of the scope of training authorized under the organization's terms of approval?								
7. Organization (chart of the management organization)?								
8. Qualifications, responsibilities and succession of command of management and key operational personnel, including but not limited to:								
(a) Accountable manager?								
(b) Quality manager?								
(c) Head of training?								
(d) Chief flight instructor?								
(e) Chief ground instructor?								
(f) Maintenance Manager?								
(g) Instructors — ground, flight and synthetic?								
9. Description of the facilities available, including:								
(a) The number and size of classrooms?								

TPM Checklist (Page 2)

Subject	Page-Paragraph	YES	NO	N/C	N/A
(b) Training aids provided?					
(c) Synthetic flight training devices and training aircraft?					
TRAINING MANUAL CHAPTER 1: THE TRAINING PLAN					
Has the following information been included and satisfactorily expressed in the Training Plan					
10. Aim of the course:					
(a) A statement of what the student is expected to do as a result of the training?					
(b) The level of performance?					
(c) The training constraints to be observed?					
11. Pre-entry requirements:					
(a) Minimum age?					
(b) Educational requirements?					
(c) Language requirements?					
(d) Medical requirements?					
12. Credit for previous experience:					
(a) Obtained from the TTCAA before training begins?					
13. Training curricula:					
(a) The flying curriculum (single-engine)?					
(b) The synthetic flight training curriculum?					
(c) The theoretical knowledge-training curriculum?					
14. Programmed curriculum times:					
(a) Arrangements of the course and the integration of curricula time?					
15. Training programme:					
(a) The general arrangements of daily and weekly programmes for flying, ground and synthetic flight training?					
(b) Bad weather constraints?					
(c) Programme constraints in terms of maximum student training times, (flying, theoretical knowledge, synthetic) e.g. per day/week/month?					
(d) Restrictions in respect of duty periods for students?					
(e) Duration of dual and solo flights at various stages?					
(f) Maximum flying hours in any day/night?					
(g) Maximum number of training flights in any day/night?					
(h) Minimum rest period between duty periods?					
16. Training records – TTCAR No.9:22:					
(a) Rules for security of records and documents?					
(b) Attendance records?					
(c) The form of training records to be kept?					
(d) Persons responsible for checking records and students' log books?					
(e) The nature and frequency of records checks?					

TPM Checklist (Page 3)

Subject	Page-Paragraph	YES	NO	N/C	N/A
(f) Standardization of entries in training records. Rules concerning log book entries?					
17. Safety training					
(a) Individual responsibilities?					
(b) Essential exercises?					
(c) Emergency drills (frequency)?					
(d) Dual checks (frequency at various stages)?					
(e) Requirement before first solo day/night/navigation etc?					
18. Checks and tests					
(a) Flying: Progress checks and skill tests?					
(b) Knowledge: Progress tests and knowledge tests?					
(c) Authorization for test?					
(d) Rules concerning refresher training before retest?					
(e) Test reports and records?					
(f) Procedures for test paper preparation, type of question and assessment, standard required for 'Pass'?					
(g) Procedure for question analysis and review and for raising replacement papers?					
(h) Test retest procedures?					
19. Training effectiveness					
(a) Individual responsibilities?					
(b) General Assessment?					
(c) Liaison between departments?					
(d) Identification of unsatisfactory progress (individual students)?					
(e) Actions to correct unsatisfactory progress?					
(f) Procedure for changing instructors?					
(g) Maximum number of instructor changes per student? Internal feedback system for detecting training deficiencies?					
(h) Procedure for suspending a student from training?					
20. Standards and level of performance at various stages:					
(a) Individual responsibilities?					
(b) Standardization?					
(c) Standardization requirements and procedures?					
(d) Application of test criteria?					
TRAINING MANUAL					
CHAPTER 2: BRIEFING AND AIR EXERCISES					
Is the following satisfactory for presentation and content?					
21. Air exercise:					
(a) A detailed statement of the content specification of all the air exercises to be taught, arranged in the sequence to be flown with main and sub-titles?					

TPM Checklist (Page 4)

Subject	Page-Paragraph	YES	NO	N/C	N/A
22. Air exercise reference list:					
(a) An abbreviated list of the above exercises giving only main and sub-titles for quick reference, and preferably in flip-card form to facilitate daily use by instructors?					
23. Course structure- training phase					
(a) A statement of how the course will be divided into phases, indication of how the above air exercises will be divided between the phases and how they will be arranged to ensure that they are completed in the most suitable learning sequence and that essential (emergency) exercises are repeated at the correct frequency?					
(b) The curriculum hours for each phase and for groups of exercises within each phase shall be stated and when progress tests are to be conducted, etc.?					
24. Course structure integration of curricula:					
(a) The manner in which theoretical knowledge, synthetic flight training and flying training will be integrated so that as the flying training exercises are carried out students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and synthetic flight training?					
25. Student progress:					
(a) The requirement for student progress and include a brief but specific statement of what a student is expected to be able to do and the standard of proficiency he must achieve before progressing from one phase of air exercise training to the next?					
(b) Include minimum experience requirements in terms of hours, satisfactory exercise completion, etc. As necessary before significant exercises, e.g. night flying?					
26. Instructional methods:					
(a) The ATO requirements, particularly in respect of pre and post flying briefing, adherence to curricula and training specifications, authorization for solo flight, etc?					
27. Progress tests:					
(a) The instructions given to examining staff in respect of the conduct and document of all progress tests?					
28. Glossary of terms:					
(a) Definition of significant terms as necessary?					
29. Appendices:					
(a) Progress test report forms?					
(b) Skill test report forms?					
(c) ATO certificates of experience, competence, etc. as required?					

TPM Checklist (Page 5)

Subject	Page-Paragraph	YES	NO	N/C	N/A
TRAINING MANUAL CHAPTER 3: SYNTHETIC FLIGHT TRAINING					
Is the structure of the following Subjects generally as for Chapter 2					
30. Air exercise?					
31. Air exercise reference list?					
32. Course structure-phase of training (c)?					
33. Course structure integration of curricula?					
34. Student progress?					
35. Instructional methods?					
36. Progress tests?					
37. Glossary of terms?					
38. Appendices?					
TRAINING MANUAL CHAPTER 4: KNOWLEDGE INSTRUCTION					
Are the following Satisfactory:					
39. Objective for each subject?					
40. Individual lesson plans?					
41. Specific training aids available for use?					
PROCEDURES MANUAL CHAPTER 1: GENERAL					
Are the following in compliance with the Regulations and guidance:					
42. A list and description of all volumes in the Procedures Manual?					
43. Administration (function and management)?					
44. Responsibilities (all management and administrative staff)?					
45. Student discipline and disciplinary action?					
46. Approval/authorization of flights?					
47. Preparation of flying programme (restriction of numbers of aircraft in poor weather)?					
48. Command of aircraft?					
49. Responsibilities of pilot-in-command?					
50. Carriage of passengers?					
51. Aircraft documentation?					
52. Retention of documents?					
53. Flight crew qualification records (licences and ratings)?					
54. Revalidation (licences, ratings and medical certificates)?					
55. Flying duty period and flight time limitations (flying instructors)?					
56. Flying duty period and flight time limitations (students)?					
57. Rest periods (flying instructors)?					
58. Rest periods (students)?					
59. Pilots' log books?					
60. Flight planning (general)?					

Subject	Page-Paragraph	YES	NO	N/C	N/A
61. Safety (general: equipment, radio listening watch, hazards, accidents and incidents, including reports, safety pilots, etc.?)					
PROCEDURES MANUAL CHAPTER 2: TECHNICAL					
Are the following aircraft descriptive notes satisfactory:					
62. Aircraft handling (including checklists, limitations, aircraft maintenance and technical logs, in accordance with relevant requirements, etc.)?					
63. Emergency procedures?					
64. Radio and radio navigation aids?					
65. Allowable deficiencies (based on MMEL, if available)?					
PROCEDURES MANUAL CHAPTER 3: ROUTE					
Are the following satisfactory:					
66. Performance (legislation, take-off, route, landing, etc.)?					
67. Flight planning (fuel, oil, minimum safe altitude, navigation equipment, etc.)?					
68. Loading (load sheets, mass, balance, limitations)?					
69. Weather minima (flying instructors)?					
70. Weather minima (students: at various stages of training)?					
71. Training routes/areas?					
PROCEDURES MANUAL CHAPTER 4: STAFF TRAINING					
Are the following satisfactory:					
72. Appointments of persons responsible for standards/ competence of flying staff?					
73. Initial training?					
74. Refresher training?					
75. Standardization training?					
76. Proficiency checks?					
77. Upgrading training?					
78. ATO staff standards evaluation?					

ATO CHECKLIST COMMENTS

Checklist No.	Operator/Organization	Tracking No:
<p>Notes: 1. A "NO" or "N/C" response on a checklist must be accompanied by reason or comments. 2. Precede all comments with the applicable checklist item number or discrepancy number.</p>		
Comments:		
Recommendations		
Name of Inspector _____ Signature _____ Date _____		

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APPENDIX 7
Flight Time And Flight Duty Period Limitations
(Reprint from ICAO Annex 6, Part I)

PURPOSE AND SCOPE

1. (1) Flight time and flight duty period limitations are established for the sole purpose of reducing the probability that fatigue of flight crewmembers may adversely affect the safety of flight.

(2) In order to guard against this, two types of fatigue must be taken into account, namely, transient fatigue and cumulative fatigue. Transient fatigue may be described as fatigue, which is normally experienced by a healthy individual following a period of work, exertion or excitement, and it is normally dispelled by a single sufficient period of sleep. On the other hand cumulative fatigue may occur after delayed or incomplete recovery from transient fatigue or as the after- effect of more than a normal amount of work, exertion or excitement without sufficient opportunity for recuperation.

(3) Limitations based on the provisions of this Part will provide safeguards against both kinds of fatigue because they will recognize:

- (a) The necessity to limit flight time in such a way as to guard against both kinds of fatigue.
- (b) The necessity to limit time spent on duty on the ground immediately prior to a flight or at intermediate points during a series of flights in such a way as to guard particularly against transient fatigue.
- (c) The necessity to provide flight crewmembers with adequate opportunity to recover from fatigue.
- (d) The necessity of taking into account other related tasks the flight crewmember may be required to perform in order to guard particularly against cumulative fatigue.

DEFINITIONS

2. (1) **Flight Time.** The definition of flight time is of necessity very general but in the context of limitations it is, of course, intended to apply to flight crewmembers in accordance with the relevant definition of a flight crewmember. Pursuant to that latter definition, licensed crew personnel travelling, as passengers cannot be considered flight crewmembers, although this should be taken into account in arranging rest periods.

(2) **Flight Duty Period.** The definition of flight duty period is intended to cover a continuous period of duty, which always includes a flight, or a series of flights. It is meant to include all duties a flight crewmember may be required to carry out from the moment they report to their place of employment on the day of a flight until they are relieved of their duties, having completed the flight or series of flights. It is considered necessary that this period should be subject to limitations because a flight crew member's activities within the limits of such period would eventually induce fatigue — transient or cumulative — which could endanger the safety of a flight. There is on the other hand (from the point of view of flight safety) insufficient reason to establish limitations for any other time during which flight crewmembers are performing a task assigned to them by the operator. Such task should, therefore, only be taken into account when making provisions for rest periods as one among many factors, which could lead to fatigue. The definition does not imply the inclusion of such periods as time taken for a flight crewmember to travel from home to the place of employment. An important safeguard may be established if States and operators recognize the right of a crewmember to refuse further flight duty when suffering from fatigue of such a nature as to affect adversely the safety of flight.

(3) **Rest Period.** The definition of rest period implies an absence of duty and is intended to be for the purpose of recovering from fatigue; the way in which this recovery is achieved is the responsibility of the individual.

TYPES OF LIMITATIONS

3. (1) Limitations are broadly divided by time; for example, the majority of States reporting to ICAO prescribe daily, monthly and yearly flight time limitations, and a considerable number also prescribe quarterly flight time limitations. It will probably be sufficient to prescribe flight duty period limitations on a daily basis. It must be understood, however, that these limitations will vary considerably taking into account a variety of situations.

(2) In formulating regulations or rules governing flight time limitations the size of the crew complement and the extent to which the various tasks to be performed can be divided among the crew members should be taken into account; and in the case where adequate facilities for relief are provided in the aircraft in such a way that a crew member may have horizontal rest and a degree of privacy, flight duty periods could be extended. Adequate rest facilities on the ground are required at places where relief periods are to be given. Also States or operators should give due mass to the following factors: traffic density; navigational and communication facilities; rhythm of work/sleep cycle; number of landings and take-offs; aircraft handling and performance characteristics and weather conditions.